Crafting Visual Stories with Data

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The universe is made of stories, not of atoms.

— Muriel Rukeyser

What is storytelling?

Rhetoric

Logos — Ethos — Pathos

I am blind

narrative | ˈnærətɪv

noun: Any account of connected events, presented in a sequence of written words or spoken words or (moving) pictures.
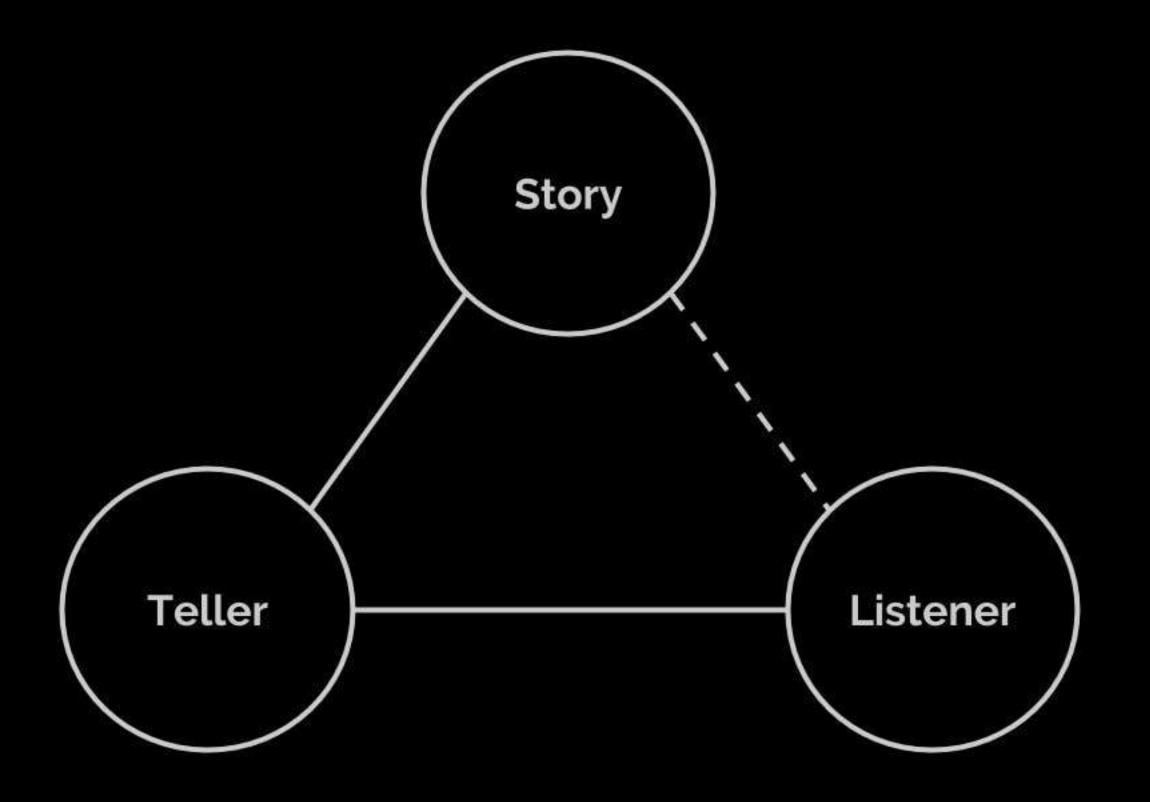
Events that happen in time

