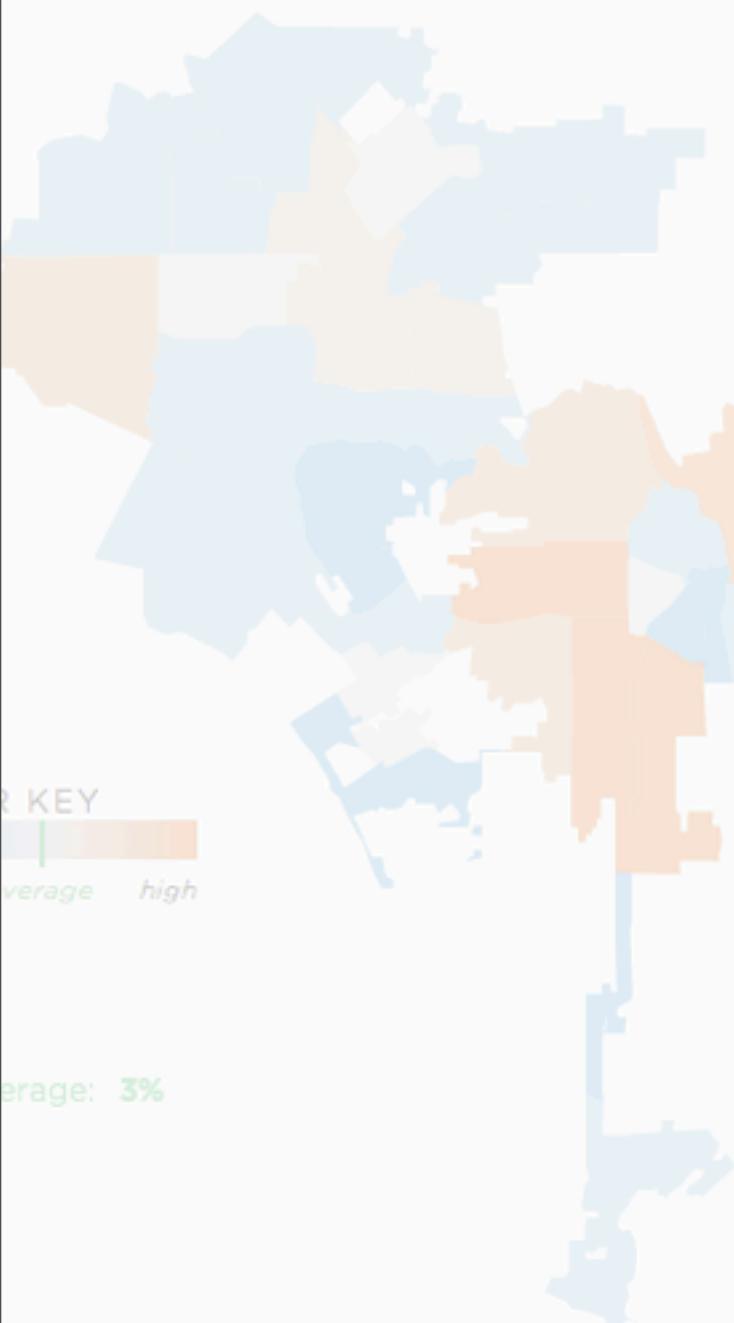


UI Design Principles

2 seconds

to instruct or not to instruct

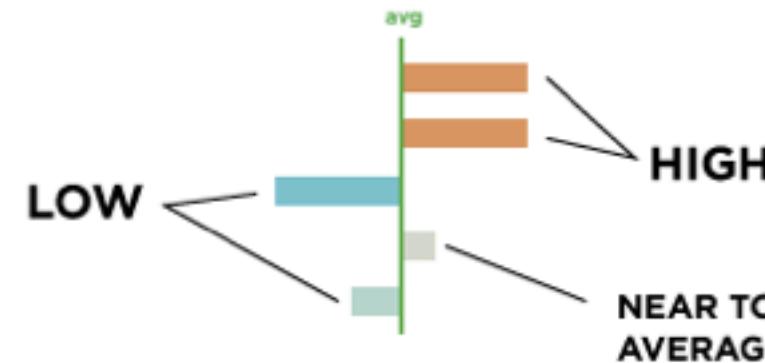
Percentage of Total Population



Hints for exploration!

This graphic is meant to be explored. Almost every part of the maps and charts can be clicked on for more information.

- Things that are **RED** indicate values that are high, relative to the average.
- Things that are **BLUE** indicate values that are low, relative to the average.
- Things that are **GRAY** are close to the average.
- The **average value** is often indicated with a green line.



- Clicking on the map will lock the geography, allowing you to compare one area of the City to others.
- Click on Neighborhood to view the interactive neighborhood profiles



HEALTH PROFILES
City Neighborhoods

click anywhere to get started!



twitter
tracker

powered by
stamen



REPLAY



BUZZ • PAPARAZZI

tweet #MTVEMA

OVERALL

RECENT

- 1 BIG BANG
- 2 LADY GAGA
- 3 SELENA GOMEZ
- 4 BRUNO MARS
- 5 JUSTIN BIEBER
- 6 ADELE
- 7 KATY PERRY
- 8 EMINEM
- 9 DAVID GUETTA
- 10 BRITNEY SPEARS
- 11 COLDPLAY
- 12 RIHANNA
- 13 BEYONCE
- 14 KANYE WEST
- 15 30 SECONDS TO MARS
- 16 PARAMORE
- 17 LINKIN PARK
- 18 SNOOKI



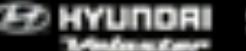


twitter
tracker

powered by
stamen



REPLAY

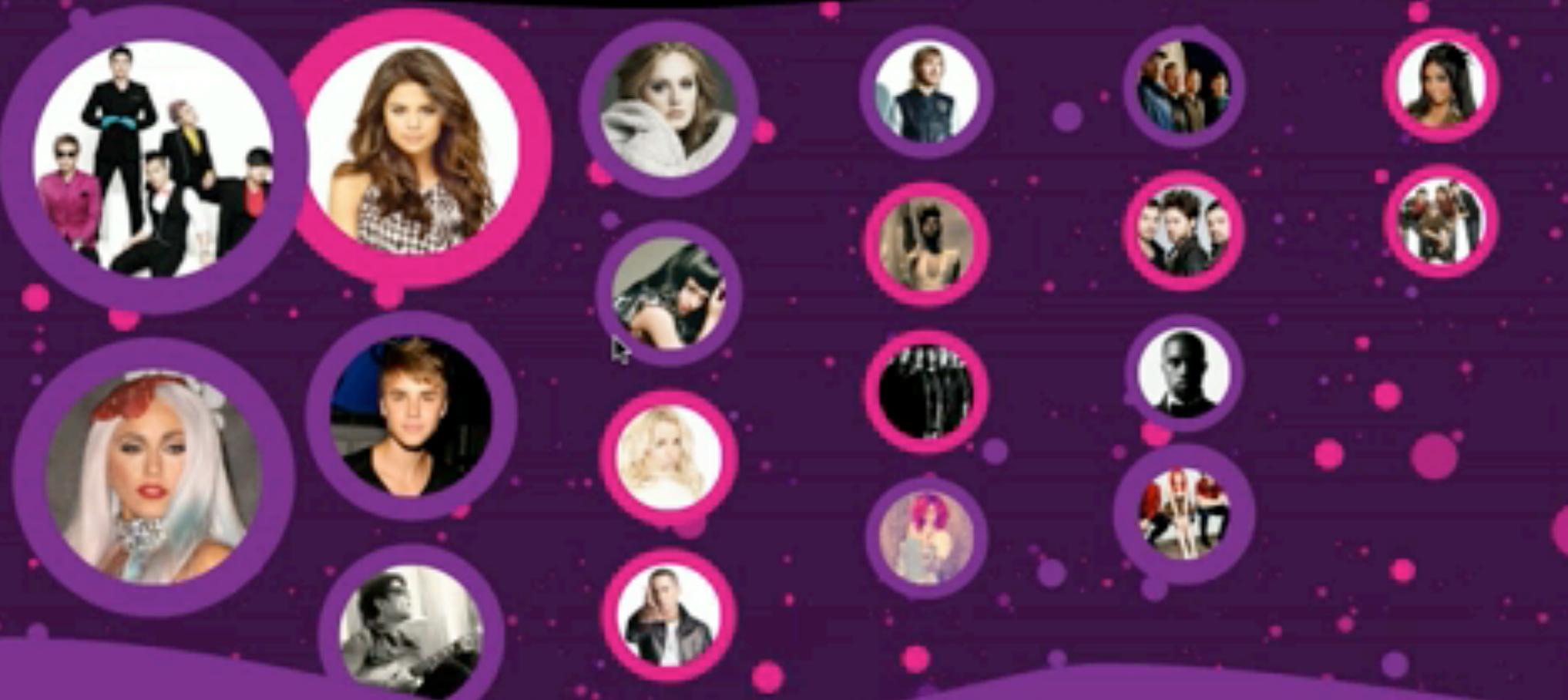


BUZZ • PAPARAZZI

tweet #MTVEMA

OVERALL RECENT

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- 11 BEYONCE
- 12 LINKIN PARK
- 13 RIHANNA
- 14 COLDPLAY



