February 2, 2011

Dear Shan Carter and Amanda Cox,

Thank you for the illuminating interactive graphic, “Obama’s 2011 Budget Proposal: How It’s Spent”. Today, political and economic discourse regularly tackles numbers which are difficult for us to put into perspective, so visualizations like yours are crucial to understanding their sense of scale and analyzing the information. As a student in Ben Shneiderman’s Information Visualization course at the University of Maryland, I am writing this letter to offer my insights and suggestions regarding this interactive visualization.

The treemap approach is well suited for this data since it allows users to intuitively navigate and analyze the components of the 2011 budget proposal, compare their scales, and find their hierarchical relationships. The click-centering and click-zooming interface gives the user familiar controls for the visualization’s focus and scale. The dragging control also gives viewers a natural method for navigating the visualization once they are already zoomed into the window. Finally, the dialog windows which provide identifying and in-depth information are an effective method for communicating the information relevant to the component that the user has selected. These features are important to the usability and effectiveness of the visualization, but there are several shortcomings which could be improved.

Firstly, the visualization uses a red and green color spectrum to denote the percent changes for each segment of the budget from 2010 to 2011, but nearly 10% of the male population is red-green colorblind. Consequently, it is imperative that the visualizations use a different color spectrum or simply just a grayscale representation.

Secondly, expert users may know the budget segments they want to investigate, but the visualization currently does not label sub-segments of the budget. As a result, searching for a known element can be tedious. One way to overcome this flaw would be to provide an indented tree menu adjacent to the treemap. It might also be advantageous to display the names of each segment once the user has zoomed in since there is ample space to do so.

Finally, the zooming controls and capabilities could be improved. Zooming in by clicking a segment is intuitive and simple and zooming out should be the same way, but using a zoom out tab feels like an unnatural aside. Keyboard controls options for zooming or right click functionality could be incorporated to give intuitive zoom out control. The zoom capability is also limited to only three distinct levels, but some segments of the budget are still not easily visible. Giving a greater range of zoom levels would allow users to avoid situations like the one in the attached figure, where even at the highest zoom a segment is still small and difficult to select. There is also a minor misleading zoom cursor icon which still appears when the mandatory spending segments are hidden, despite the fact that the user can not use the zoom function. Addressing these options would give users greater freedom when navigating the data, and as previously mentioned, it would also allow improved labels at increased zoom levels.
This interactive visualization effectively communicates the intended information and provides users with natural controls, but revising the color scheme, adding additional methods for browsing the textual elements, and expanding the zooming controls would be welcome improvements. Thank you for creating this wonderful visualization of Obama’s 2011 U.S. budget proposal, I hope that you find these suggestions valuable for future visualizations, and I look forward to seeing them.

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An example of a segment of the budget which is only two pixels wide and difficult to select even at the highest zoom level.