Data Visualization

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Why visualization?

Start with: What problem are you solving?

Data Visualization vs. Infographics

- Algorithmically drawn
- Easy to regenerate
- Often aesthetically barren
- Relatively data rich

- Manually drawn
- Specific data
- Aesthetically rich
- Relatively data poor

Exploration/Explanation

We have a whole bunch of data and we're not sure what is in it.

We know what our data looks like, but we need to convey it, or tell a story to others.

Inspecting the Data

- Where is our data problematic / incorrect?

- What trends or patterns (often over time) can we identify?

- Can we identify relationships in our data?

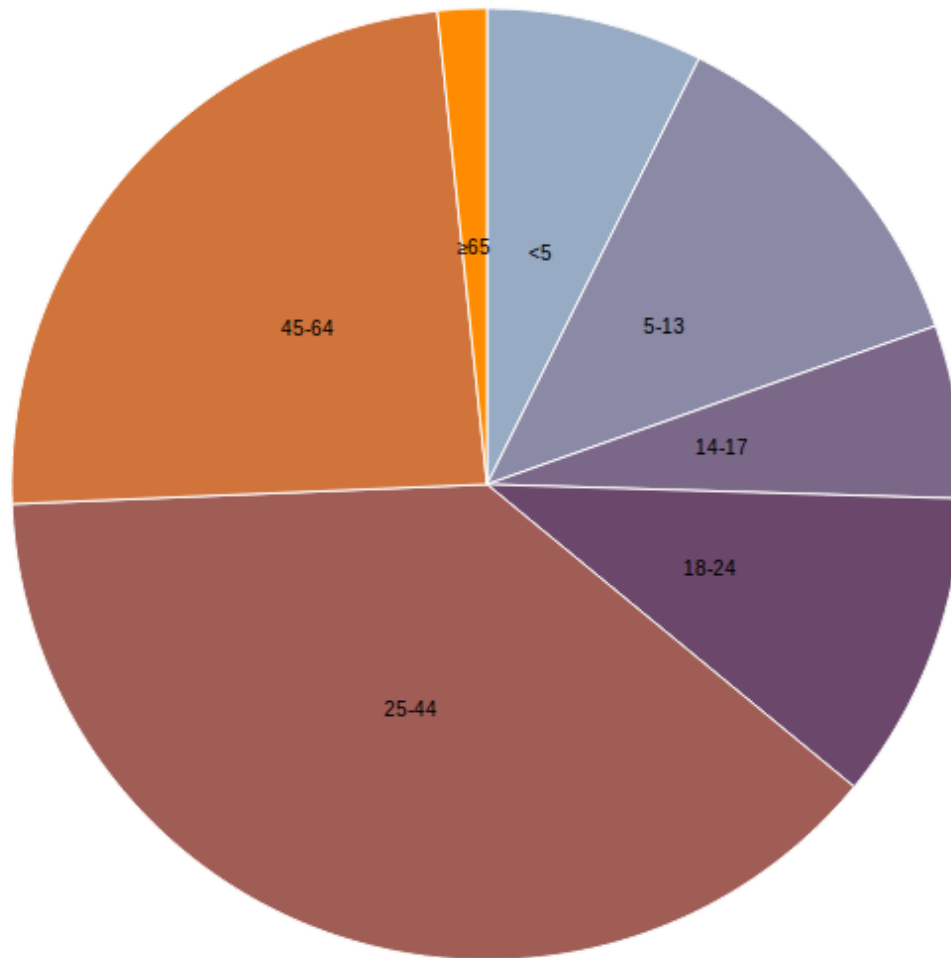- Simplify, simplify, simplify. Use statistics!
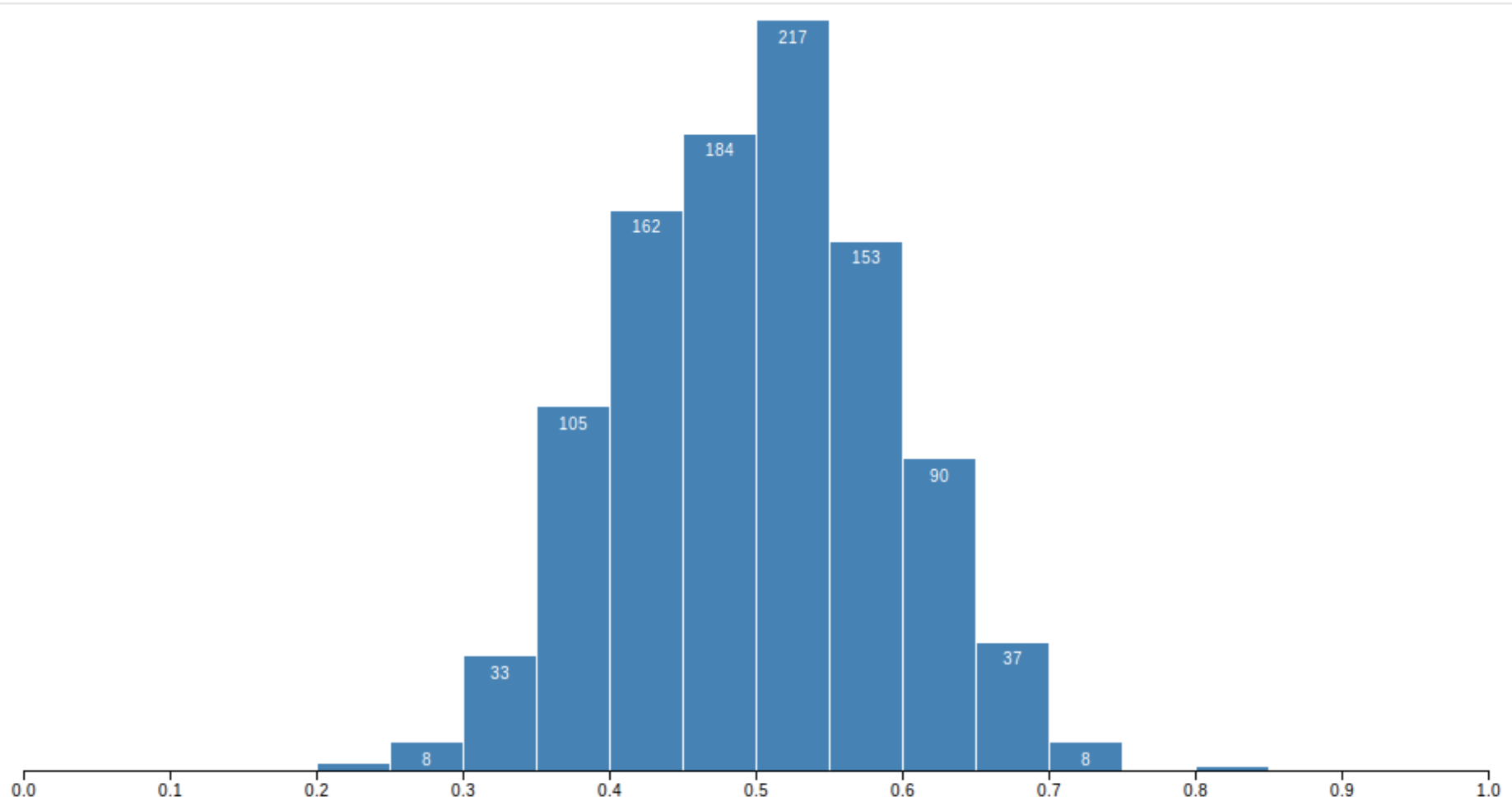
d3