2,369,343
TWEETS SINCE 10:50AM



**audience
familiarity of format
precision of information
discoverability**

U.S. GUN DEATHS IN

2013 2010

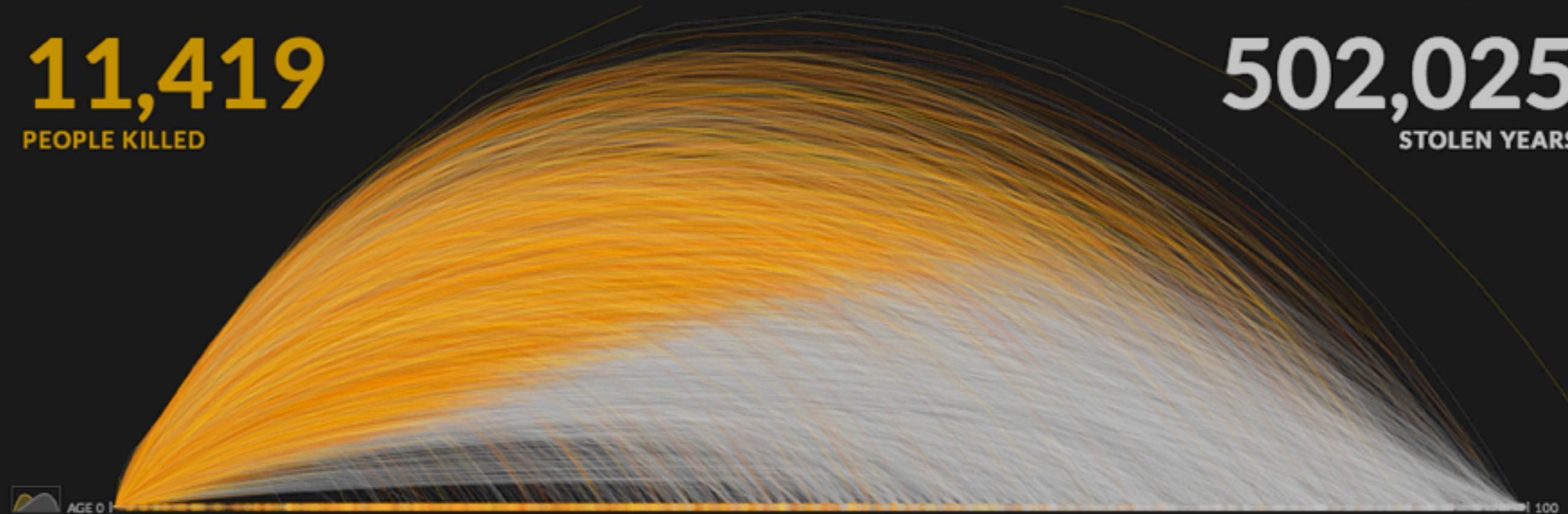
11,419

PEOPLE KILLED

DECEMBER

502,025

STOLEN YEARS ?



**explanation as
instruction vs. animation**

the things you should
customize, and the things
you should not

design patterns

Split button dropdowns

Similarly, create split button dropdowns with the same markup changes, only with a separate button.

EXAMPLE



```
<!-- Split button -->
<div class="btn-group">
  <button type="button" class="btn btn-danger">Action</button>
  <button type="button" class="btn btn-danger dropdown-toggle" data-toggle="dropdown">
    <span class="caret"></span>
    <span class="sr-only">Toggle Dropdown</span>
  </button>
  <ul class="dropdown-menu" role="menu">
    <li><a href="#">Action</a></li>
    <li><a href="#">Another action</a></li>
    <li><a href="#">Something else here</a></li>
    <li class="divider"></li>
    <li><a href="#">Separated link</a></li>
  </ul>
</div>
```

Sizing

Button dropdowns work with buttons of all sizes.

EXAMPLE

Large button ▾

Small button ▾

Extra small button ▾

Glyphicons

Dropdowns

Button groups

Button dropdowns

Single button dropdowns

Split button dropdowns

Sizing

Dropup variation

Input groups

Navs

Navbar

Breadcrumbs

Pagination

Labels

Badges

Jumbotron

Page header

Thumbnails

Alerts

Progress bars

Media object

List group

Panels

Wells

Back to top

common pitfalls

plain text buttons



twitter
tracker

powered by
stamen



REPLAY



BUZZ • PAPARAZZI

tweet #MTVEMA

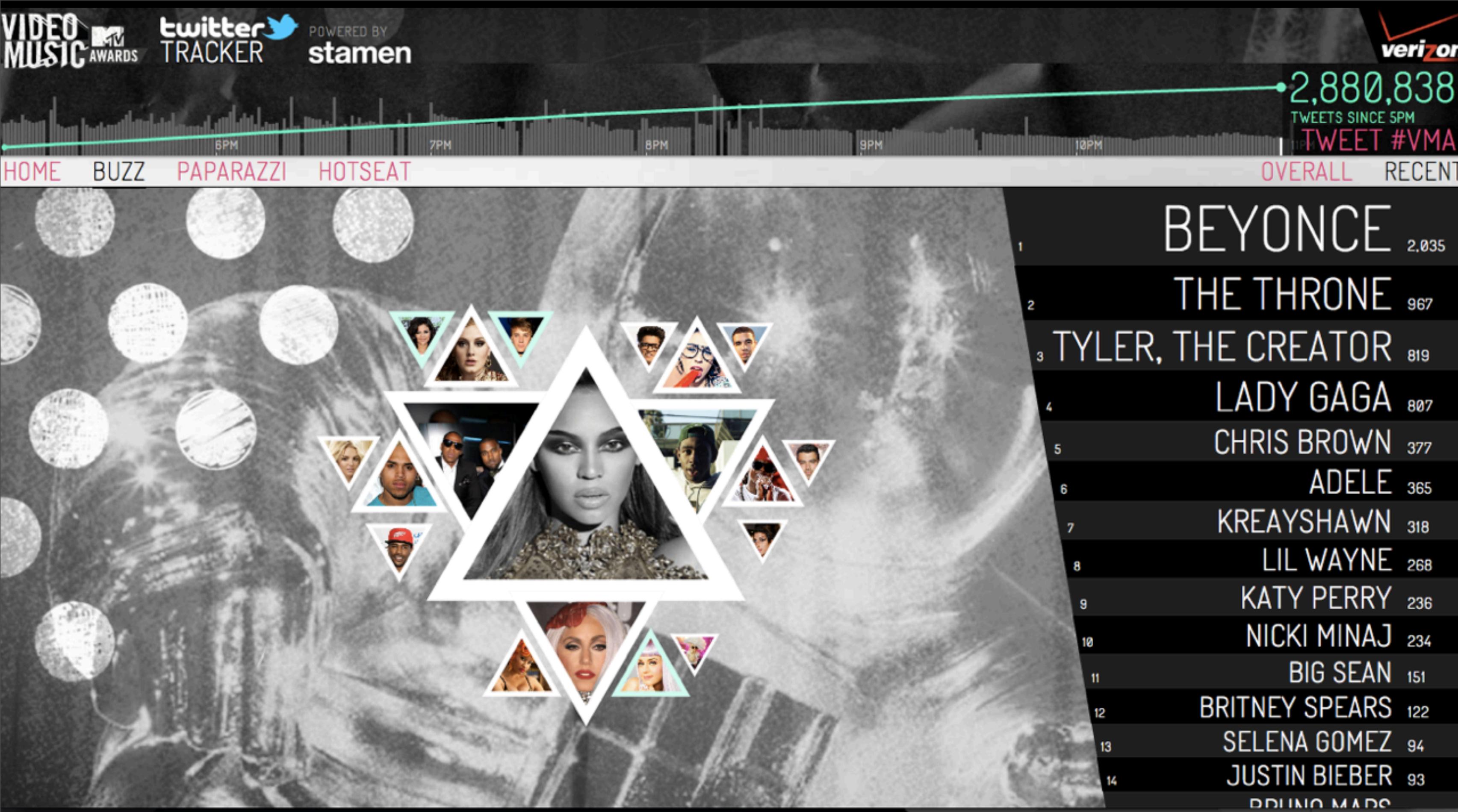
OVERALL

RECENT

- 1 BIG BANG
- 2 LADY GAGA
- 3 SELENA GOMEZ
- 4 BRUNO MARS
- 5 JUSTIN BIEBER
- 6 ADELE
- 7 KATY PERRY
- 8 EMINEM
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- 12 RIHANNA
- 13 BEYONCE
- 14 KANYE WEST
- 15 30 SECONDS TO MARS
- 16 PARAMORE
- 17 LINKIN PARK
- 18 SNOOKI



entering and exiting a
selected state



**clickable elements that
don't inform the user**



Use of the word:

Electricity



GE

Global
International
Economy
Digital
Innovation
Growth

MOVING

Aviation
Aircraft
Transportation
Rail

POWERING

Energy
Electricity
Oil
Solar
Wind
Renewable

CURING

Health
Diagnostic
Imaging
Cancer
Patient

BUILDING

Manufacturing
Technology
Lighting
Appliances
GE Capital

main area is not interactive

Innovation Barometer 2013

[About](#) | [Instructions](#)



Topics

Model

- Approach
- Policy
- People
- How We Compare

Region

World

- Developed
- Emerging
- BRIC
- MIST
- Western Europe
- Middle East

Country

ALL

- Australia
- Brazil
- Canada
- China
- Germany
- India
- Ireland
- Israel

Japan

- Malaysia
- Mexico
- Netherlands
- Nigeria
- Poland
- Russia
- Saudi Arabia
- Singapore
- South Africa
- South Korea
- Sweden
- Turkey
- UAE
- UK
- United States
- Vietnam

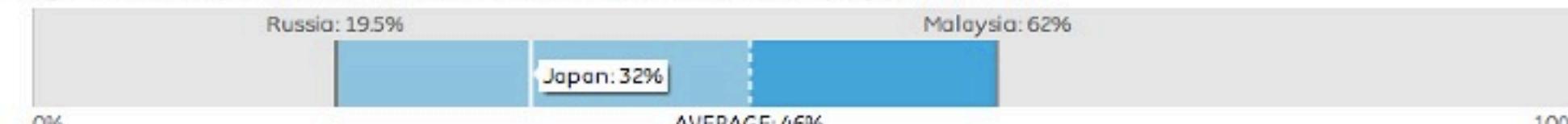
Model: Moving beyond product innovation

Within the context of today's low-growth, resource-constrained world, business model innovation is gaining momentum. Customer needs and market insights are rapidly shifting. As innovators adapt to this new reality, traditional business models are being disrupted in order to unlock new growth opportunities.

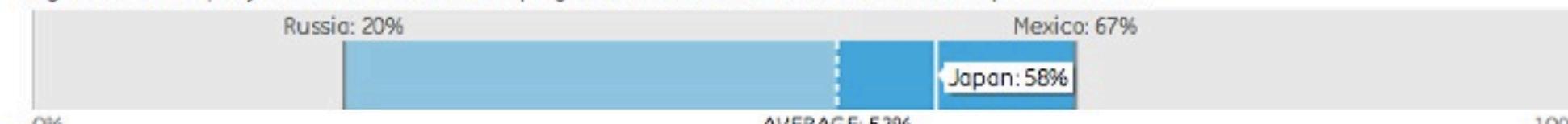


Replay

Agree the development of new business models contribute most to company performance.



Agree their company should focus on developing new business models to boost future performance.



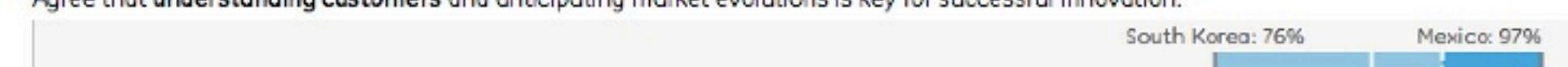
Agree their company should improve existing products or services to boost future performance.



Agree that coming up with new business models is important for a company to innovate successfully.



Agree that understanding customers and anticipating market evolutions is key for successful innovation.



Rankings

ON

exercise:

Analyzing the UI of

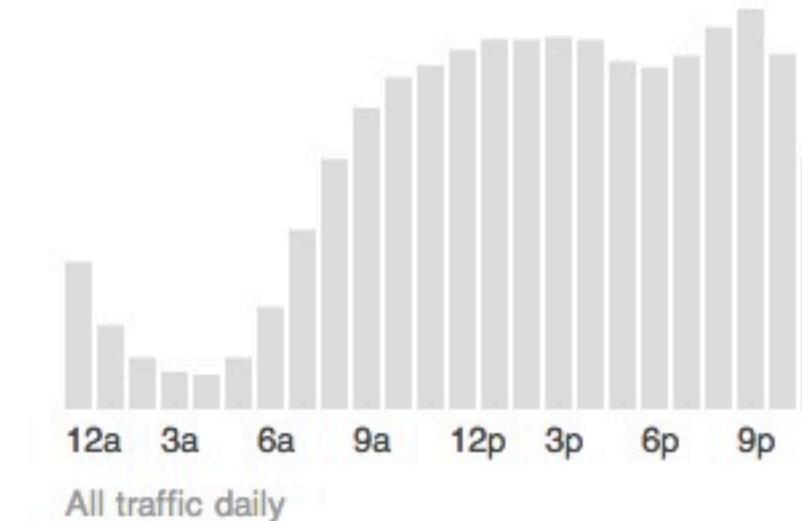
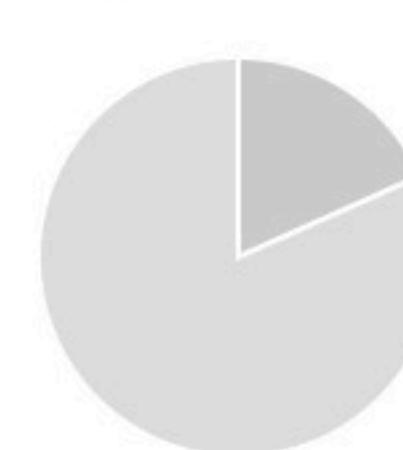
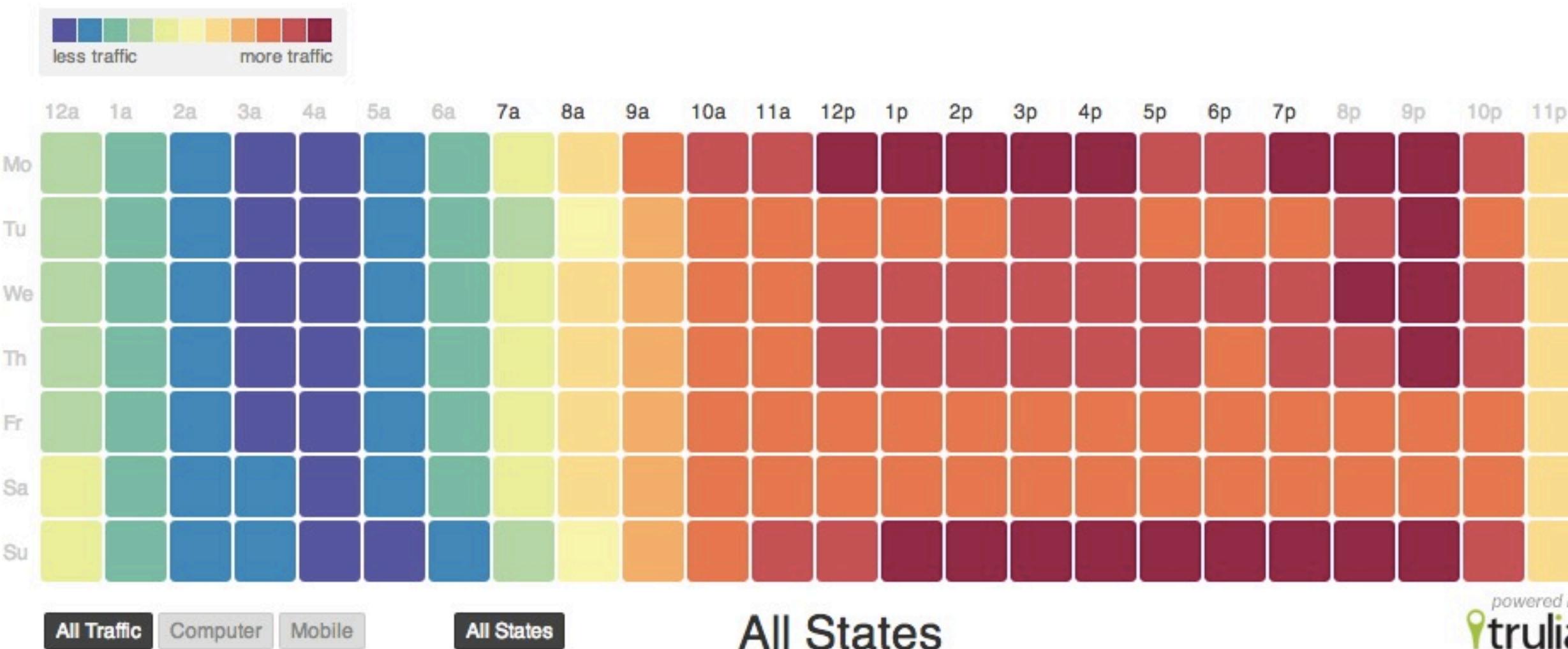
Visualizations

- 1) What sort of UI elements are present?**
- 2) Is there a key?**
- 3) How does the visualization instruct the viewer to use it?**
- 4) How could it be improved?**

House Hunting All Day, Every Day



Most people search for homes on Mondays at 9:00 PM. When are you window shopping?



