

STANDARDS AND BEST PRACTICES

**Brent Drake
Zach Yater**



Purdue Standards

Data Digest

Management Dashboards

Standardization Committee

Visualization Best Practices

Visual Perception

Use of Color

Comparison & Orientation

Purdue Standards

Development Standards

Who are the stakeholders and audience?

What are the primary questions?

What is the dataset? (live, monthly extract, daily extract, etc.)

What will the contact email address be for the dashboard?

Visual Guidelines

Hover for Help

Explanation of dataset and dashboard in a tooltip in the upper left

Header

Contains University logo on the left and dashboard title on the right

Color Palette

Follow Marketing and Media guidelines

Numerical Values

Embedded in Visualisation

Tooltips

Used to explain data points and provide context on hover and have command buttons disabled

Filters

Filters on the left, footnote with details of what is filtered

Background

White or light grey



Standards Documentation & **Committee**

[Login](#)

The Data Digest provides interactive and visual information on various data items. These highly interactive dashboards allow users to drill down and filter to allow detailed exploration. Thank you to all of the individuals and offices from all of the campuses who provided information for the Digest. We hope you spend some time browsing and enjoying the site. We invite your comments and welcome suggestions on how we can continue to improve the tool.

[View Updates](#)[All Dashboards](#)[Student Enrollment](#)[Graduation/Retention & Time to Degree](#)[Instructional Activity](#)[Faculty and Staff](#)[Finance](#)[Research Awards/Expenditures](#)[Space Management](#)[Big Ten Peer University Comparisons](#)[Student Migration](#)

Welcome Zachary T Yater ([Logout](#))

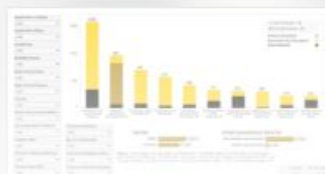
Management Dashboards

The new Management Information Dashboards will provide a single source of official information for data driven decision making, answering many of the common questions that leaders have in managing their units. These interactive dashboards will allow you to examine the big picture before digging deeper into the data for detailed exploration.

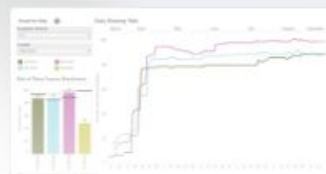
This work is a collaborative effort between offices that produce official reports to ensure a common look and feel across dashboards, and a consistent set of results. We hope the dashboards provide you with a valuable source of information, and we welcome your comments and suggestions so that we can continue to improve. Below each dashboard is an email address that should be used for feedback to the maintainer of that particular dashboard.



**Undergraduate
Admissions**



**Destinations for
Undergraduate
Applicants**



Course Enrollment

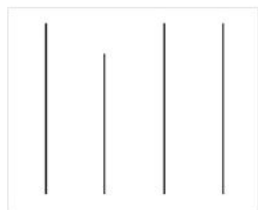


Financial Dashboard

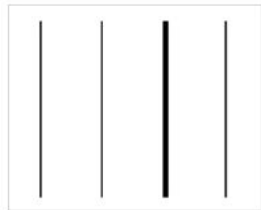
Visualization Best Practices

Preattentive attributes of visual perception

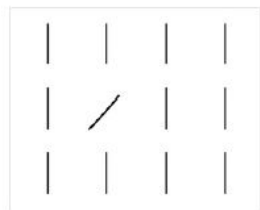
Form



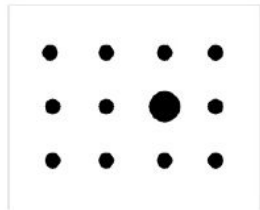
Length



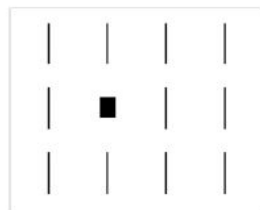
Width



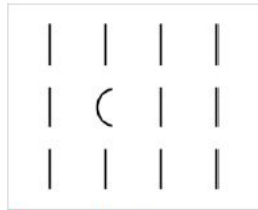
Orientation



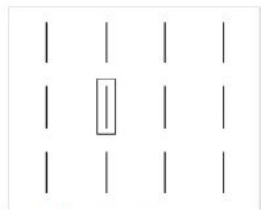
Size



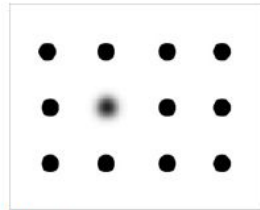
Shape



Curvature

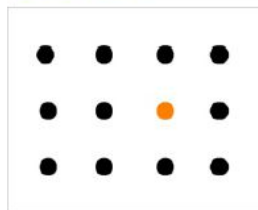


Enclosure

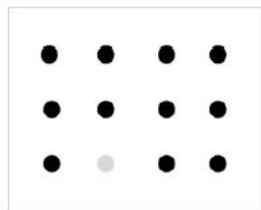


Blur

Color



Hue

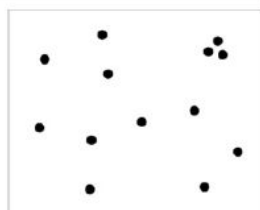


Intensity

Position



2-D position



Spatial Grouping

Motion



Direction of Motion

The quick brown fox jumps
over the lazy dog

The quick brown **fox** jumps
over the lazy dog

The quick brown fox jumps
over the lazy dog

The quick brown **fox** jumps
over the lazy dog

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Color Choice

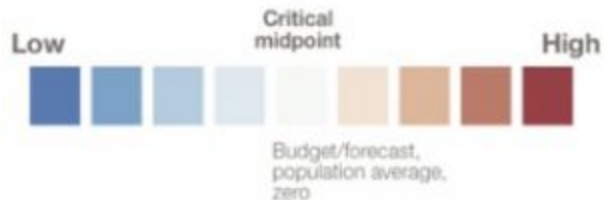
Sequential

Colors can be ordered from low to high



Diverging

Two sequential schemes extending out from a critical midpoint value



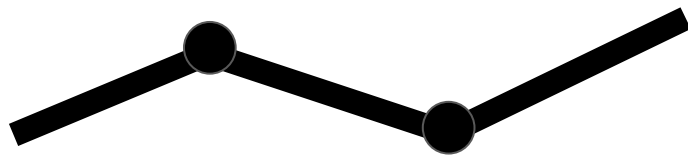
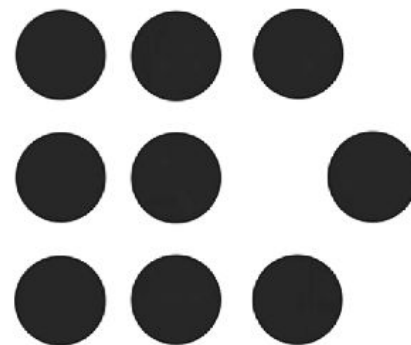
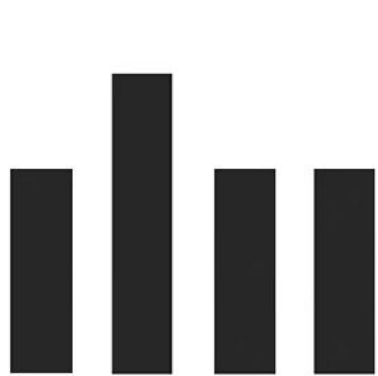
Categorical

