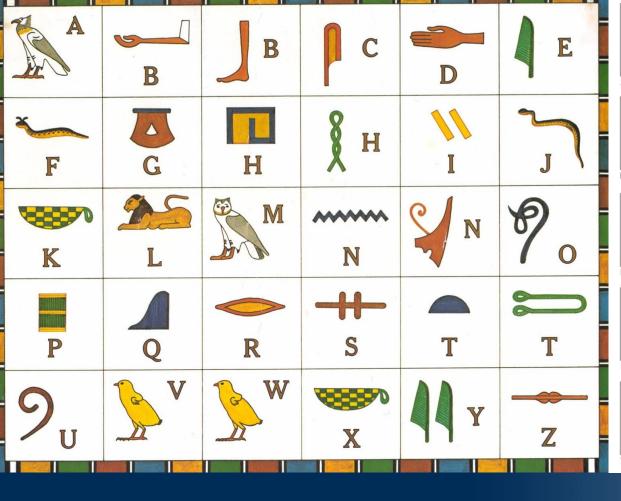
#### Don't tell me show me

Nikhil Deshpande































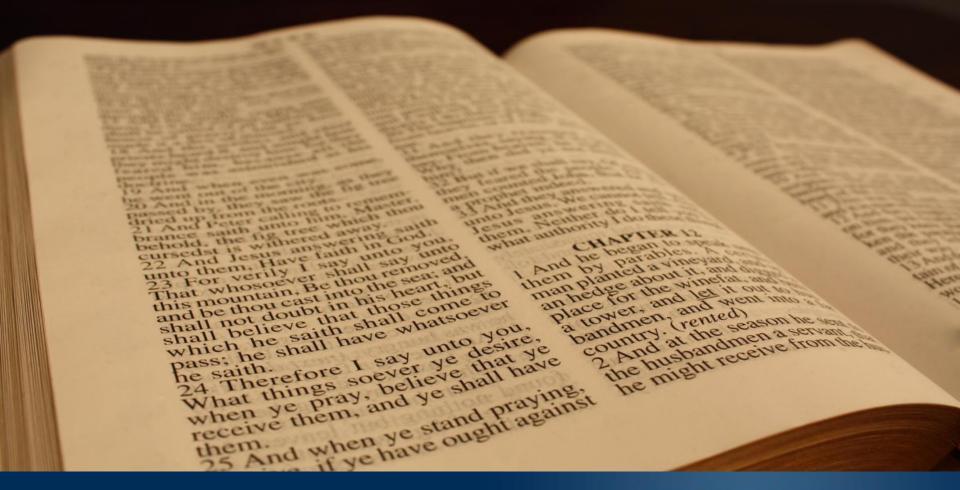






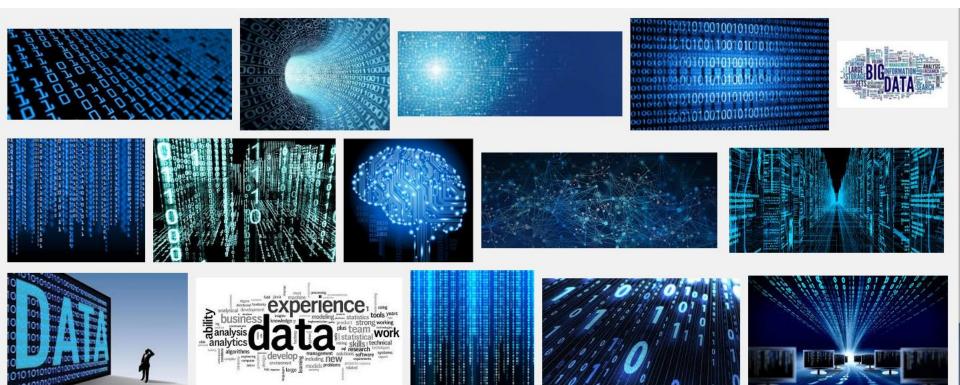


**GEORGIA**GOV

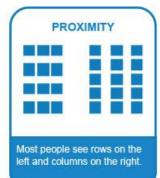


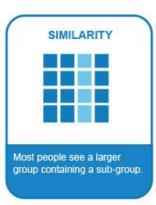


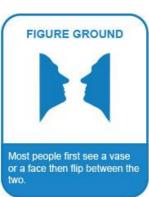
**GEORGIA**GOV

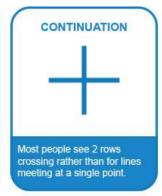


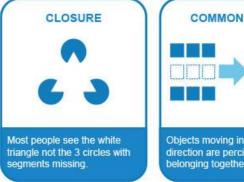
# How many 9s?