Four Ways to Slice Obama's 2013 Budget Proposal

Explore every nook and cranny of President Obama's federal budget proposal.

[All Spending](#)[Types of Spending](#)[Changes](#)[Department Totals](#)

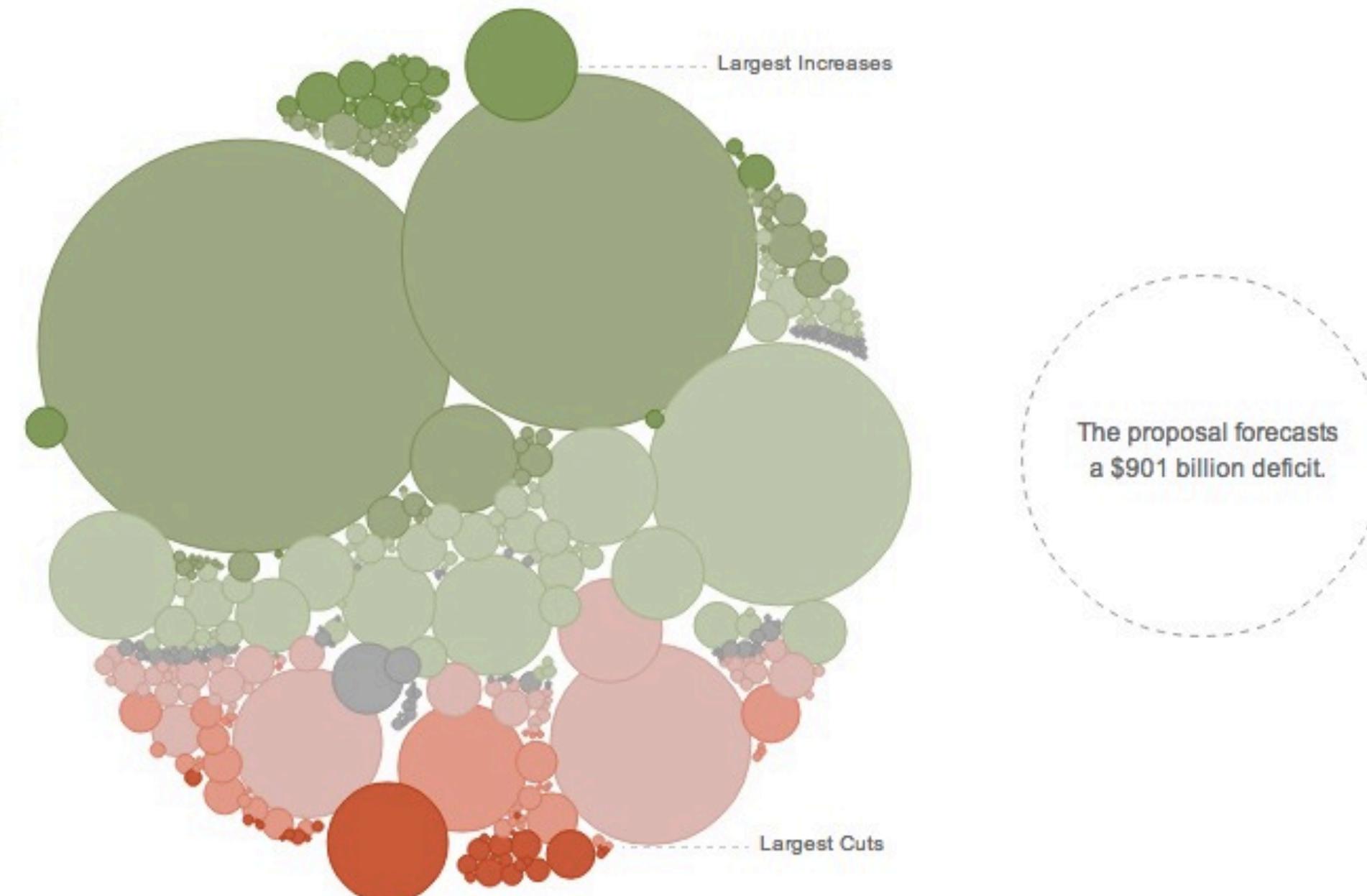
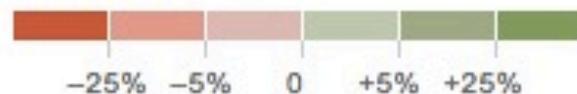
How \$3.7 Trillion Is Spent

Mr. Obama's budget proposal includes \$3.7 trillion in spending in 2013, and forecasts a \$901 billion deficit.

Circles are sized according to the proposed spending.



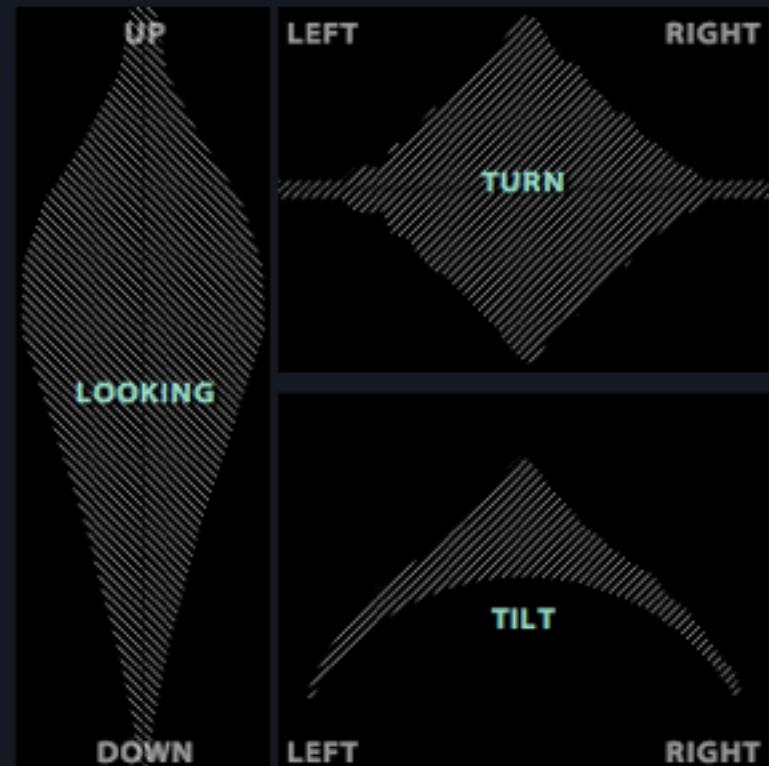
Color shows amount of cut or increase from 2012.



DEMOGRAPHICS



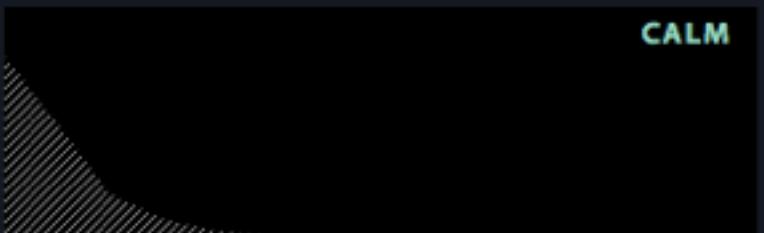
POSE



FEATURES



MOOD



3200 of 3200 selfies.