Linear Order

Named people who have to face decisions

Personal Decision

A disruption of a state of equilibrium

Change in Context

A foregrounding of human experience

Elevation – Human Emotion
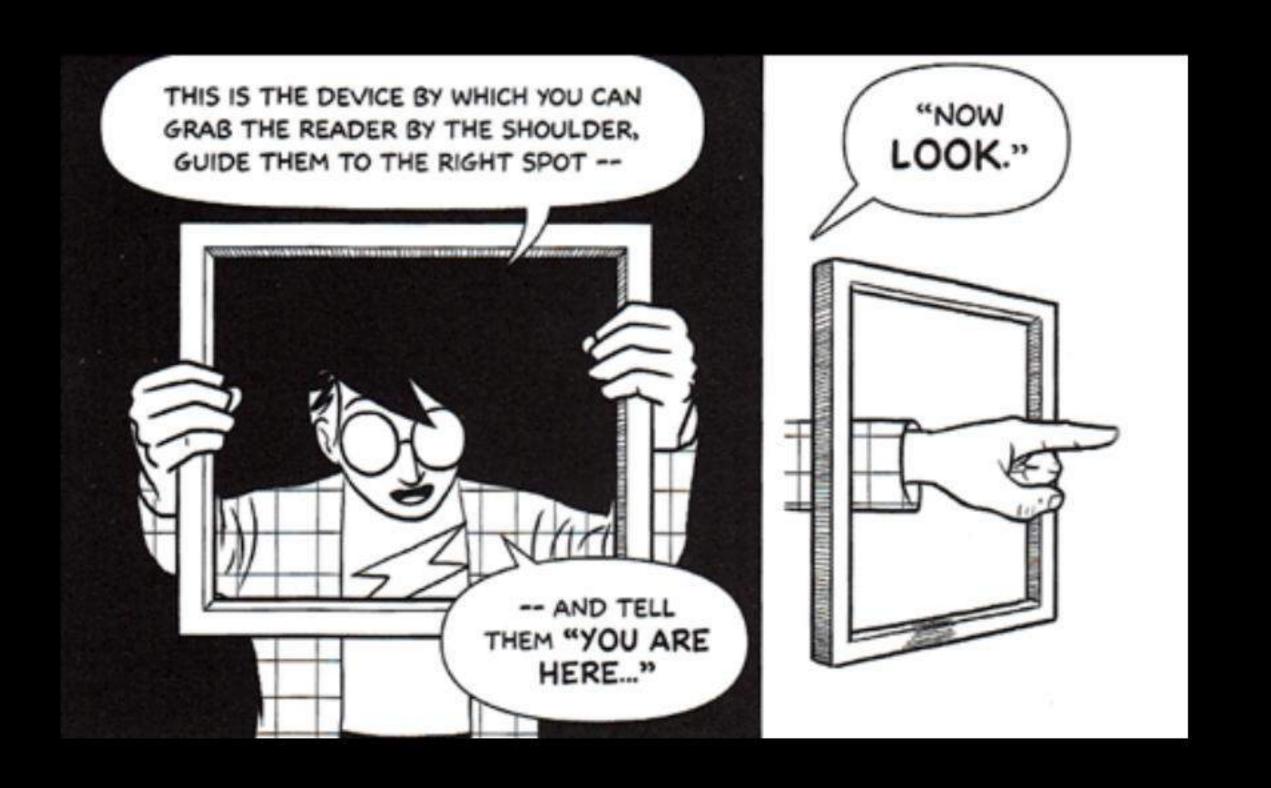
people | tell stories
words | tell stories
pictures | tell stories
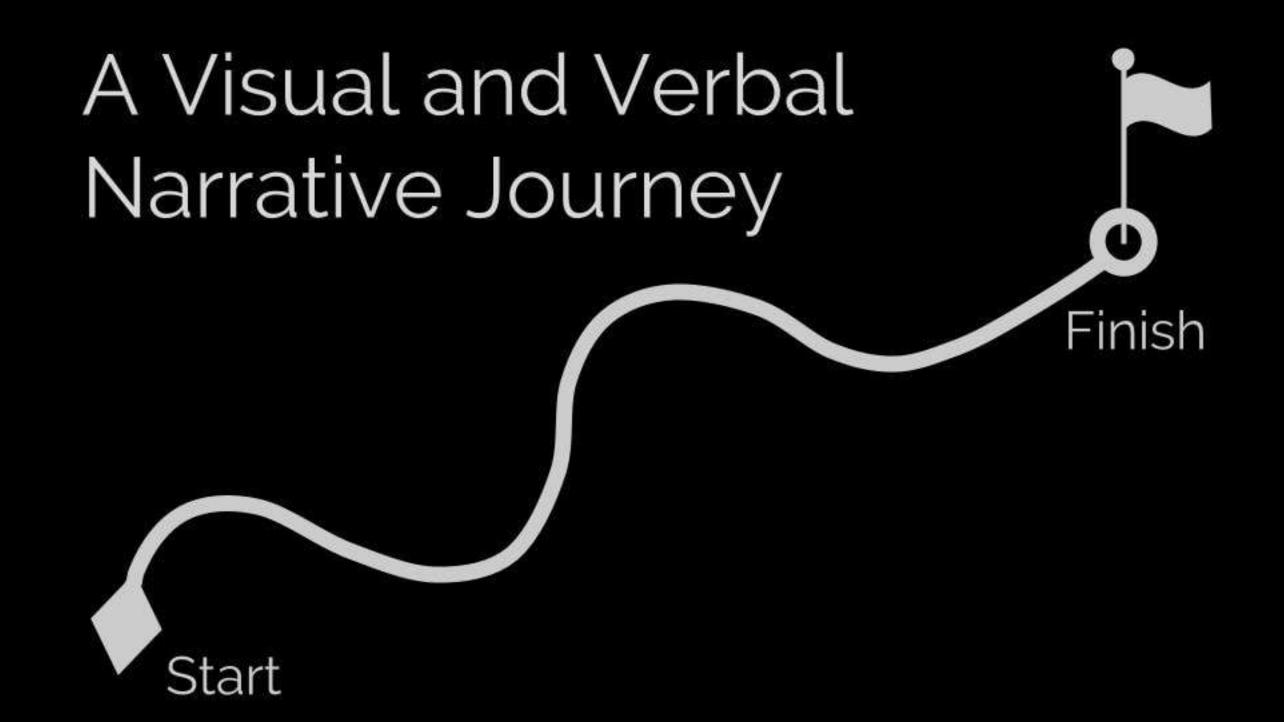comics | tell stories
movies | tell stories