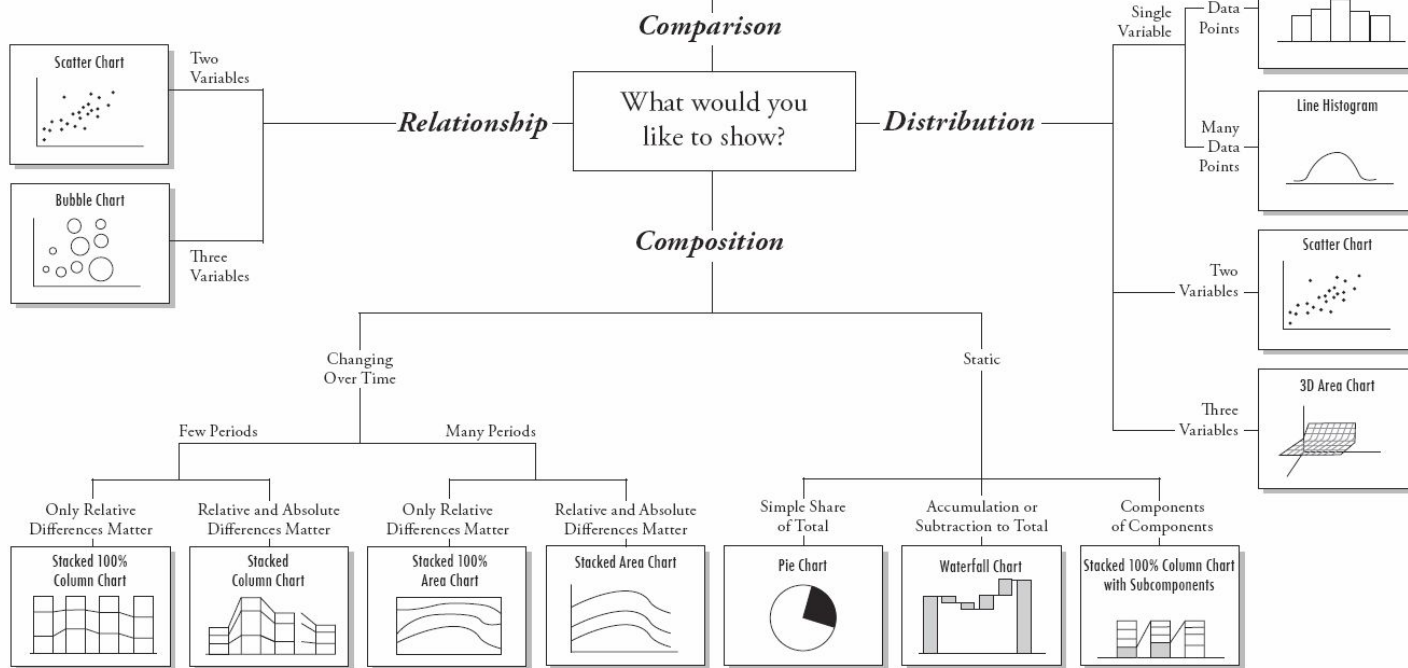
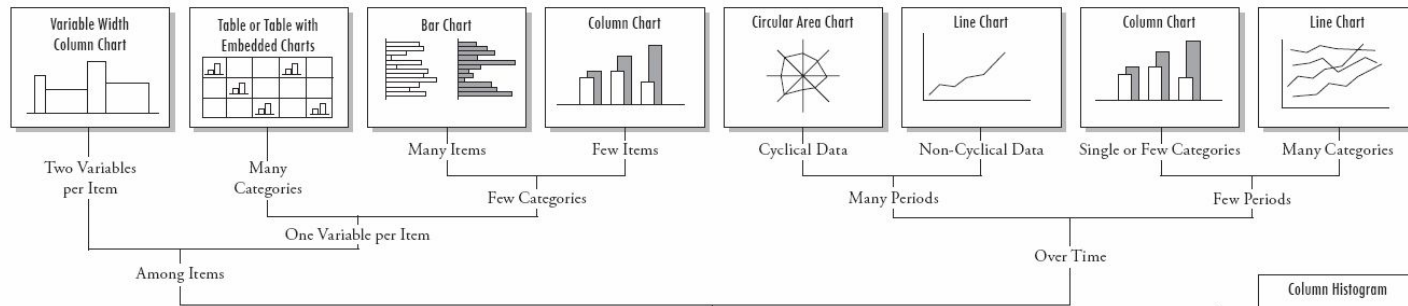
Lots of contrast between each adjacent color





Comparisons





The killers

Deaths per day, Ebola-affected countries*

Latest



*Guinea, Liberia, Nigeria and Sierra Leone

†Dec 2013-Aug 11th 2014 ‡West Africa

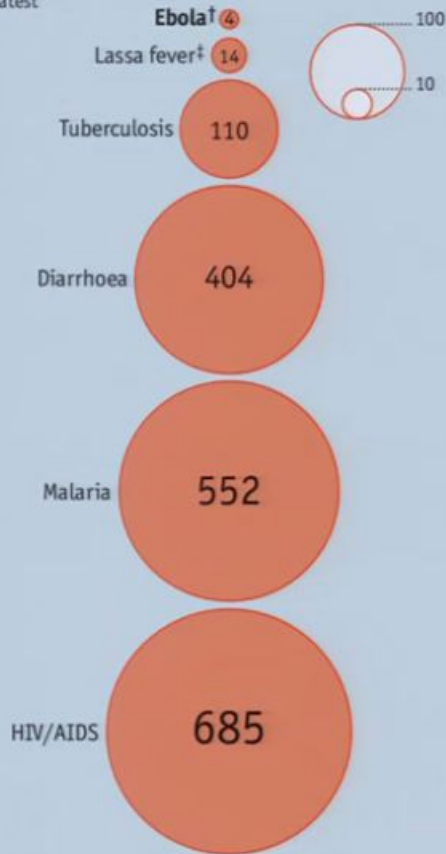
Sources: WHO; US Centres for Disease Control and Prevention; *The Economist*

