Dear Mike Bostock and Shan Carter,

I am writing this letter in response to a visualization you created for the New York Times within the past year, titled *Over the Decades, How States Have Shifted*. As a student in Dr. Ben Shneiderman’s Information Visualization course at the University of Maryland, the main point of this letter is to critique and offer some of my personal insights/suggestions regarding this particular visualization. I would also like to express my gratitude for the numerous visualizations you have created in the past and especially for your work on D3, which I have been following since early 2012.

Overall, I found the visualization design to be clean and elegant, while also being very informative. While interacting with the visualization, I observed several strengths and weaknesses that I feel are important to note. I noticed that D3 was used to produce this visualization, thus it was able to quickly respond to subsequent data transformations that were driven by my interaction with it while using Google Chrome v29.0.1547.65 and Firefox v23.0.1. I did however notice a slight decline in responsiveness when running the visualization in Safari v6.0.5.

One aspect of the visualization that made it difficult for me to explore the data was the use of border color on a path once it was selected (white). Due to the overall visualization utilizing a light-colored scheme, it was difficult to discern a highlighted path from the other paths, which may or may not overlap as the political stance of various states change over time. This, in conjunction with the choice to have a white background, seems to be problematic for the intended audience to view political swing over the years. The end user is forced to focus harder and follow the selected path from one year to the next so that they are not visually lost amongst the rest of the data. This causes the unintentional effect of preventing a user from deriving insight from the data, which I believe to be how a state changed politically over time (i.e. Utah voted mostly Republican every year except for 1964). I noticed that you chose to use black rectangular boxes to highlight the location of a state on the horizontal political axis for each year. This proved to be a great choice and I was able to easily locate the state each year. If I may make a suggestion, I believe it would be to beneficial to extend the use of this black border to the paths as well. This would allow an end user to quickly track the change over time by visually following the black-bordered path of the state that was selected rather than hunting for the states’ black box each year.

Another aspect of the visualization that I found demonstrated different behavior based on the platform I used was the selection of a state and it’s corresponding path. While exploring the visualization using Firefox, Chrome, and Safari, I found that I was not able to permanently select/highlight a path and then scroll down the webpage to view the change in data. Once the mouse changed location on the page due to the scrolling effect, D3 would detect the mouse leaving the borders of the

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path and deselect it. Thus, selection of a path is strictly governed by the position of the mouse. If this was the intended behavior, then I feel that the visualization would be best suited for large displays where the user could view the entire visualization without scrolling. However, since most computer screens cannot accommodate such a large visualization in this manner, the user is forced to scroll up/down the page and subsequently lose their selection. When viewing the visualization on a mobile device (iPhone 5 with iOS 7), I was able to select and highlight a path, scroll down the page, and track the progression of political swing. This only worked due to differences in how touchscreen devices register click and scroll events as compared to conventional computers with a mouse and monitor. Two examples of other New York Times visualizations that allow users to select/highlight a path in a more permanent manner and that are not dependent on the location of the mouse are the following:

- Strikeouts on the Rise\(^2\)
- Housing’s Rise and Fall in 20 Cities\(^3\)

Thank you for taking the time to read my critique. I am interested in knowing whether some of the visualization aspects I pointed out are the result of a design decision and if so, what those reasons may have been.

Sincerely,

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\(^2\) http://www.nytimes.com/interactive/2013/03/29/sports/baseball/Strikeouts-Are-Still-Soaring.html