Storytelling Triangle

Story Arc

Focus & Attention

A Visual and Verbal
Narrative Journey

Finish

Start

Cognitive Flow

One human life, closely observed, is everyone's life. In the particular is the universal.

— Roger Ebert

Story Mindset

In listening to **stories** *we tend to* **suspend disbelief** *in order to be entertained, whereas in evaluating* **statistics** *we generally have an opposite inclination to* **suspend belief** *in order not to be beguiled.*

John Allen Paulos

Stories are emotional

Stories are memorable

Stories are impactful

Visualisation
Storytelling
Visual Data Stories

Think Stories, Not Charts

averages	individual
movement	motives
no views	point of view
literal	metaphorical
determinate	open-ended

Explanatory
Narrative

Exploration
Layered

Explanatory	Exploratory
Narrative	Layered
Strong Order	Weak Order
Heavy Messaging	Light Messaging
Limited Interactivity	Free Interactivity
Author Driven	Reader Driven
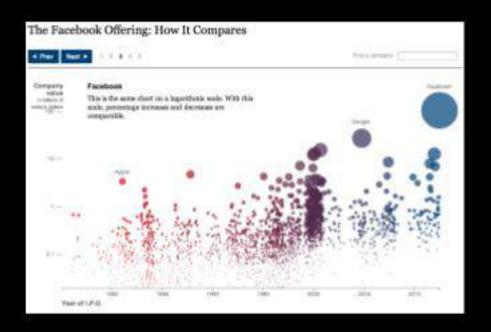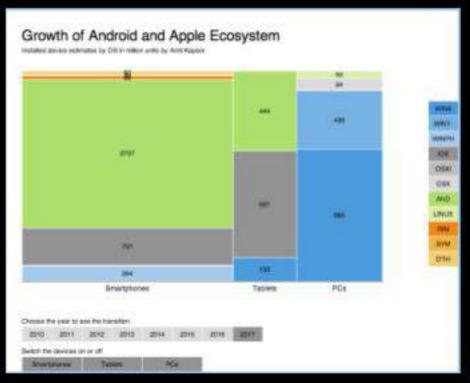
Interaction
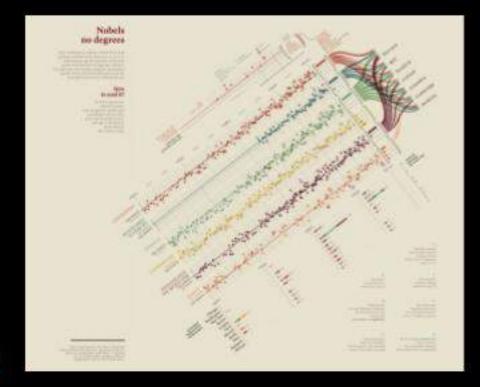
Explanatory

Exploratory

Static

Interaction

Narrative

Dashboard

Explanatory

Exploratory

Charts

Layered

Static

How can we craft visual-data-stories?