Measuring Area Is Hard

The killers

Deaths per day, Ebola-affected countries*

Latest



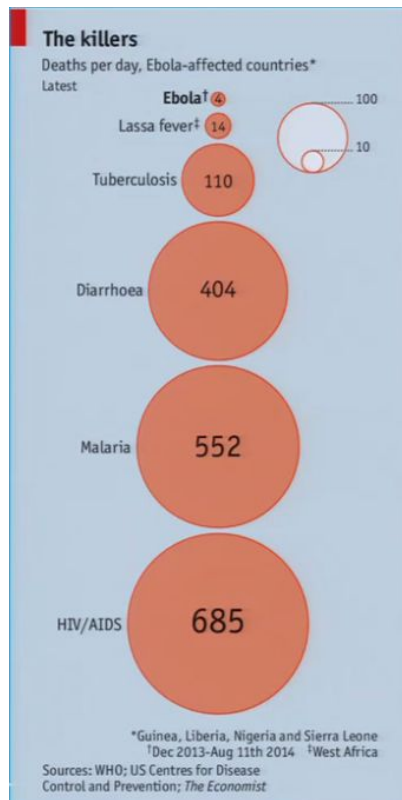
*Guinea, Liberia, Nigeria and Sierra Leone

†Dec 2013-Aug 11th 2014 ‡West Africa

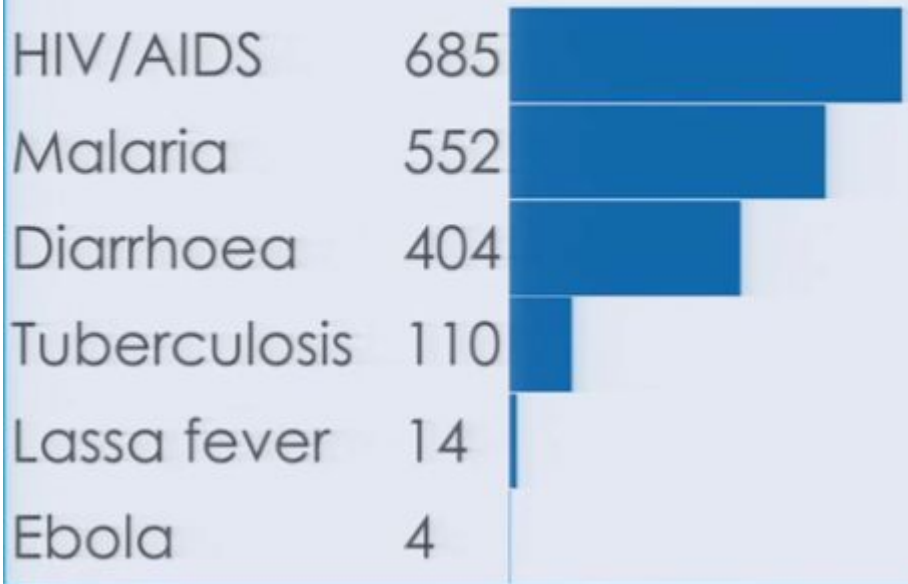
Sources: WHO; US Centres for Disease Control and Prevention; *The Economist*

Measuring Area Is Hard

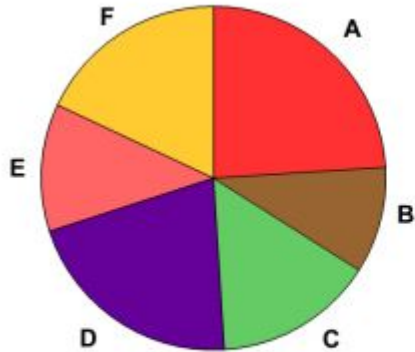
Measuring Length is Easier



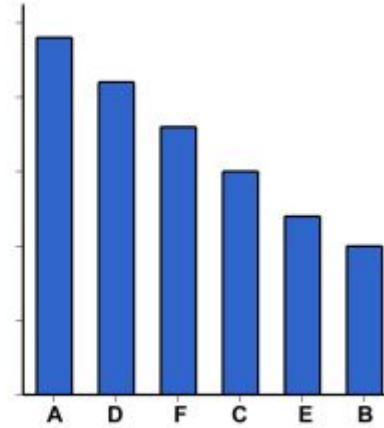
Deaths per day, Ebola-affected countries



