TimeLoaf Storyboard Images

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TimeLoaf is a web-based interactive visualization tool built with D3 that visualizes data from the American Time Use Survey conducted by the Bureau of Labor Statistics. It displays the average number of hours spent (in a 24-hour day) performing one of twelve high-level primary activities for men, women, and both genders, according to either weekdays or weekends and holidays, from 2003 to 2012, as one or more donut charts.

Figure 1

The basic user interface layout for TimeLoaf, including a filterable list of the time use activities, left, and additional filter commands, for year, genders, and time of week, below.

This storyboard image depicts the visualization when showing a single year of data.

Figure 2

StoryLoaf supports a ranged selection of years from the underlying data set, which changes the visualization layout to show multiple donut charts as small multiples, one for each year.

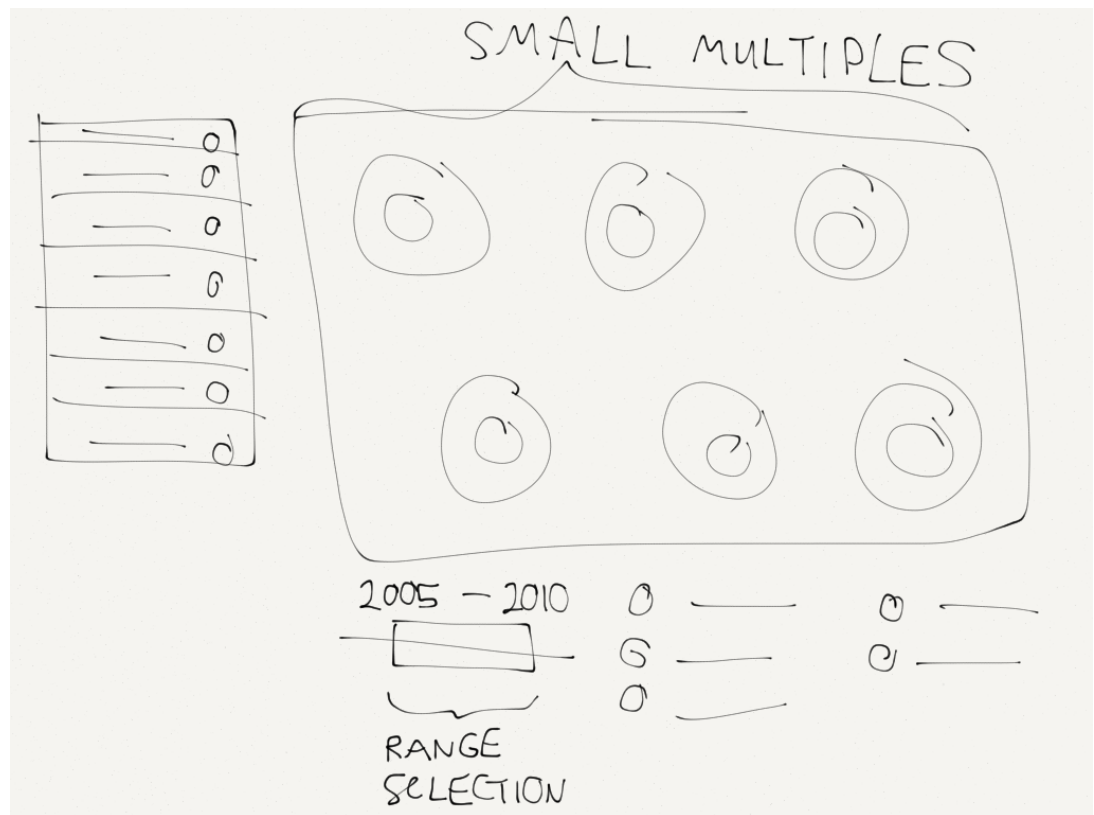SMALL MULTIPLES

2005 — 2010

RANGE SELECTION

