

Novel Cartographic Praxis in a Classroom: Visualizing Seattle

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Abstract:

The relationship between geography, arts, and humanities has a long history; however, the inter-relationships of these three domains have been dramatically intensified by creative reconfigurations of digital mapping and cartography that resonate humanistic and artistic thinking and practices—novel cartographic praxis (Allen and Queen 2015; Daniels et al. 2011; Hartfield et al. 2018; Hawkins 2014; Rossetto 2014; Sui 2010). Various interdisciplinary collaborations and mixed methodologies are blended in a “creative turn” in GIS and geo-visualization, including the growing body of creative geographies, as well as socially engaged public arts, participatory design, and digital public scholarship (Elwood 2022; Hawkins 2017; Kim 2015; Lupi and Posavec 2016; Wilmott 2020). Post-presentational mapping can be an overarching term for a diverse range of creative geographic works, in which geography, art, and the humanities proffer the potential to think and practice space, geography, and representation differently (Cosgrove 2008). This paper illustrates various modes of creative geovisualization and digital storytelling, and how it helps students in a classroom embrace and generate various modes of data and analysis that value representation in different ways.

All place-based phenomena can be mapped in some way, but not all visualizations of human spatial experiences can or should take traditional cartographic forms. Complex, context-rich human experiences of space and place, and multi-dimensional data representing spatial phenomena (movements, time, emotions, subjective perceptions, thematically-related phenomena occurring at other times/places, etc.) are difficult to represent in traditional cartographic form. Yet visualizing these aspects of human spatial experience is an important way to deepen our understanding of them.

Visualizing Seattle is an introductory course in spatial data science situated at the intersection of geography, digital humanities, and data studies with a particular emphasis on mapping and visualization that represents and generates more contextual and nuanced meanings of space and people. Digital data are simplified, abstracted representations that often leave behind a range of social, cultural, symbolic, embodied/experiential contexts that make places unique. In most cases, our students learn spatial phenomena first through the secondary digital dataset, which often results in missing the critical context in their data analysis and storytelling. To help students understand and re-discover the rich socio-spatial contexts that may not be immediately apparent and visible within a digital data set, this course provides several activities and opportunities to see human experiences behind abstract forms of data and map out their findings. Such activities include data encoding, field sketching, web scraping, data generation and standardization, and more.

Empirical examples from students' work showcase how they embrace and generate various modes of data, analysis, and visualization that value and incorporate their own spatial experience in more than cartesian mapping. Students reflected that they enjoyed the amount of potential for further in-depth thinking that can occur from their visualizations. In the class, students leave a convenient pre-defined design system of desktop GIS behind, and they created unusual forms of maps like Sankey diagram, Radial dendrogram, Stacked bar chart, and etc to contextualize/narrate a spatial story. Students reexamine visual variables different than traditional maps and deeply determine what could be told in their visuals. One student group depicted who/when immigrate to Seattle and why the destination was decided by the immigrants in Sankey diagram in Figure 1. The group tried to tell that the more job opportunities in downtown and lower language barriers in South Seattle attracted more migrants over the years, which was found in their data reading. In the practice, students critically determine what they want to depict from many possible stories, creatively examine visual variations of nodes and arcs of Sankey diagram, encode selected visual variables using python visual libraries, iterate the process to tell their spatial data story with efforts to understand data in relation to human spatial experiences. These class praxes are used to deepen and nuance their data visualizations as they incorporate tone and perspectives that more fully capture socio-spatial contexts in their visual narration of place.

The novel cartographic praxes in the classroom inspire students to examine data from various perspectives uniquely by connecting personal (human) experiences and guide students to narrate a spatial story. It is a pedagogical intervention

that convinces students how critical and creative engagement with mapping, digital data, and geovisualization could be valuable ‘and’ makes them part of changing directions in learning and teaching creative geovisualization.

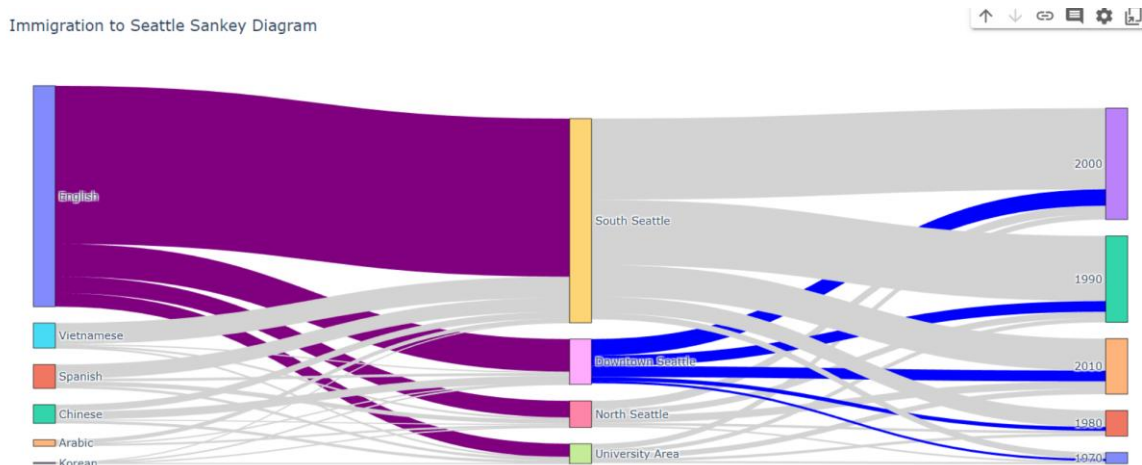


Figure 1. Student project example: Welcome to Seattle. Immigrants Settlement in Seattle Community with Different Language and Moving Times, created by Christopher Cha and Wenxuan Yu (UW Geography Alumni) in 2023, data source: data.Seattle.gov

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