Measuring Length Is Easier



Simulated data presented in a pie chart



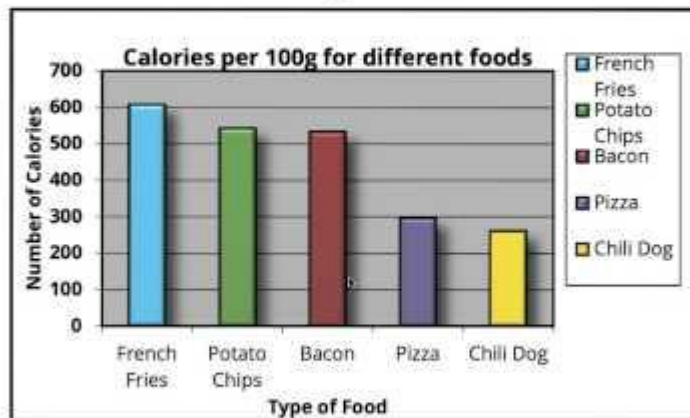
Simulated data presented in a bar graph

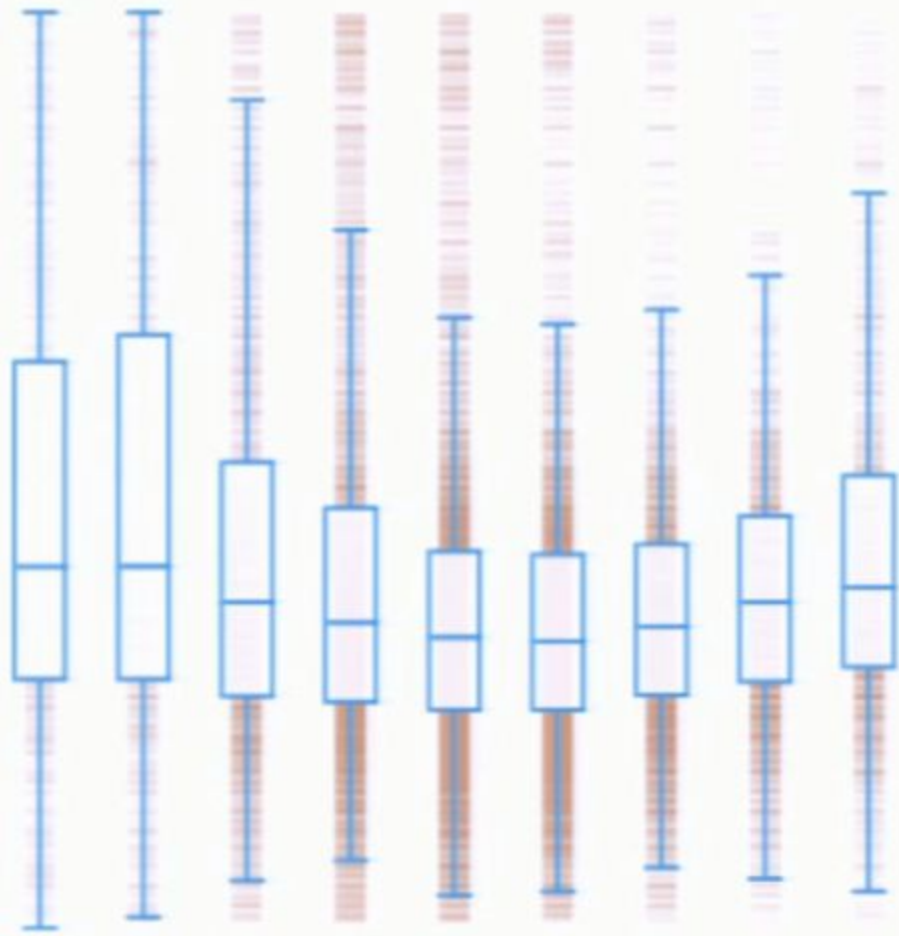
Good Use of a Pie Chart

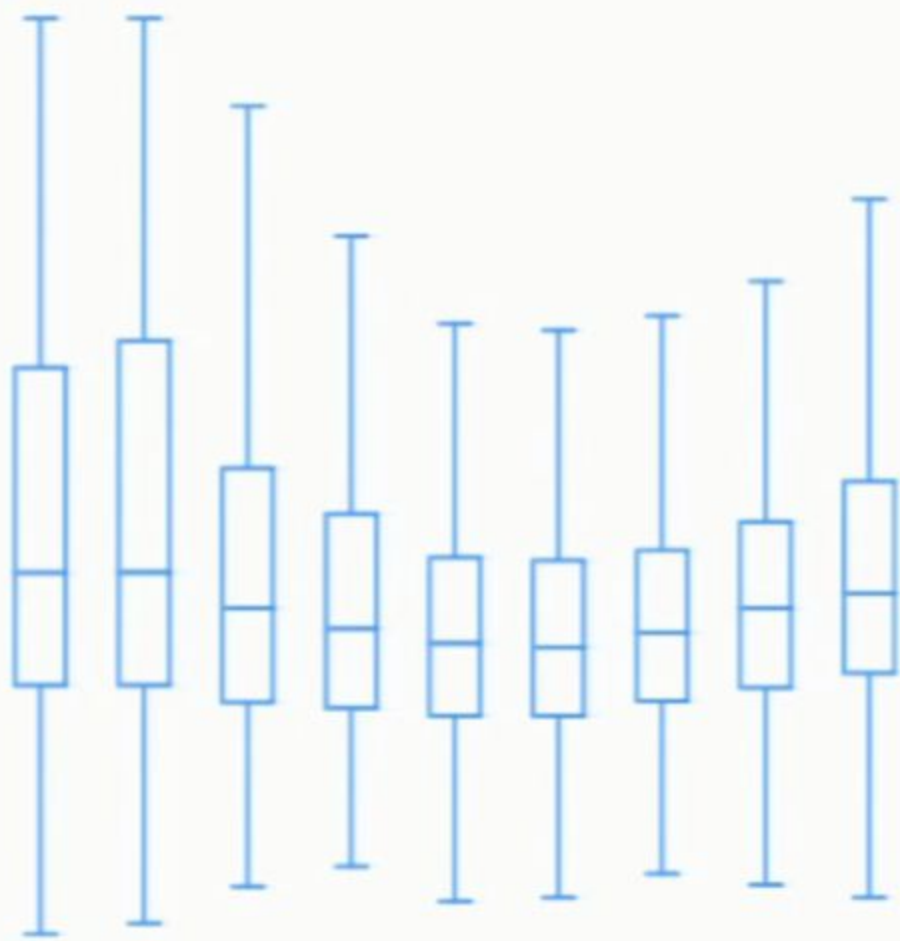


LESS IS MORE

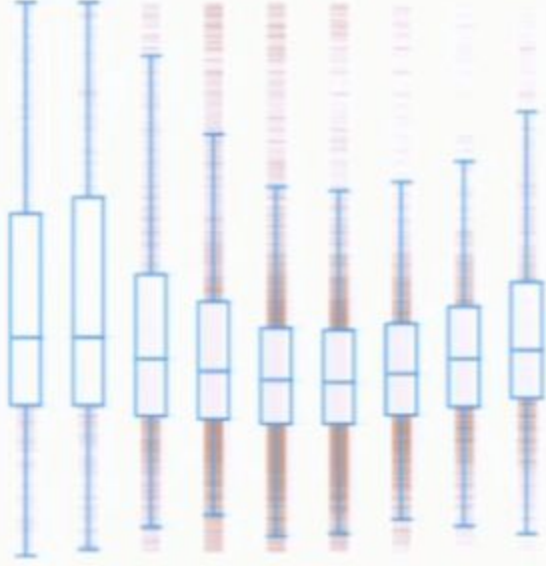
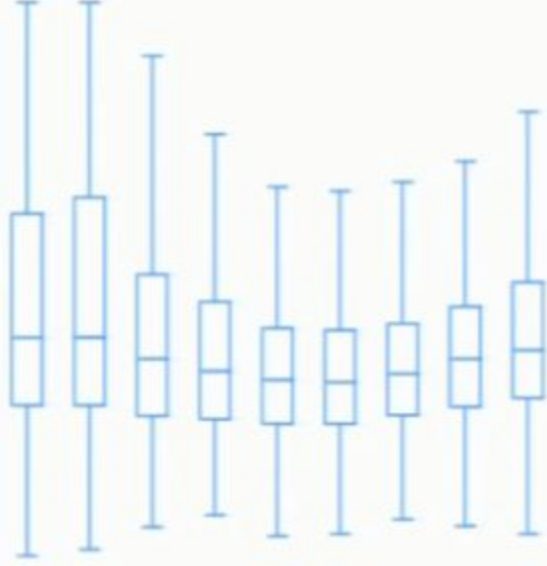
Remove backgrounds