① Abstraction

② Representation

③ Aesthetics

④ Framing & Transition

⑤ Messaging

⑥ Flow

⑦ Interactivity

① Abstraction

Pattern

Trend

Deviation

Outlier
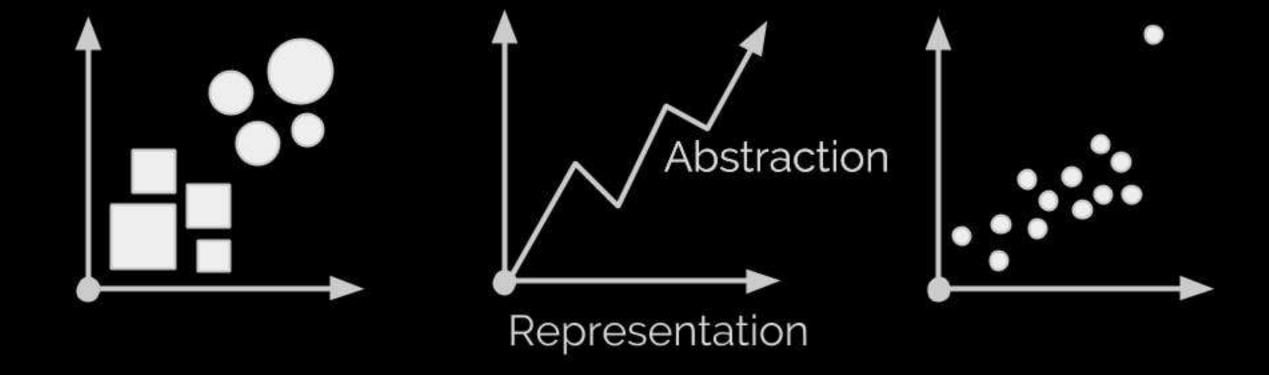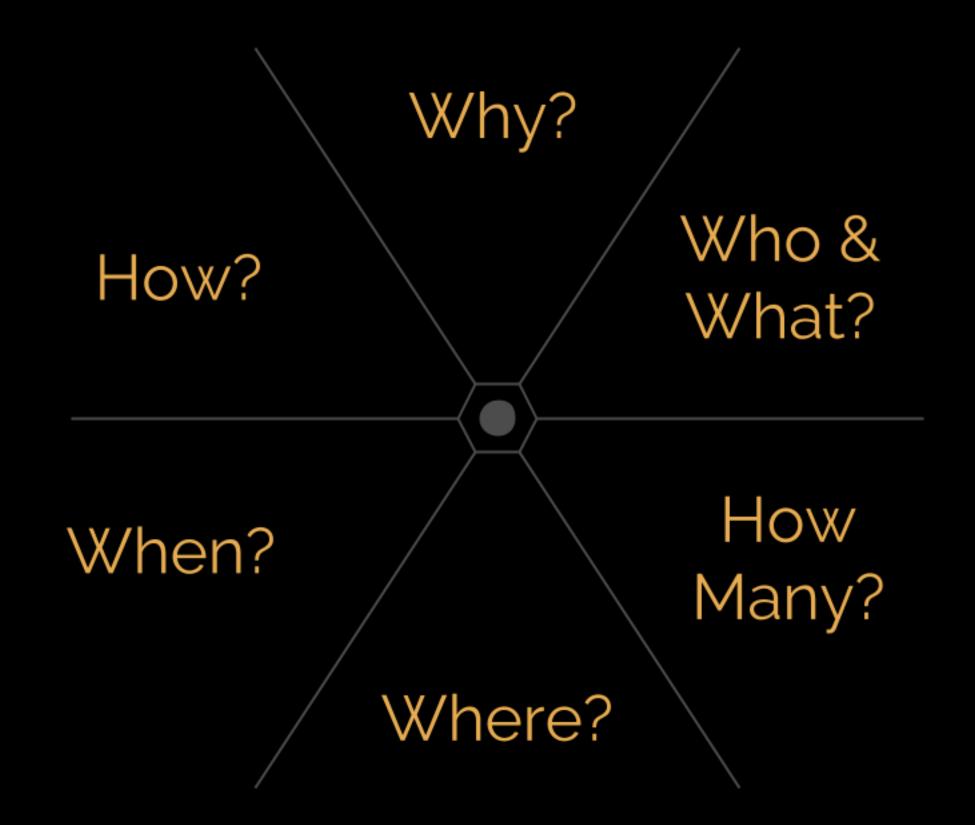
80% perspiration, 10% great idea, 10% output.
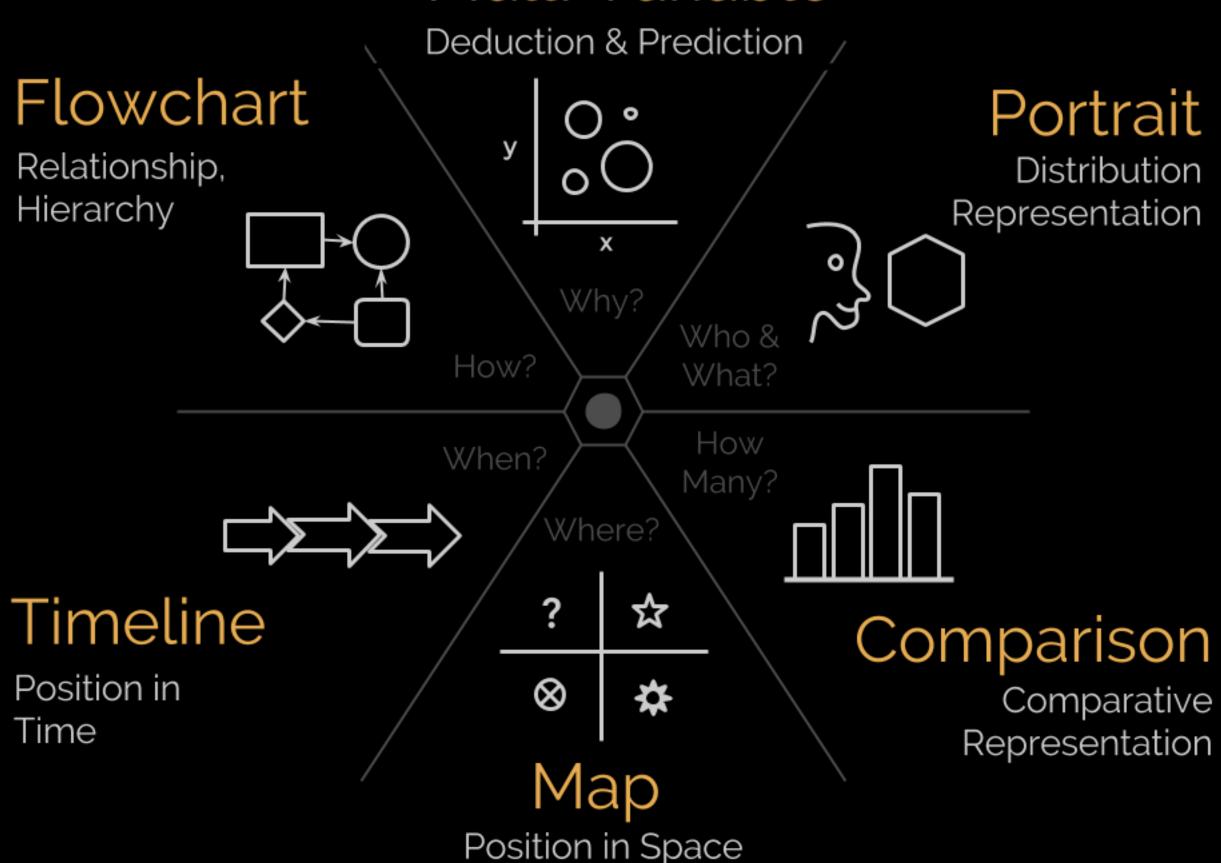
— Simon Rogers