Normal

Crop

Crop & rotate

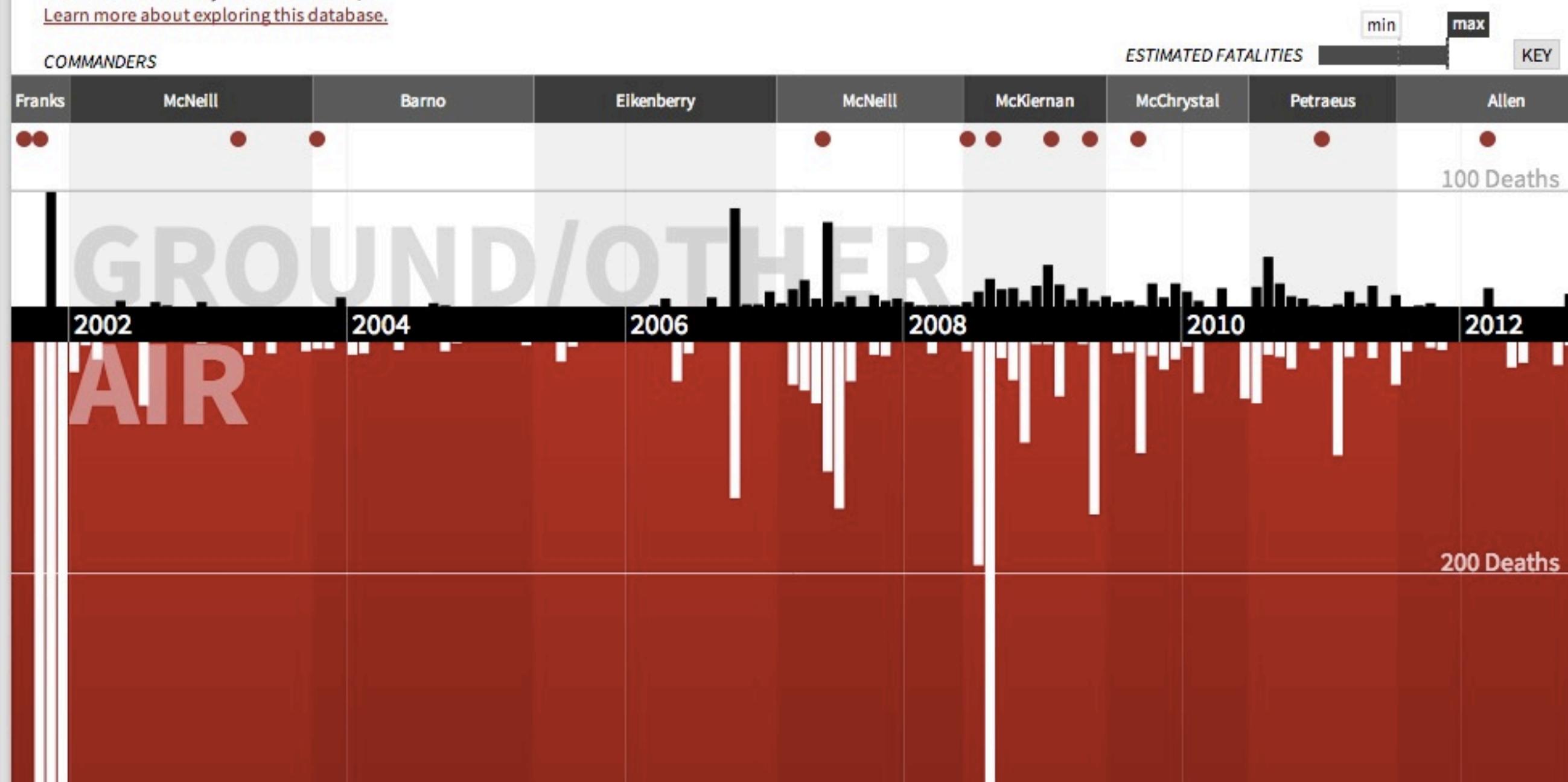
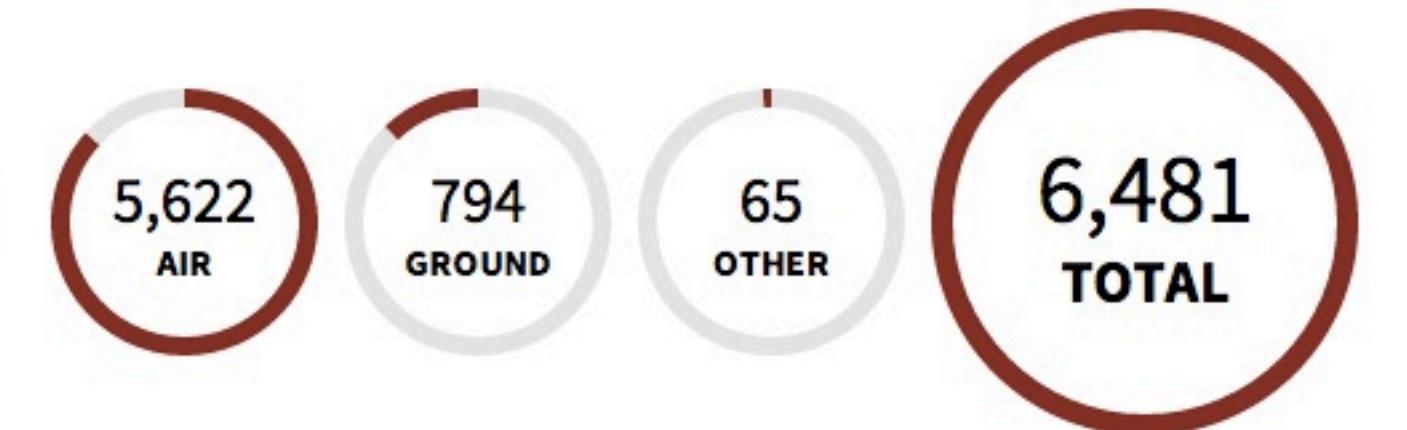


The Deaths of Afghans

Civilian Fatalities in Afghanistan, 2001–2012

When an Afghan civilian dies in war, the world rarely notices: the Afghan government, hospitals and morgues in the country, even the US-led international military force that has been a presence there since late 2001, all fail to keep comprehensive lists of civilian fatalities. This interactive database is an attempt to compile as complete a list as possible of civilian deaths that have occurred in Afghanistan as a result of war-related actions by the United States, its allies and Afghan government forces, from the invasion in October of 2001 through the end of 2012. It relies on an extensive survey of reliable media accounts for its raw data, and when no media account is available, on the casualty reports of NGOs, human rights organizations and ISAF (the International Security Assistance Force).

[Learn more about exploring this database.](#)



How the Recession Reshaped the Economy, in 255 Charts

By JEREMY ASHKENAS and ALICIA PARLAPIANO JUNE 5, 2014

Five years since the end of the Great Recession, the private sector has finally regained the nine million jobs it lost. But not all industries recovered equally. Each line  below shows how the number of jobs has changed for a particular industry over the past 10 years. Scroll down to see how the recession reshaped the nation's job market, industry by industry.



SCROLL



Elements & Interactions:

HTML vs. SVG

CSS vs. d3

drawing shapes

- browser performance
- compatibility

styling shapes

- performance
- centralized styling

layout

- floats vs. precise positions
- margin, padding

formatting text

- line wraps, indentation
- centering

user interaction

- hover styles
- boundary detection

.on()
mouseover, mousemove,
mouseenter, mouseleave,
click, dblclick, etc etc etc

	default		text		e-resize
	help		vertical-text		ne-resize
	pointer		all-scroll		nw-resize
	move		no-drop		n-resize
	crosshair		not-allowed		se-resize
	wait		col-resize		sw-resize
	progress		row-resize		s-resize
					w-resize

	default		text		e-resize
	help		vertical-text		ne-resize
	pointer		all-scroll		nw-resize
	move		no-drop		n-resize
	crosshair		not-allowed		se-resize
	wait		col-resize		sw-resize
	progress		row-resize		s-resize
					w-resize

**hover state vs.
selection state**

exercise: Hover and Click Behaviors in CSS

css
:hover
.selected
spritesheet

animatable

One property, two values, endless possibilities

Animate on hover

Animate all

1

background-color

2

background-position

3

background-position

4

background-size

5

border-radius

6

border-radius

7

border-width

8

border-width

9

border-width

10

box-shadow

11

box-shadow

12

box-shadow

13

color

14

font-size

15

height

16

letter-spacing

17

line-height

18

opacity

19

outline-width

20

outline-offset

21

outline-color

project time!