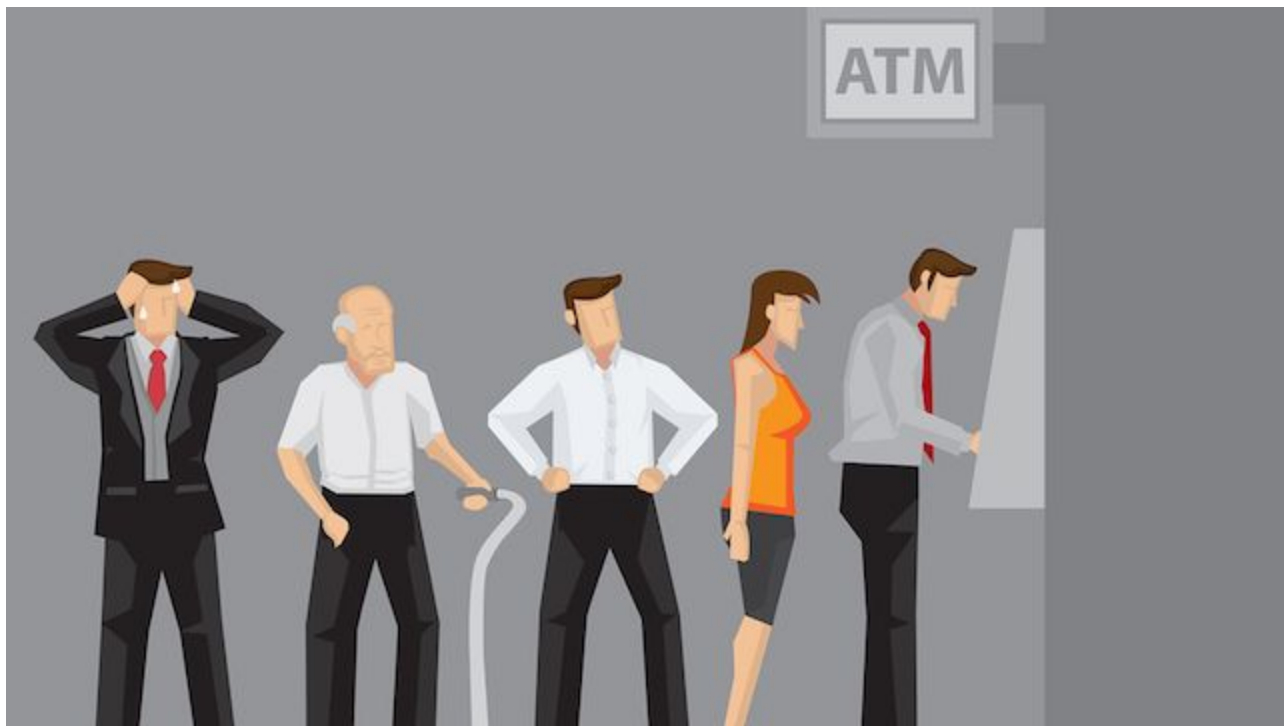


ATM

Connecticut Bank & Trust



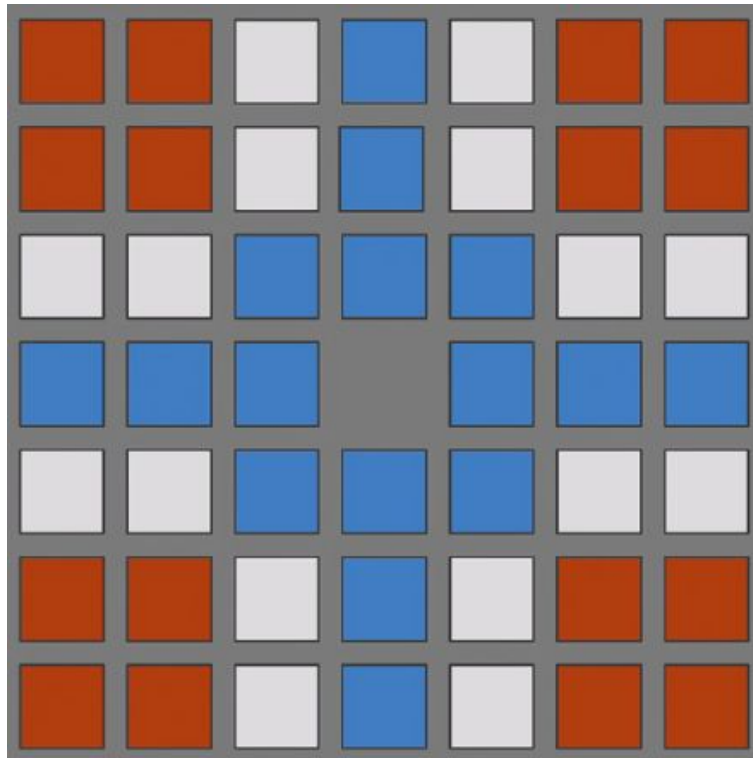
Barney





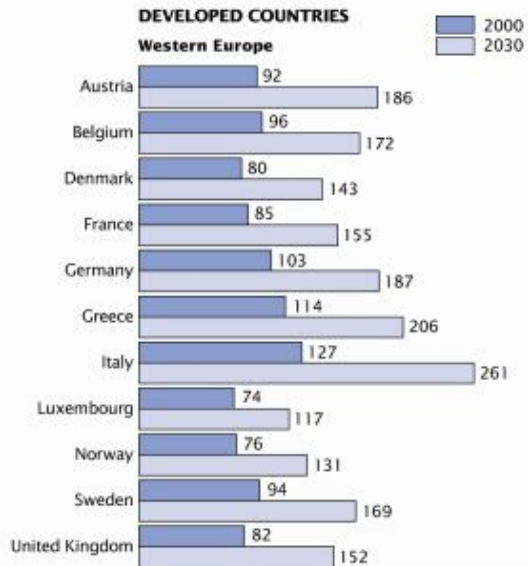
Barney

Orientation Matters



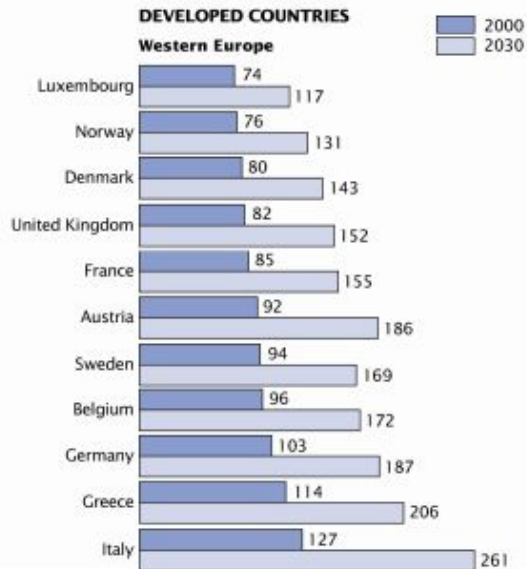
So Does Order

Figure 2-7.
Aging Index: 2000 and 2030
(People aged 65 and over per 100 people aged 0-14)



Census Bureau, *An Aging World: 2001*, November 2001, p. 14

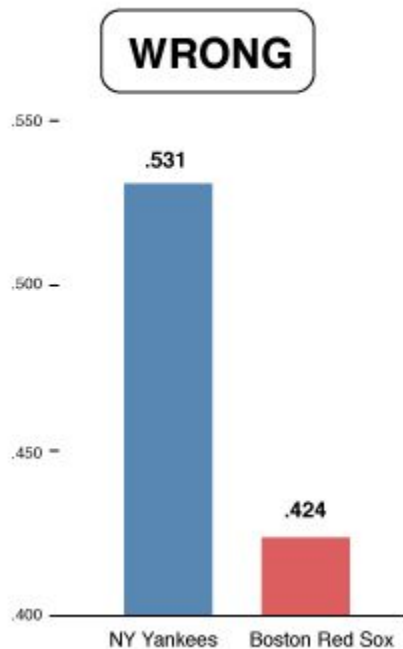
Figure 2-7.
Aging Index: 2000 and 2030
(People aged 65 and over per 100 people aged 0-14)