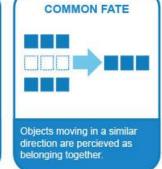








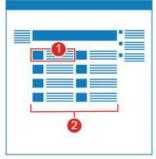








Elements that are closer together are perceived as being more related compared to those spaced further apart. In this example the spacing between the main text (1) and the supporting image (2) means they are perceived as different. However the close spacing of their individual component parts indicates relatedness



Web parts that look similar are perceived as being grouped together or related.

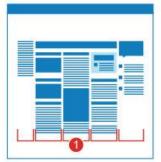
This image and text (1) are perceived together as a single

Also the similarity of all the (similar) items (in close proximity) means they are collectively perceived as being related into a



We automatically perceive objects as being in the foreground. (figure) or in the background (ground). Anything we perceive as foreground tends to be prominent and our main focus of attention.

The images in this banner appear in the foreground (figure) standing out from the solid coloured background (ground).



We tend to perceive contours as objects. In this way we perceive lines continue in an established direction (even when they don't).

In this example the 5 column layout (1) is easily perceived even though the actual vertical grid lines that define the layout are invisible. This is because the elements are correctly sized to snap to individual (invisible)



When we perceive a pattern the gaps (1) between the objects (negative or white space) are just as important as the objects themselves (positive). We tend to look for whole or complete objects by closing shapes to form complete objects, (even if the object isn't really there).

The negative and positive space in these icons (2) works together



be related and moving on an invisible path. Even if objects seem to appear (move) as a result of a deliberate action (like a tool-tip appearing as a mouse pointer hovers over an object).

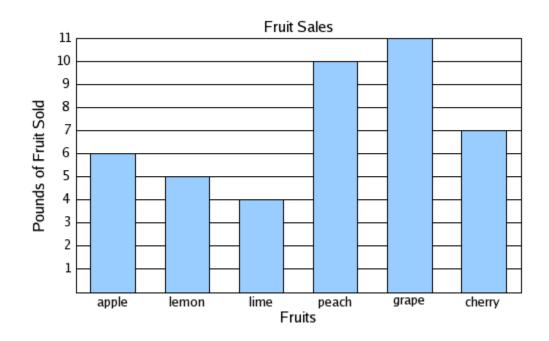
When objects move in the same

direction we perceive them to to

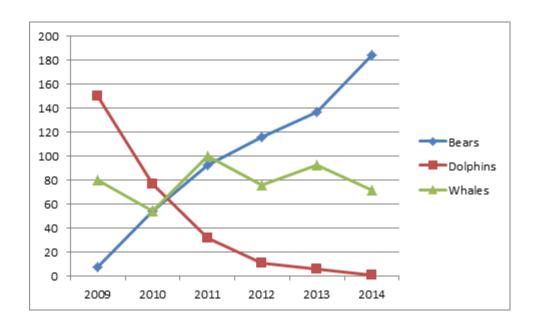
The tool-tip (1) appears (seems to move into view) as the object is hovered over, making the

## How to visualize data?

# **Bar Graphs**



#### **Line Charts**



#### **Timeline**

#### Timeline of World War I

1914 1915 1916 1917 1918 1919 O O O

Assassination of Archduke Franz Ferdinand of Austria.

Germany declares war on France, Belgium does not allow German arms through to the French border. First Zeppelin raid on Great Britain.

Italy declares war on Austria-Hungary.

Kosovo Offensive, a phase of the Central Powers invasion of Serbia. The Gallipoli Campaign ends in an Allied defeat and an Ottoman victory.

Battle of Dobrich, a phase of the conquest of Romania.

Allies capture Yanbu.

British raid the Ancre.

France: Paul Painlevé is replaced by Georges Clemenceau as Prime Minister.

Russia signs an armistice with Germany. Woodrow Wilson outlines his Fourteen Points.

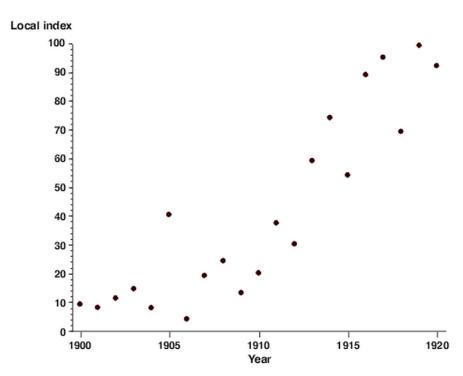
Operation Faustschlag, last offensive on Eastern Front.