Animation in Visualization

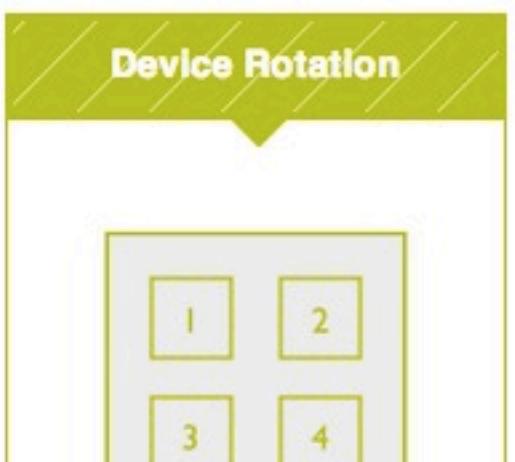
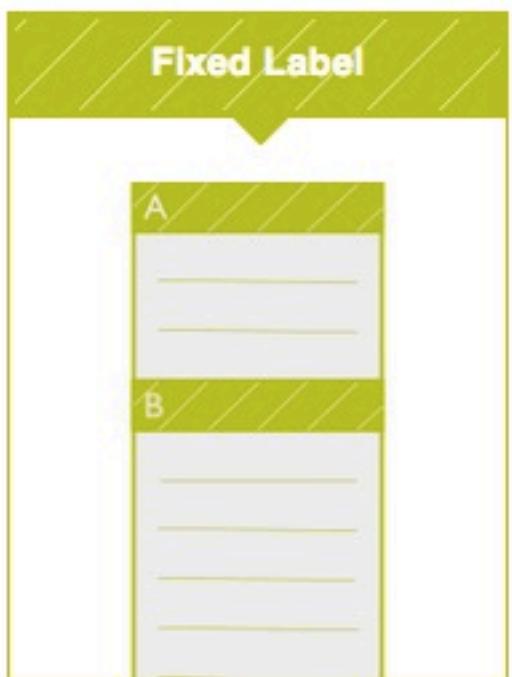
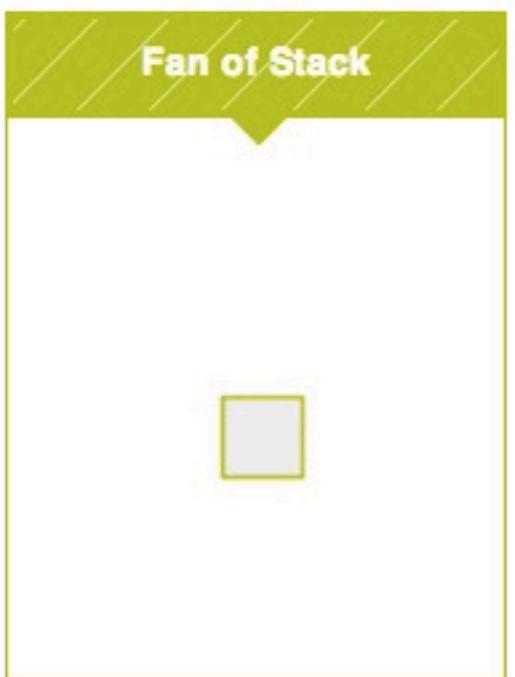
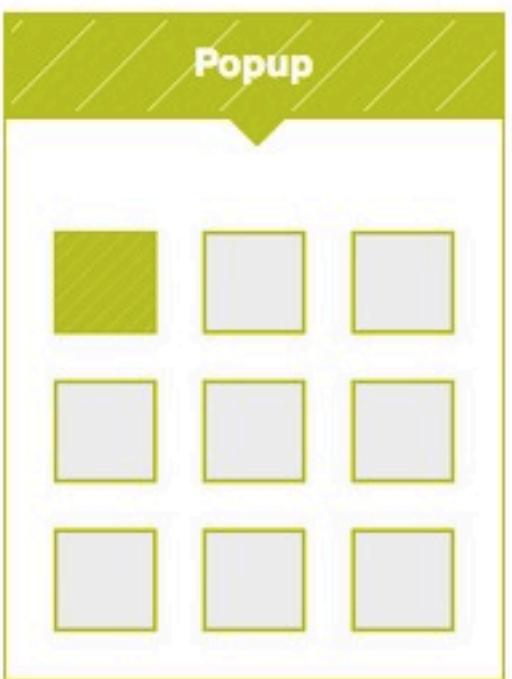
the ways we respond
to animation