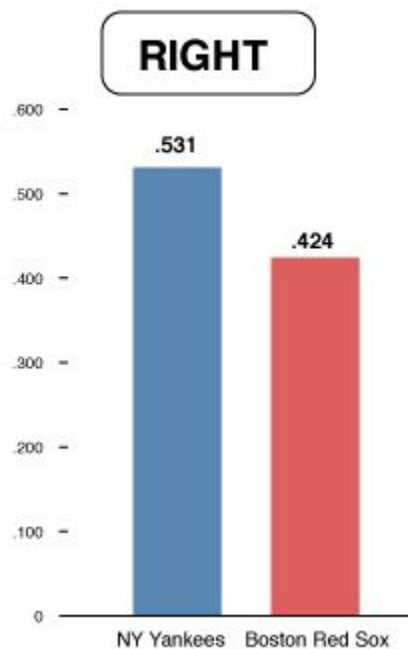
The same figure with a different order

HOW CAN WE DECEIVE PEOPLE...

Percentage of victories

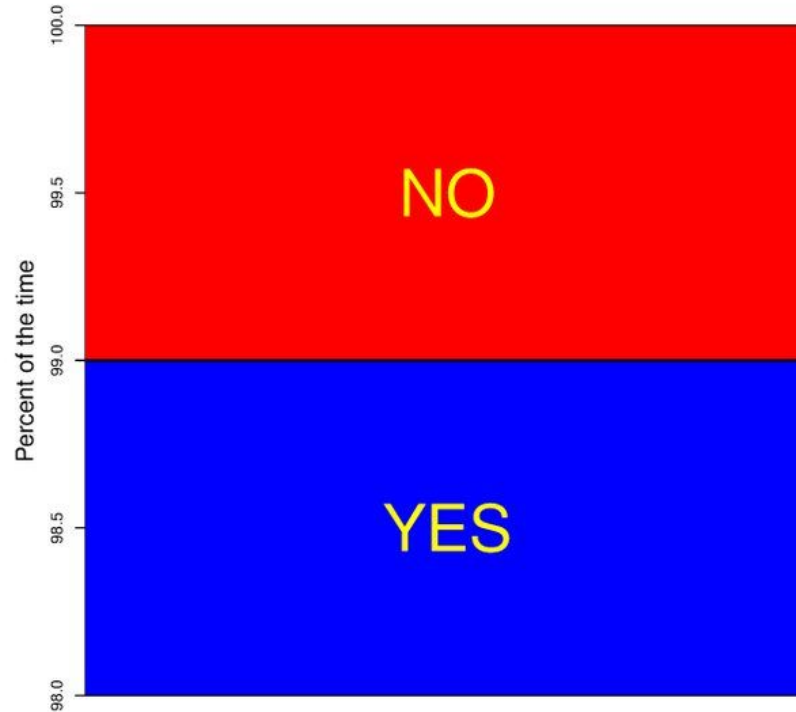


Percentage of victories



HOW CAN WE DECEIVE PEOPLE...

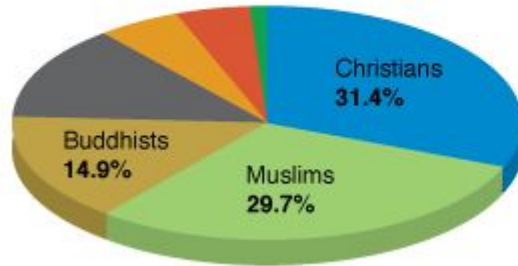
Is truncating the Y-axis misleading?



How to Make a Pie Chart Worse

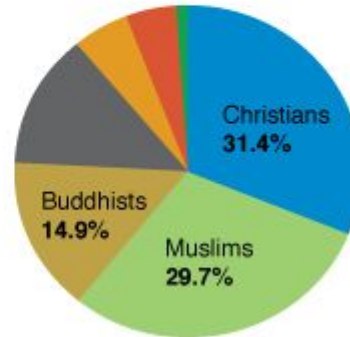
Religions in the world

WRONG



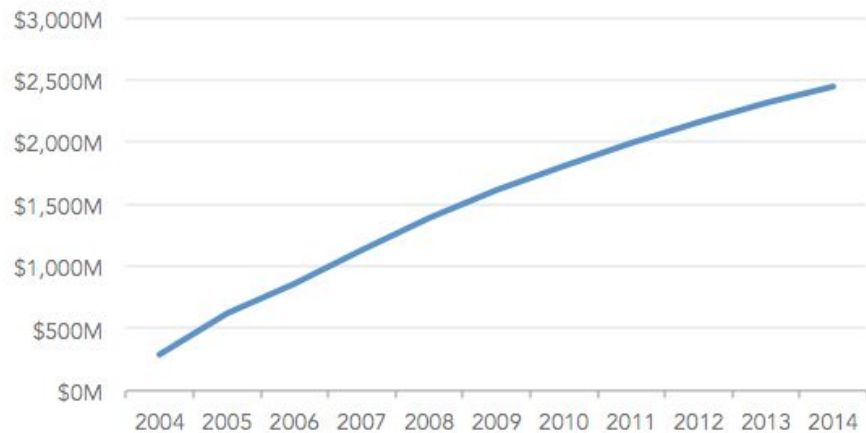
Religions in the world

RIGHT

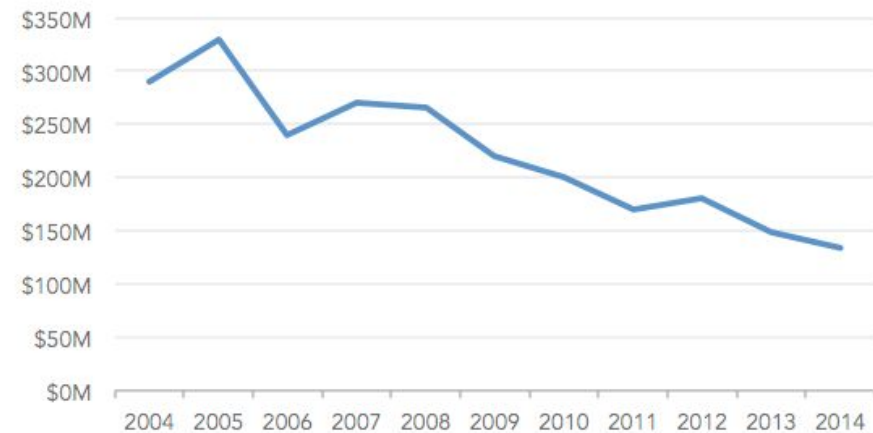


Should You Use Cumulative?

