Negeen Aghassibake Position Statement: Data Visualization and Equity, Diversity, Inclusion, and Social Justice

# Background

Data visualization is an increasingly important tool being used in libraries and in academia, whether by students, faculty, or staff. Libraries have access to data that are often passively collected by their institutions and using them for decision-making and transparency.

While the benefits of data visualization are obvious, the subject is still relatively new to the library scene in comparison to more widespread library topics, such as information literacy. As a result, library use and instruction around data visualization is in its infancy and intersects with broader concerns. This project focuses on how data visualization is used and taught in libraries with respect to advocating for and considering equity, diversity, inclusion, and social justice.

Current library instruction around data visualization focuses on uses for and technical aspects of the topic. The intersection of data visualization and equity, diversity, inclusion, and social justice is largely unexplored, both in libraries and in other spaces. Libraries are in a unique position to be able to encourage discourse at this intersection and to think critically themselves about the data visualization work that they do and how it impacts their audience. Data visualization can be used to advocate for social justice (Lambert), and libraries can lead the discussion on how to push for change.

# Visualization Development

From Edward Tufte to Stephen Few and other data visualization names in between, there are a number of data visualization best practices that have surfaced in the field. Some examples include following minimalist design aesthetics and using only certain chart types. However, often the “best practices” were developed based on Western, white, heteronormative, ableist, and binary assumptions.

An example of this is using a binary system to represent gender and data. Icons and other forms of visual representation (pink/blue binary) on data visualizations often commit to a binary structure and exclude non-binary genders. It is important to remember that “non-binary gender and data represents complicated terrain for computational applications for numerous reasons. But we have an ethical and empirical imperative to tackle this complexity” (Karinka).

Another example is constructing time as linear and cumulative where other non-Western cultures may view time as cyclical or seasonal. This would affect which visualization would be the most effective at communicating change throughout time: would a line chart be the most appropriate? Would events be best represented over a cycle?

The technical focus of data visualization use in libraries limits or prohibits careful examination of these questions. A shift to more critical data visualization practices can open discussion for how these concerns can be addressed and considered in the development of visualizations in libraries. This approach must also consider all parts of the process of creating a visual: data collection, data cleaning and preparing, data management, and visualization development.

# Data Visualization Instruction

Instruction around data visualization tends to focus on technical aspects: learning specific software, creating charts, calculating trends. Library instruction is often limited in time and therefore must balance the need to teach technical skills and pair them with critical skills. This project aims to create instruction modules that outline the critical skills and demonstrate practical methods of incorporating them into technical instruction.

# Future Work

The primary outcome from this project will be instruction modules developed for librarians on thinking critically about equity, diversity, inclusion, and social justice and its intersections with data visualization and use it as an advocacy tool. The modules will also contain support on how to teach data visualization critically and inspire discussion on new best practices.

Another goal of this project is to redevelop best practices around data visualization to push for equity and inclusion, both in the creation and implementation stages. These best practices will extend beyond libraries, though they will be shared mainly a library audience through an accessible platform, such as LibGuides. With a new set of best practices and practical, applicable instructional modules, libraries will be in a better position to participate in data visualization development and influence the conversation to improving equity and inclusion during the creation process and advocating for social justice.

# References

Lambert, Steve. “And what do I do now? Using Data Visualization for Social Change.” The Center for Artistic Activism. January 23, 2016. Accessed July 2, 2019. https://c4aa.org/2016/01/data-visualization-for-what/

Karinka. “A Primer on Non-Binary Gender and Big Data.” MIT Center for Civic Media. Accessed July 2, 2019. https://civic.mit.edu/2016/06/03/a-primer-on-non-binary-gender-and-big-data/