② Representation

Abstraction

Representation

Why?

Who &
What?

How?

When?

How
Many?
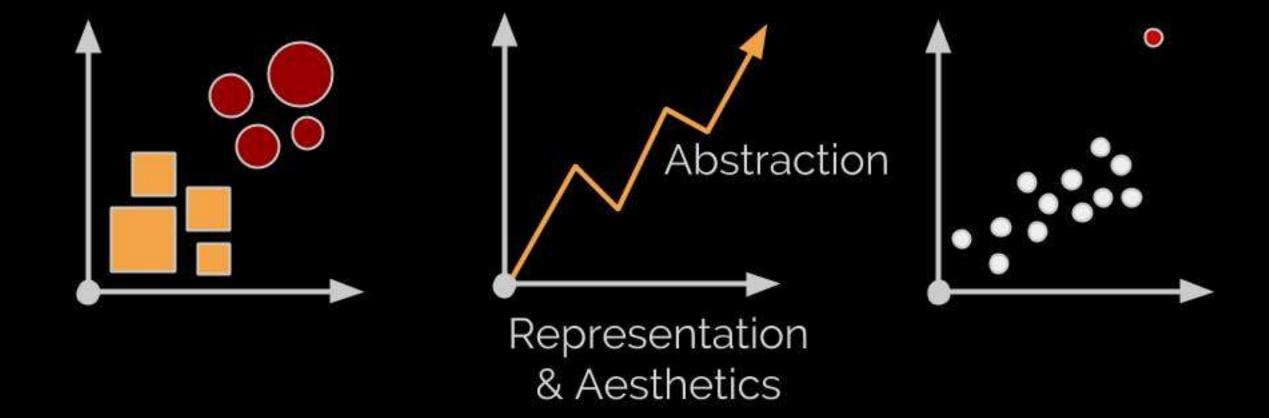
Where?
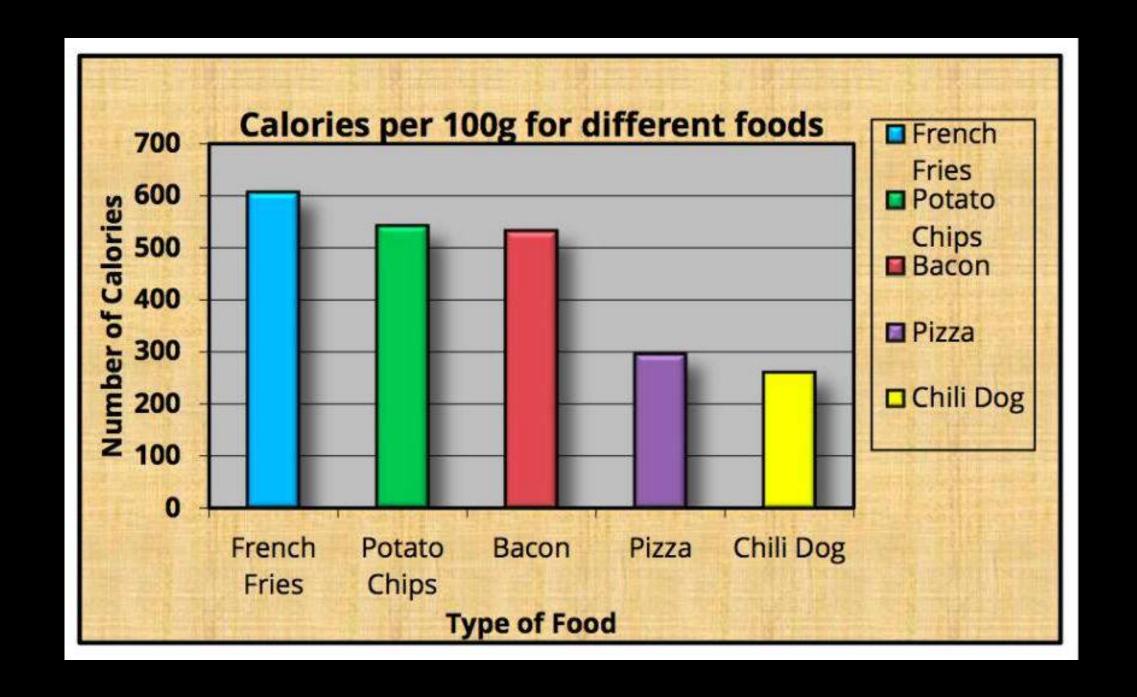
We're bad at the why questions, which are often much more interesting.