Cumulative Annual Revenue



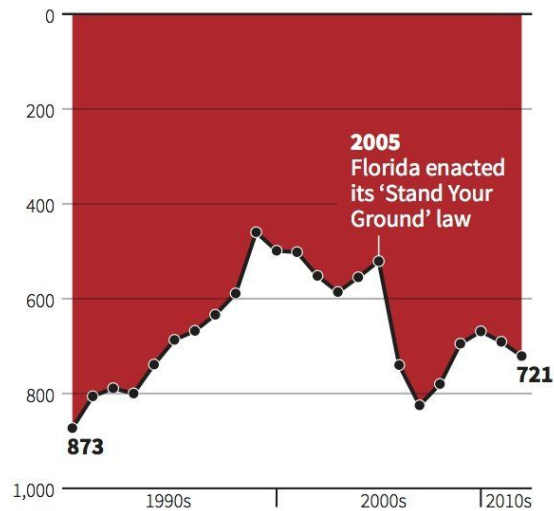
Annual Revenue



Flipping the Axis

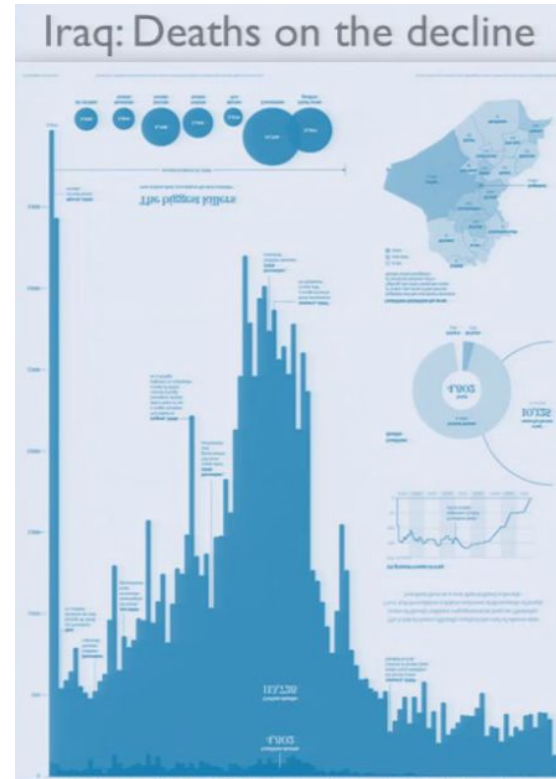
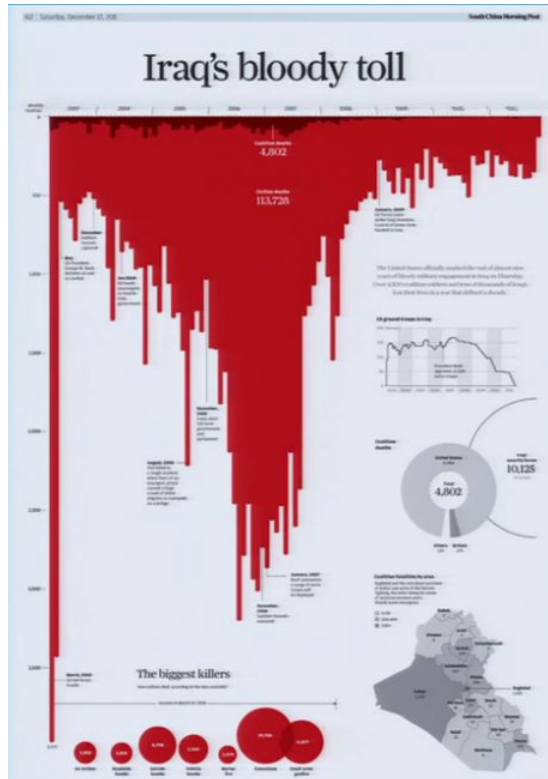
Gun deaths in Florida

Number of murders committed using firearms

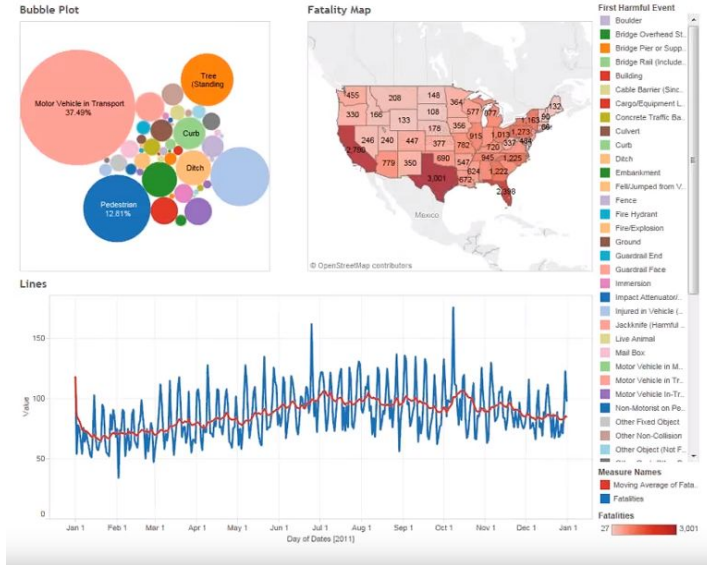


Source: Florida Department of Law Enforcement

Control the Message Through Design



Providing Direction



SOBERING effects of DRUNK DRIVING

how drunk driving impacted the victims in 2011

Help

29,426
accidents

32,008
fatalities

9,178
dd accidents

9,861
dd fatalities

31.2%
% dd accidents

33.5%
% dd fatalities

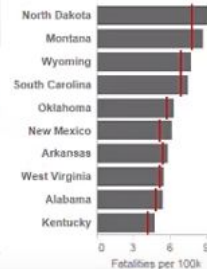
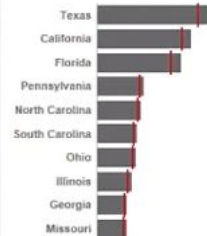
WHO IS AT RISK?