data-driven documents

Pie chart!

Pie Chart

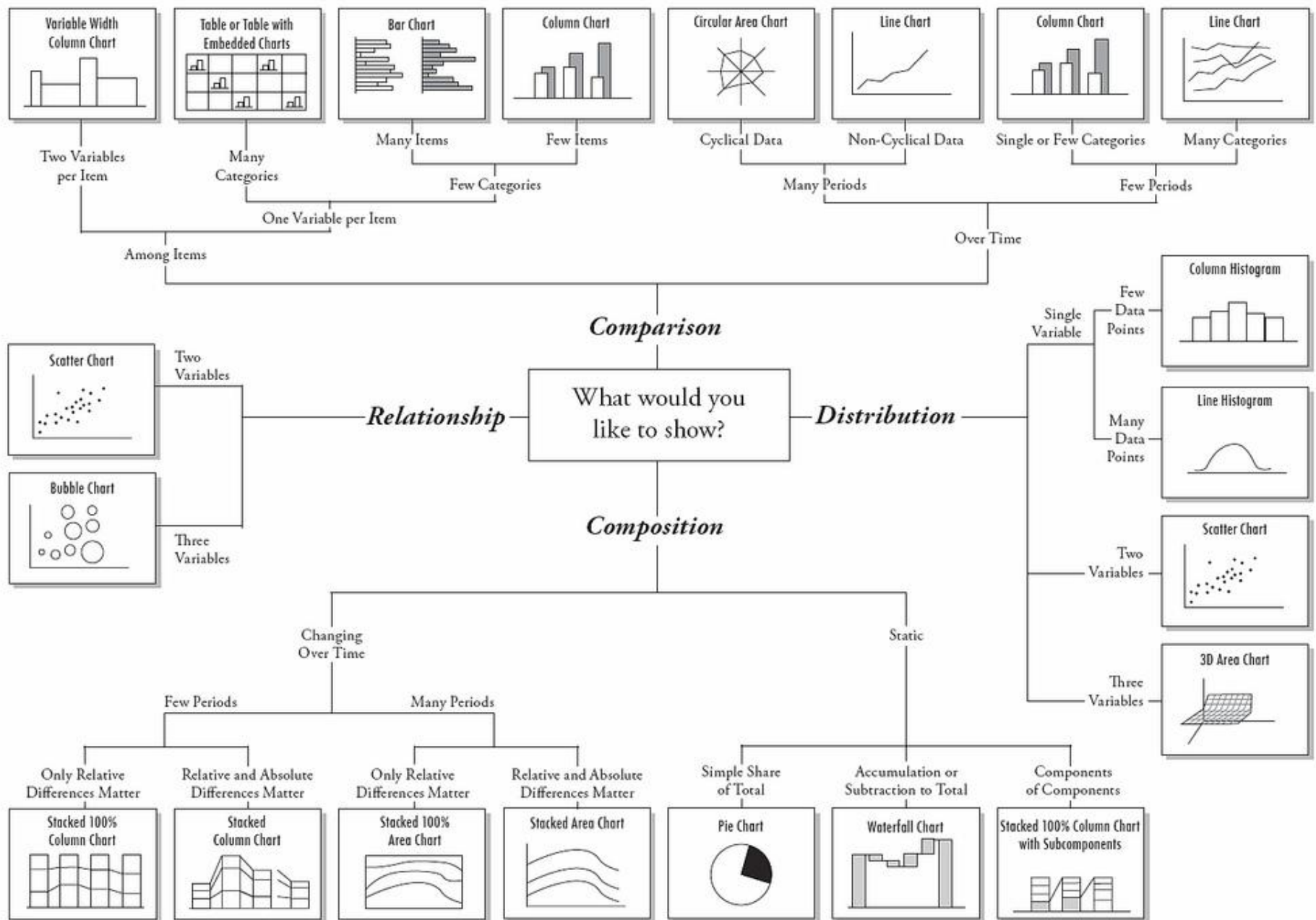# Histogram!

Histogram

Data formats

or why JSON is the greatest thing ever

Visualization =
Simplification

get a high-level view of what's going on

Chart Suggestions—A Thought-Starter

Variable Width Column Chart

Table or Table with Embedded Charts

Bar Chart

Column Chart

Circular Area Chart

Line Chart

Column Chart

Line Chart

Two Variables per Item

Many Categories

Many Items

Few Items

Cyclical Data

Non-Cyclical Data

Single or Few Categories

Many Categories

Few Categories

One Variable per Item

Many Periods

Few Periods

Among Items

Over Time

Comparison

Scatter Chart

Two Variables

What would you like to show?

Relationship

Distribution

Single Variable

Few Data Points

Many Data Points

Column Histogram

Line Histogram

Bubble Chart

Three Variables

Composition

Two Variables

Scatter Chart

Changing Over Time

Static

Three Variables

3D Area Chart

Few Periods

Many Periods

Simple Share of Total

Accumulation or Subtraction to Total

Components of Components

Only Relative Differences Matter

Relative and Absolute Differences Matter

Only Relative Differences Matter

Relative and Absolute Differences Matter

Stacked 100% Column Chart

Stacked Column Chart

Stacked 100% Area Chart

Stacked Area Chart

Pie Chart

Waterfall Chart

Stacked 100% Column Chart with Subcomponents

Big Data

visualization makes it manageable

Exercises!