— Amanda Cox

Calories per 100g for different foods

Bad Aesthetics

Calories per 100g
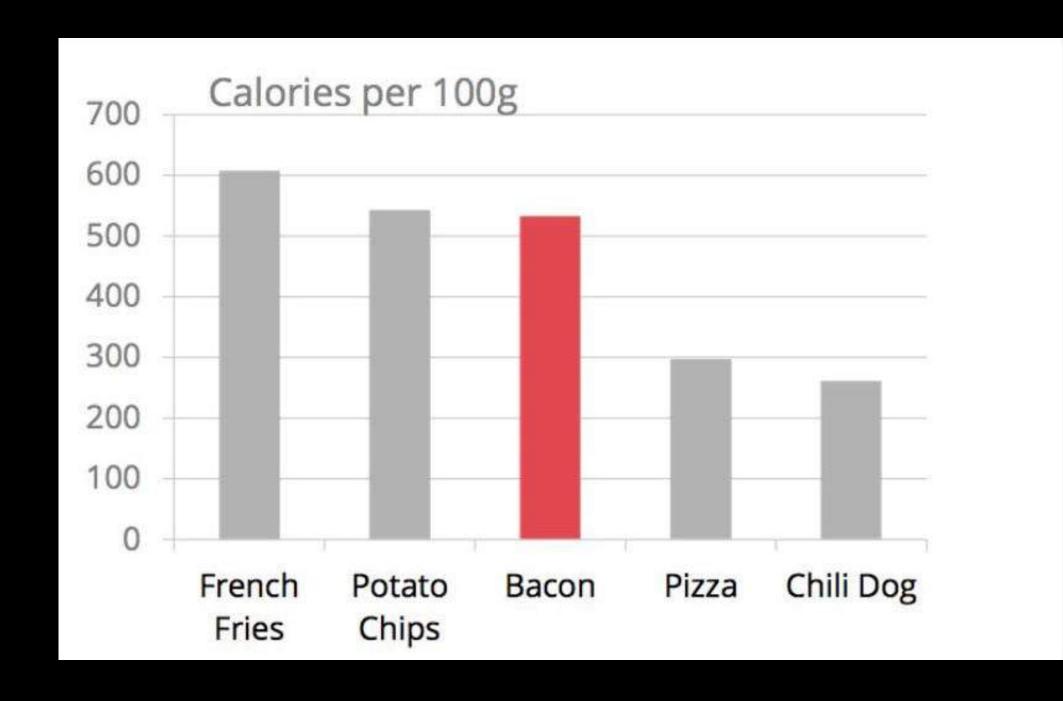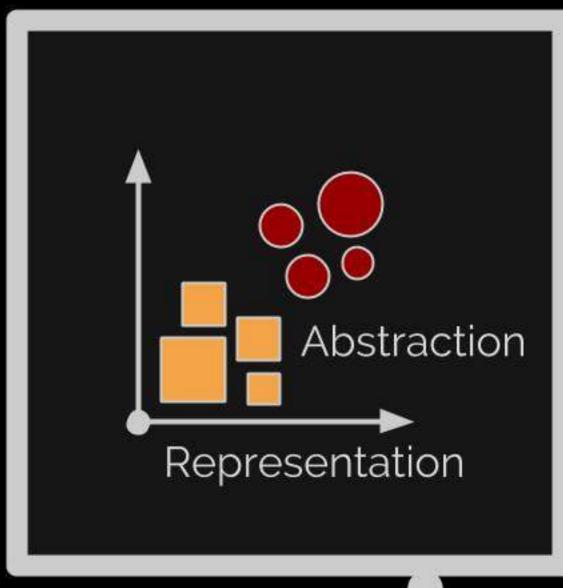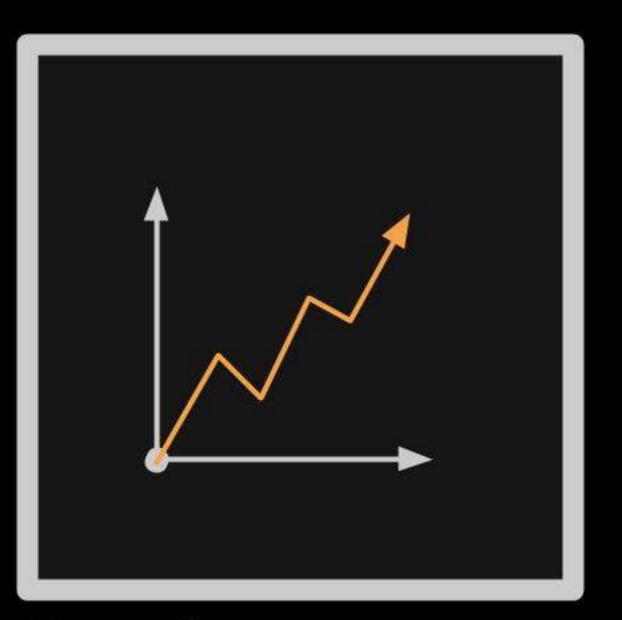
Good Aesthetics