drunks are driving EVERYWHERE



most DANGEROUS states

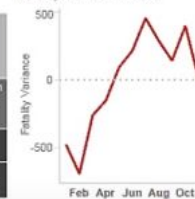
■ = Fatality | = Accidents



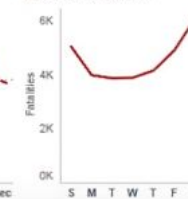
late nights can be VIOLENT

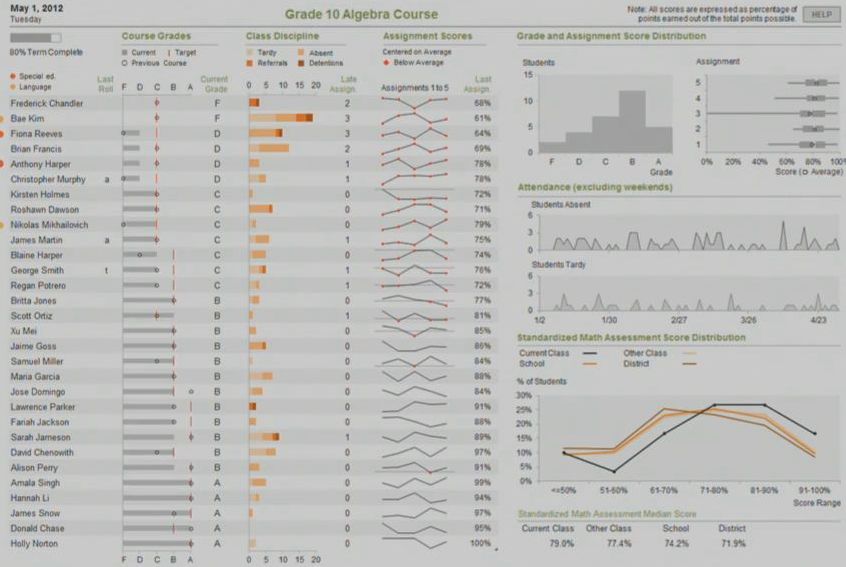


holidays can be TRAGIC



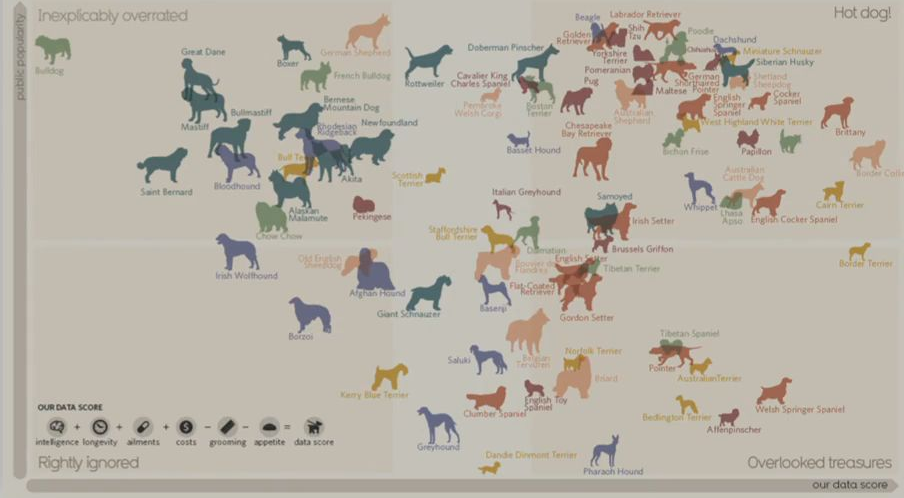
weekends are KILLER





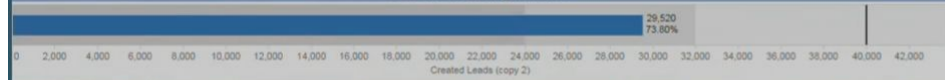
Best in Show

The ultimate data-dog



UK Key Metrics for 2016

How are we doing in 2016?



Leads left to go	AVG Weekly Leads	Weeks Left	Opps Created	Opps Won
10,480	702.3	11	4,880	2,467
Primed this Year	AVG Leads x Weeks Left	Weeks we need to hit 40,000	Conversion (Opps Won/Primed Leads)	
13,163	36,522	14.56	6.93%	

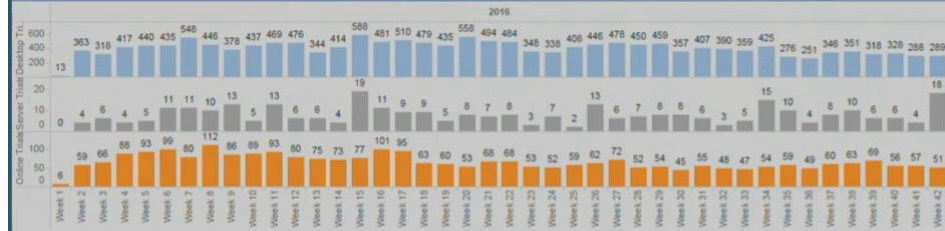
Weekly Progress



Primed Leads



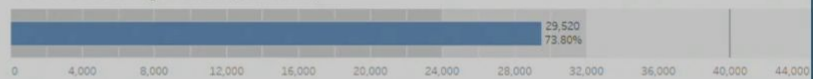
Trials



Note: this is fake data

UK Key Metrics for 2016

How are we doing in 2016? (Leads created)



Leads left to go	AVG Weekly Leads	Weeks Left	Opps Created	Opps Won
10,480	702.3	11	4,880	2,467
Primed this Year	AVG Leads x Weeks Left	Weeks we need to hit 100k	Conversion (Opps Won/Primed Leads)	
13,163	36,522	14.56	6.93%	

Weekly Progress

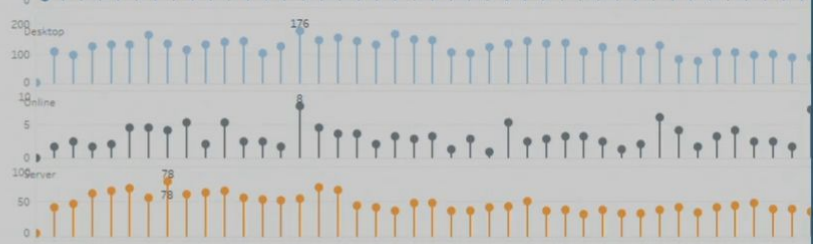
(Created Leads)



Primed Leads



Trials



Note: this is fake data

**What are your standards?
How are you using design
principles? What is your
deployment process? Is your
data available to all people
on all devices?**

TITLE

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec condimentum ex lectus, quis pellentesque nunc feugiat in. Cras condimentum egestas tincidunt. Interdum et malesuada fames ac ante ipsum primis in faucibus. Quisque pellentesque egestas vehicula. Nulla id urna at urna congue hendrerit ac ut dolor. Pellentesque vulputate diam mi, sed condimentum eros auctor vestibulum. In elementum eros id venenatis convallis.

TITLE

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec condimentum ex lectus, quis pellentesque nunc feugiat in. Cras condimentum egestas tincidunt. Interdum et malesuada fames ac ante ipsum primis in faucibus. Quisque pellentesque egestas vehicula. Nulla id urna at urna congue hendrerit ac ut dolor. Pellentesque vulputate diam mi, sed condimentum eros auctor vestibulum. In elementum eros id venenatis convallis.