Yugoslav independence proclaimed. Fakhri Pasha surrenders at Medina.

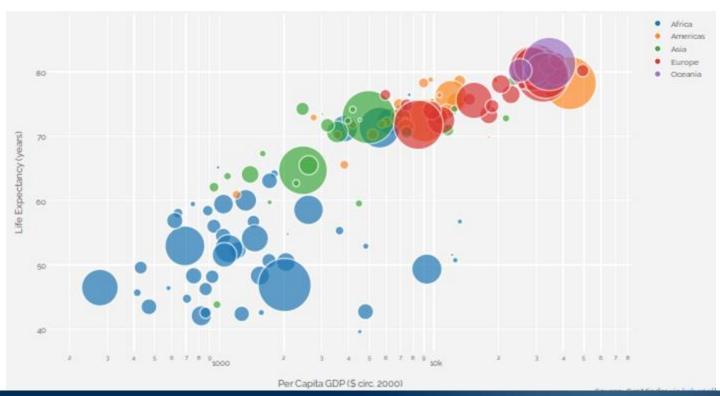
Treaty of Versailles between the Allies and Germany: the Peace Conference opens in Paris.

The UK ratifies the Treaty of Versailles.

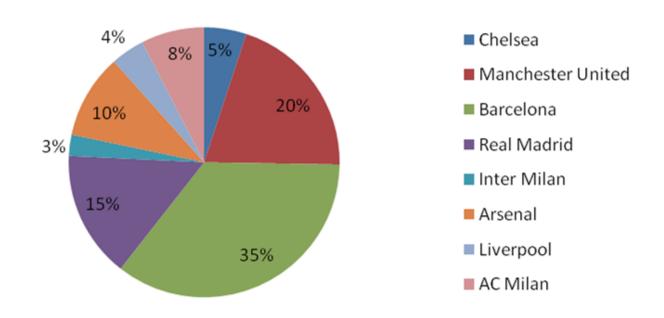
## Scatterplot



### **Bubble chart**



### Pie chart





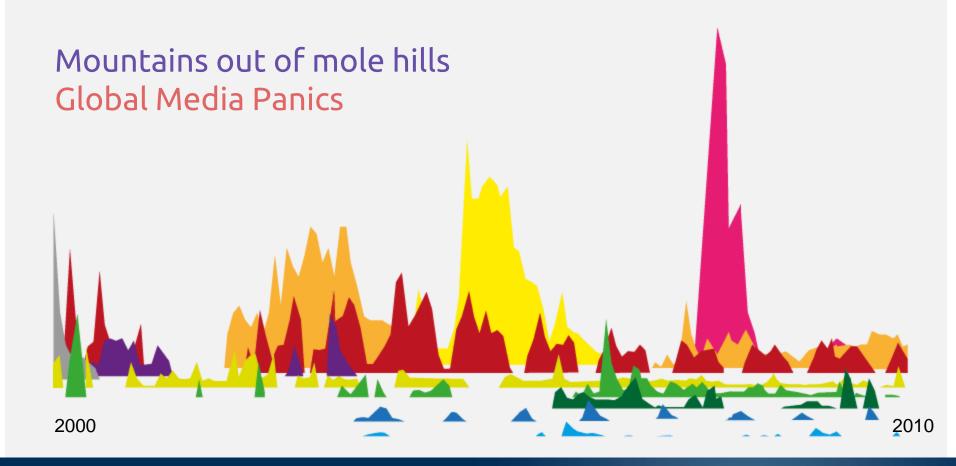
David McCandless & Lee Byron

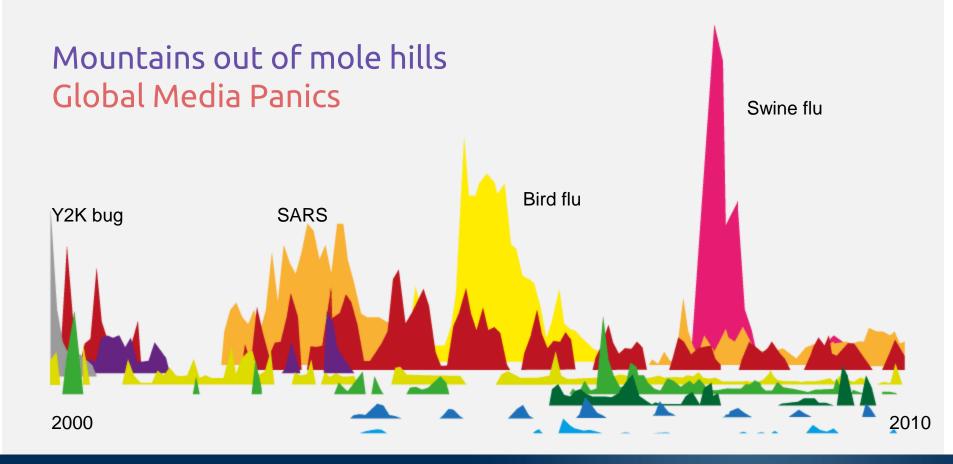
#### **GEORGIA**GOV

#### Peak breakup times per Facebook status updates

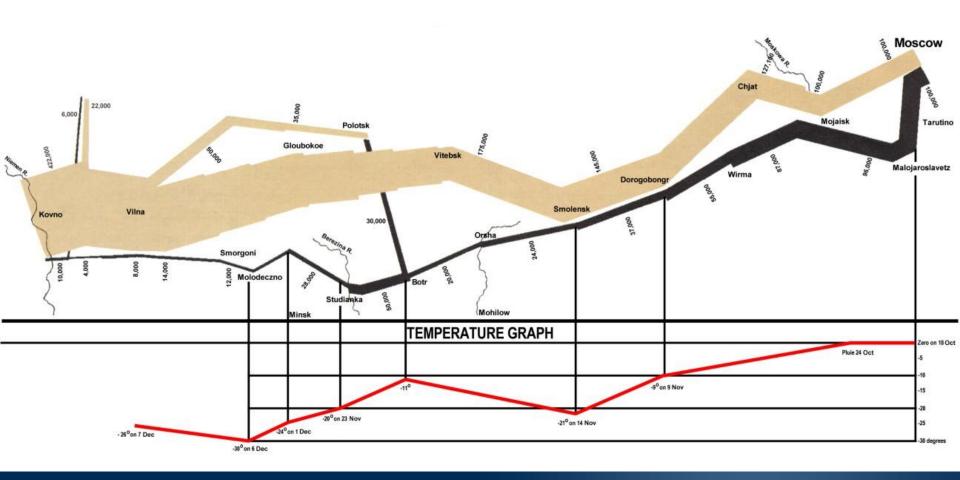