Figure 3

StoryLoaf includes a basic implementation of multiple coordinated views with synchronized brushing. When brushing over an activity region in a donut chart, the corresponding regions in other charts, plus the corresponding filter control widget, are all highlighted in unison.
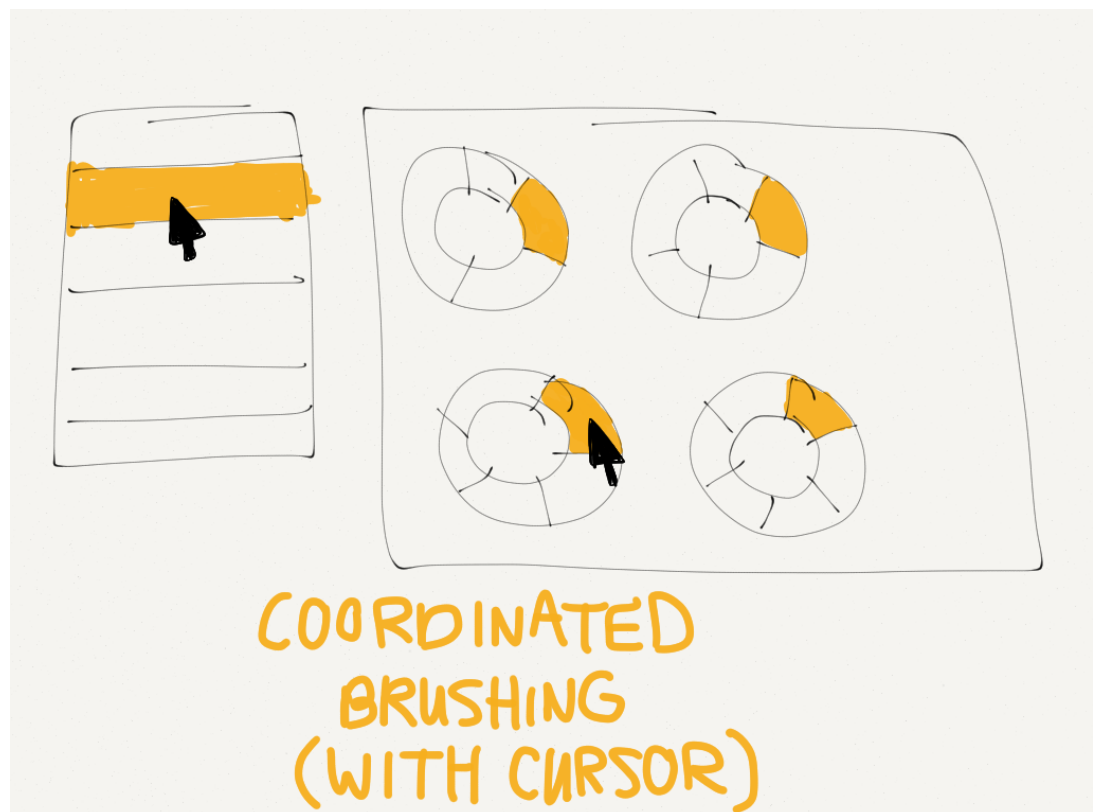
COORDINATED BRUSHING (WITH CURSOR)

Figure 4

One unimplemented concept for TimeLoaf: an animated transition from donut graph to stacked area chart. This animation may have been especially compelling when transitioning from small multiples to a multi-year stacked area chart.
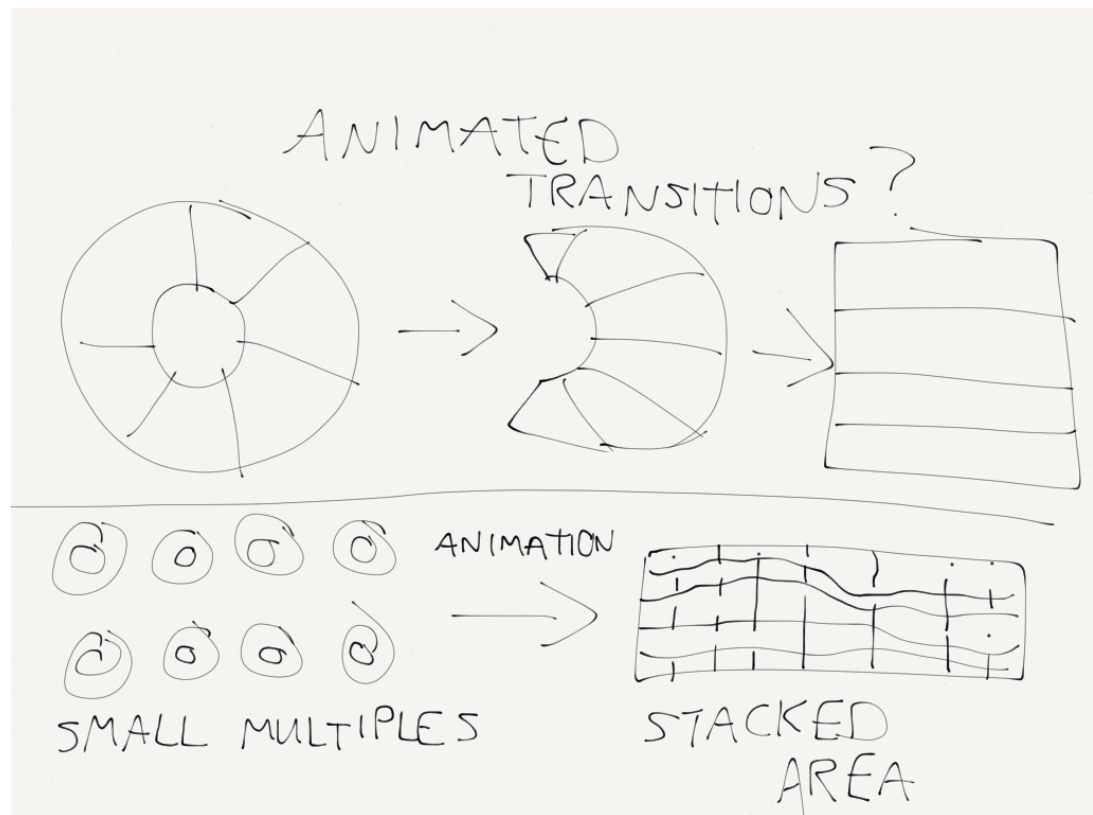

Figure 5

Another unimplemented idea in which the donut charts representing a single year of data would appear as a cross-section of a time-delimited 3-D cylinder, reinforcing a mental model of timeslicing.

A 3-D rotation and geometry transform would thus support a transition from a single donut "slide" (the front edge of the cylinder) to an "unrolled" stacked area chart (the flattened side of the cylinder).