fast vs. slow

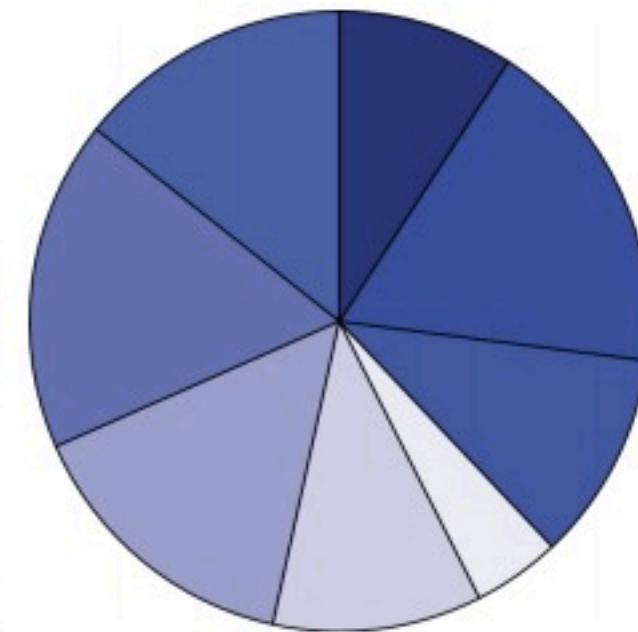
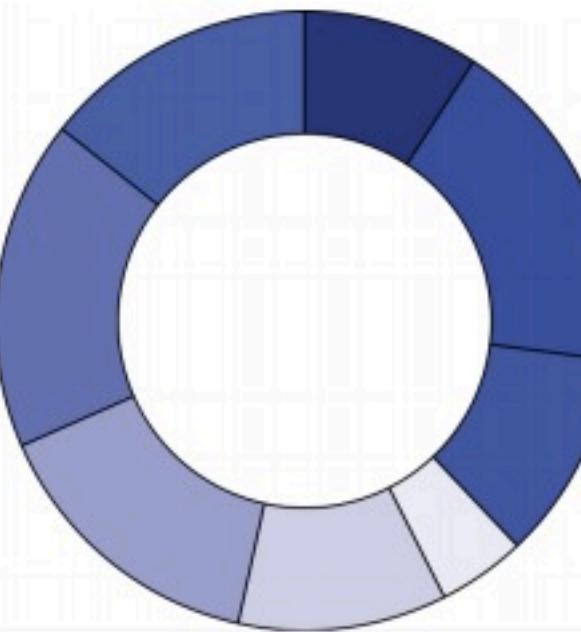
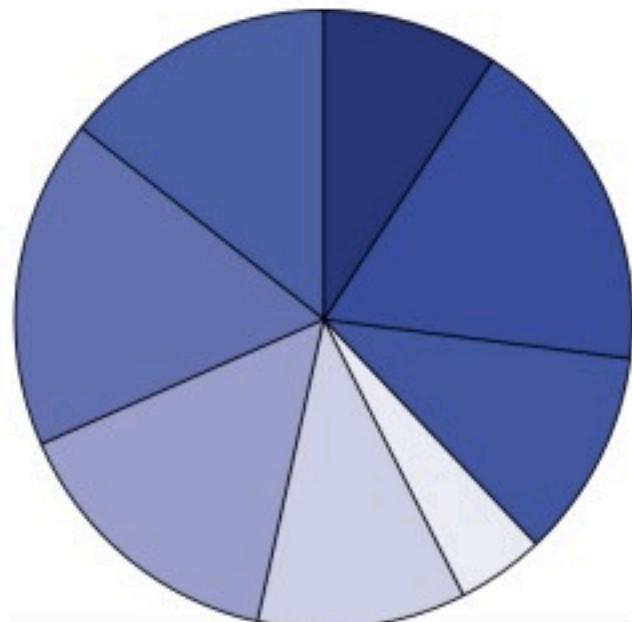
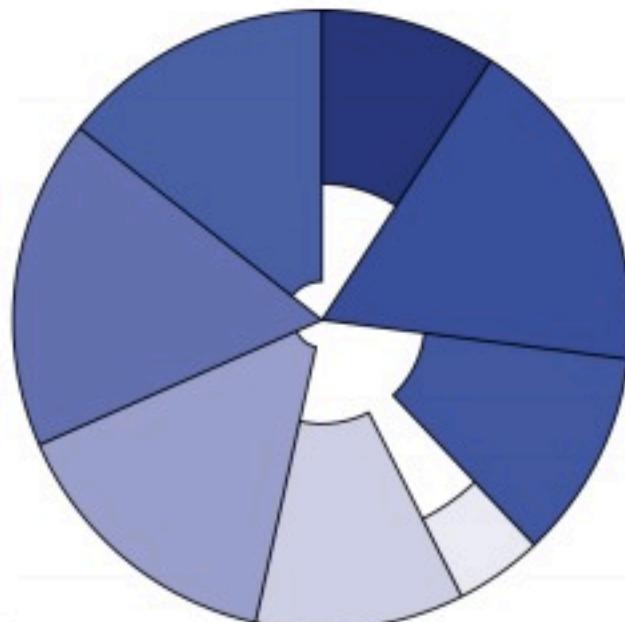
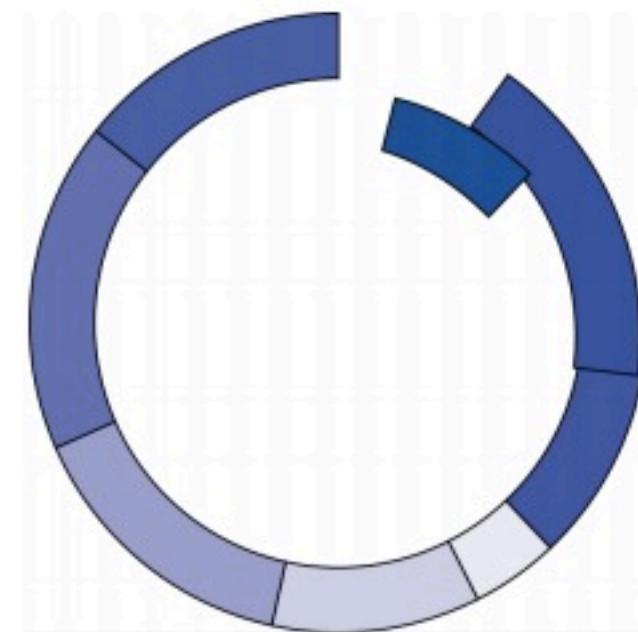
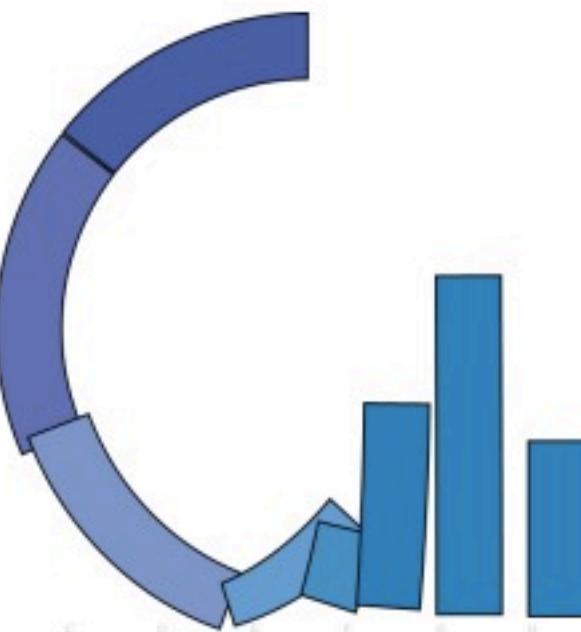
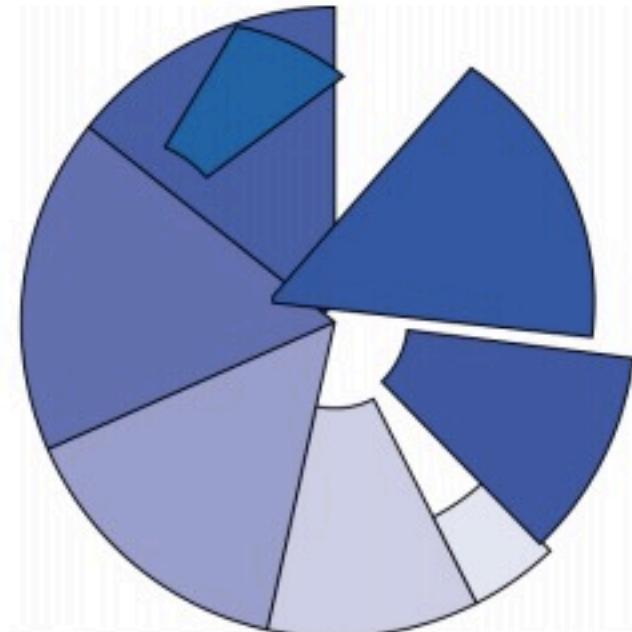
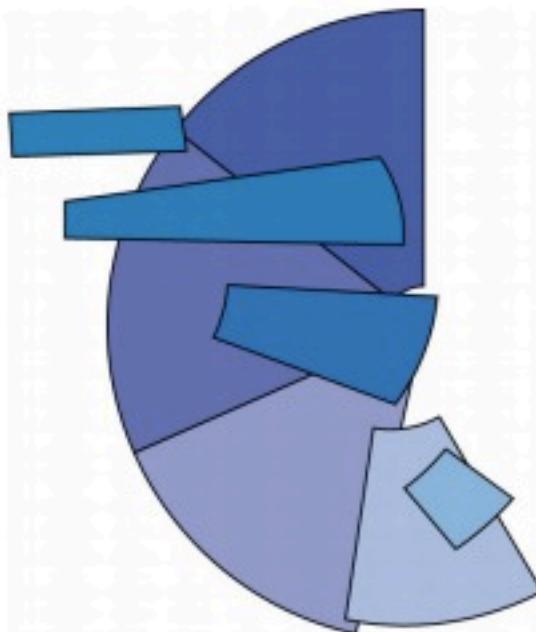
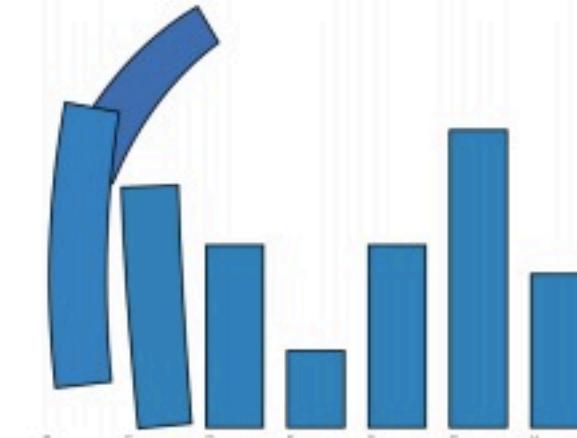
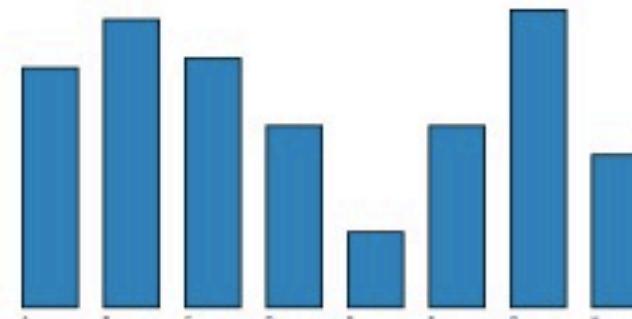
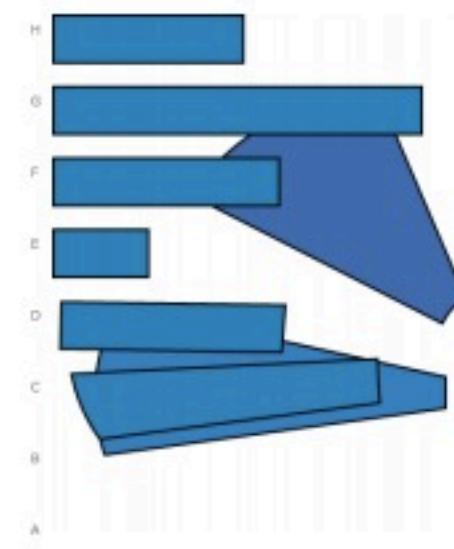
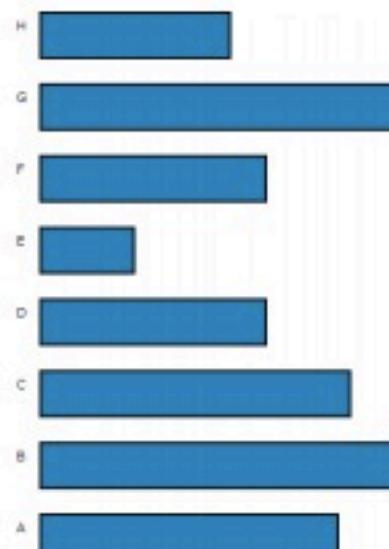
growing vs. shrinking