David McCandless & Lee Byron





# Complex data?

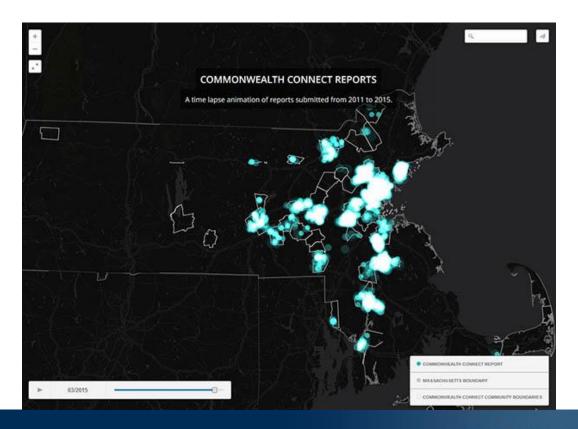


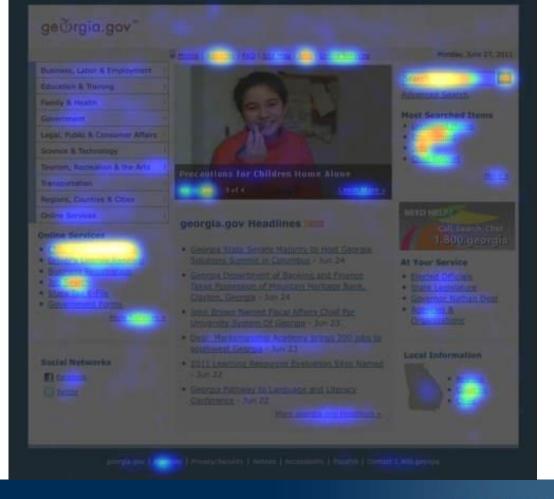
#### Government data?

# Coastal flooding NYC



## Commonwealth 311





# Technology

# **Technology**

# Information Audience Context

# Simple / Complex Support



**GEORGIA**GOV







#### Takeaways:

- Opportunities
- Open raw data from static files
- Advocate data visualization
- Focus on the information
- Find the right tools
- Make a difference

# Thank you!