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Greetings,

I am a PhD student in Prof. Ben Shneiderman’s information visualization class at the University of Maryland and am writing in response to your interactive graphic published on the New York Times web site on April 10, 2013 titled *The Scale of the President’s Budget*.\(^1\) The graphic uses deceptively-simple horizontal bars to help the reader compare President Obama’s 2014 budget with other proposals and historical averages. While the budgets' (relative) sizes – represented by the lengths of the bars – are prominent, the graphic also lets readers compare budgets with respect to (i) the proportion covered by revenue versus deficit spending, (ii) proportions dedicated to different spending categories and (iii) amounts spent in those categories. I’d like to share, in detail, a few more ways that I admire this work and also a few suggestions for improvement; in particular I will apply the Eight Golden Rules,\(^2\) which are helpful for assessing an interactive graphic like yours.

1. **Strive for Consistency.** The graphics, labels and descriptions all seem consistent and nicely executed. However, there are two types of inconsistency that a reader may notice. First, the reader may not grasp how the bars are comparable, since not all are budget proposals. These readers may wonder why *Obama* is listed twice and in two colors. Second, the spending category names appear inside budget details, so the reader has to search visually up and down for the category names instead of looking to a consistent location. Interestingly, because the spending category descriptions are nested inside budget details, readers may also wonder if they differ for each budget (but they do not).

2. **Enable frequent users to use shortcuts.** The plus signs next to the names of the budgets are a cue that more information is available, but the frequent

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\(^1\)http://www.nytimes.com/interactive/2013/04/10/us/politics/obama-budget-comparison.html

reader will notice that clicking anywhere on the row will expand that budget.

3. Offer informative feedback. As the reader hovers over a budget, that row highlights. After expanding, the budget highlight remains and the plus sign disappears.

4. Design dialog to yield closure. Graphics like yours yield closure when readers draw conclusions from the data. In this regard, the graphic may succeed best for informed readers. Conclusions that could be drawn include (1) the president’s proposal is conservative, but so are other progressive proposals. And (2) the proposal is more conservative than past Obama years and predecessors on average. Readers informed by reading the related article\(^3\) may have these questions in mind, but others may struggle to feel closure without that context.

5. Offer simple error handling. Handling errors is largely unnecessary with this good design. However, prevention is also important and some readers may erroneously conclude that only spending in those categories to the left of the yellow line contribute to the deficit.

6. Permit easy reversal of actions. Some readers may want to collapse a budget after opening one, but this isn’t possible without reloading the page.

7. Support internal locus of control. The reader should feel in control using this graphic. However, some readers may want to reorder the bars or see the actual dollars adjusted for inflation instead of GDP percentages.

8. Reduce short-term memory load. The graphic functions effectively at multiple levels; the reader can ignore detail about spending categories until interested. However, the names of spending categories are Saturnic – the reader has to either memorize all the spending categories or move their cursor back and forth to see them all.

Respectfully,

Alex Memory

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