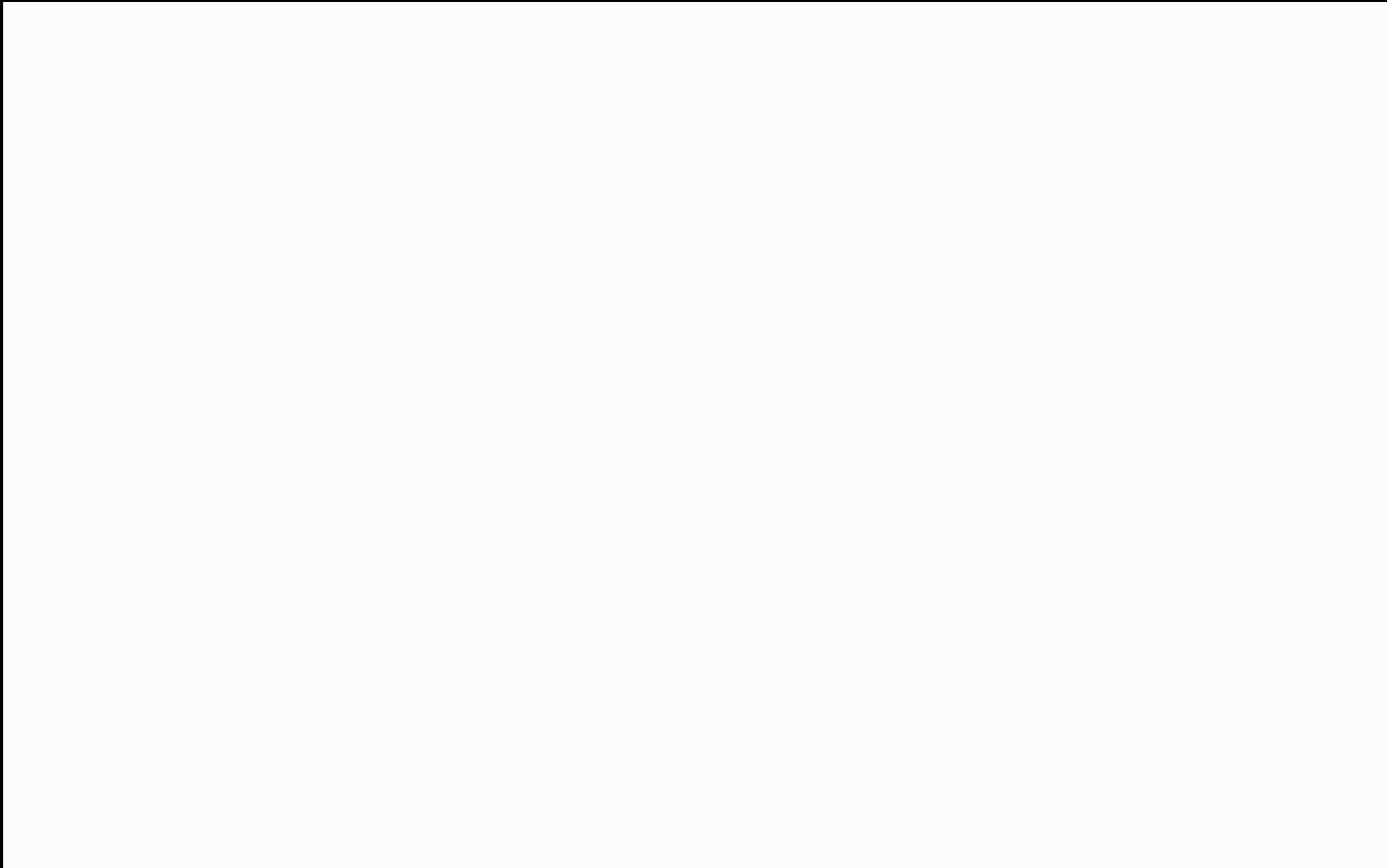
straight lines vs. curves

fade in / fade out



**using animation to visually
track changes on the page**

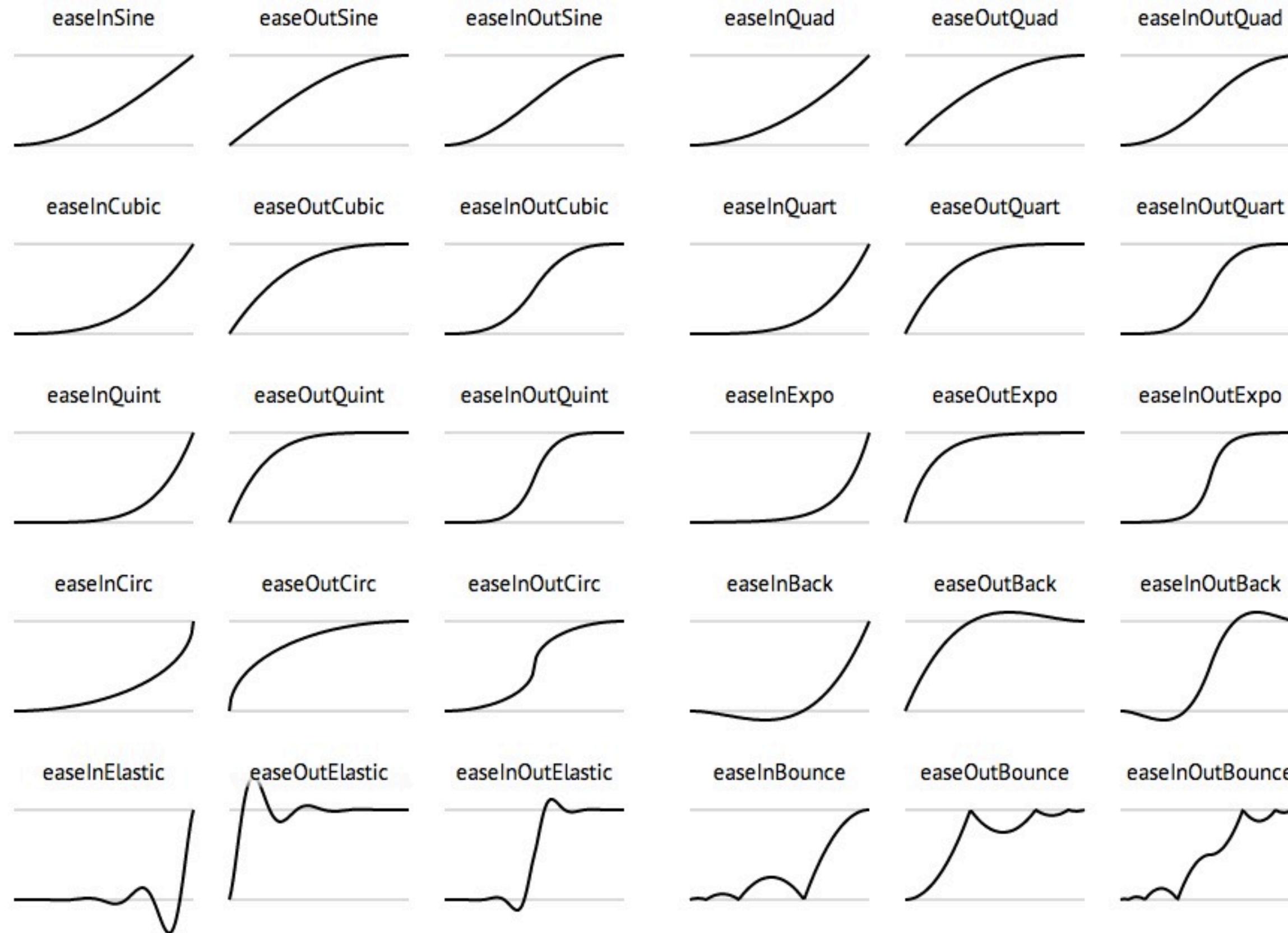




.transition()

interpolate:
position, shape, size,
color, opacity

easing functions





linear



poly



quad



cubic



sin



exp



circle



elastic



bounce



.ease()

.ease("cubic")

.ease("cubic-in")

.duration()

.delay()

“knob twiddling”

`.each(“end”, function)`
method chaining

exercise:

Explore d3.js Transitions

- 1) animate different attributes
- 2) explore easing functions
- 3) method-chain an animation
- 4) bonus: motion along a curve

project time!