Above all else, do no harm

— *Tufte*

④ **Framing & Transition**

Abstraction

Representation

Framing

Transition

Source: Walmart & Target
Store Expansion

YEAR:
2008

STORE COUNT:
3488

Single Frame Dominates

Consistent Visual Framework

Source: OECD Better Life
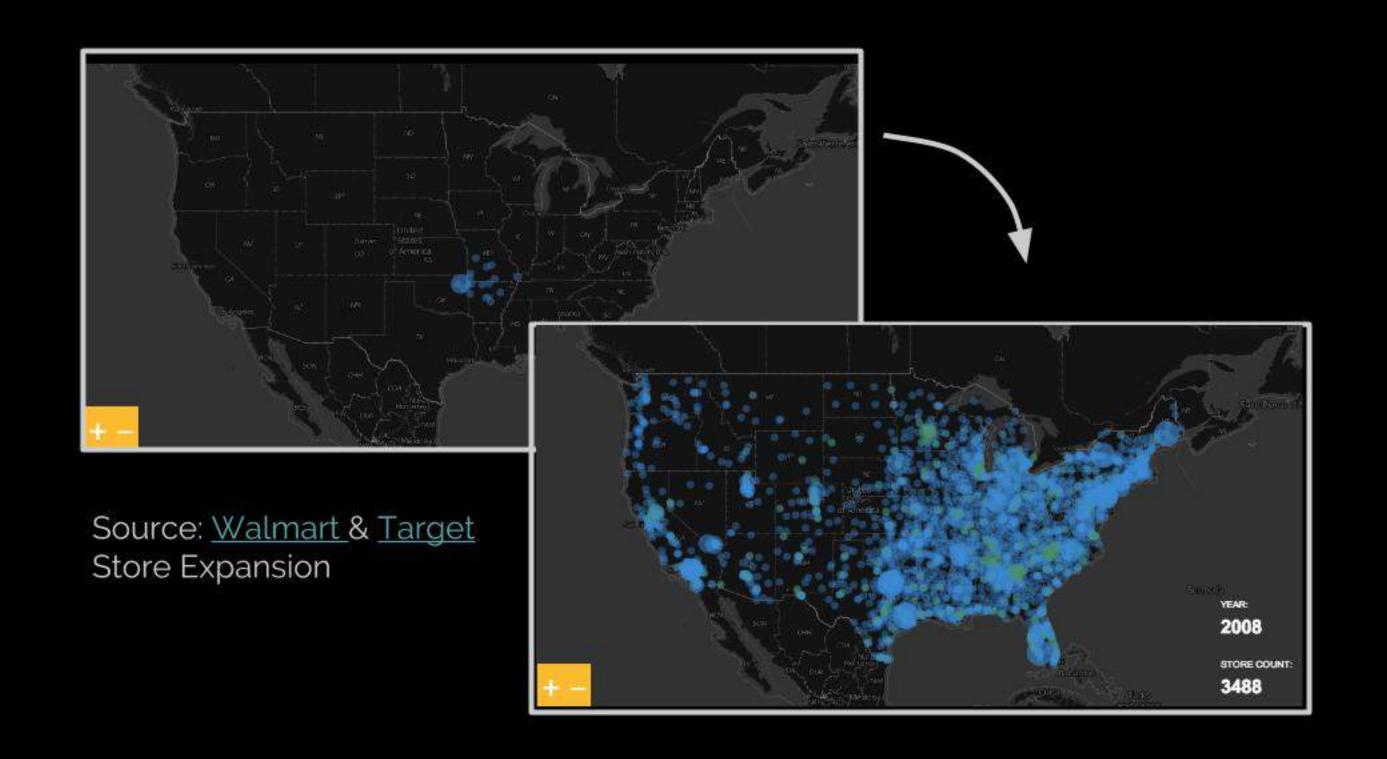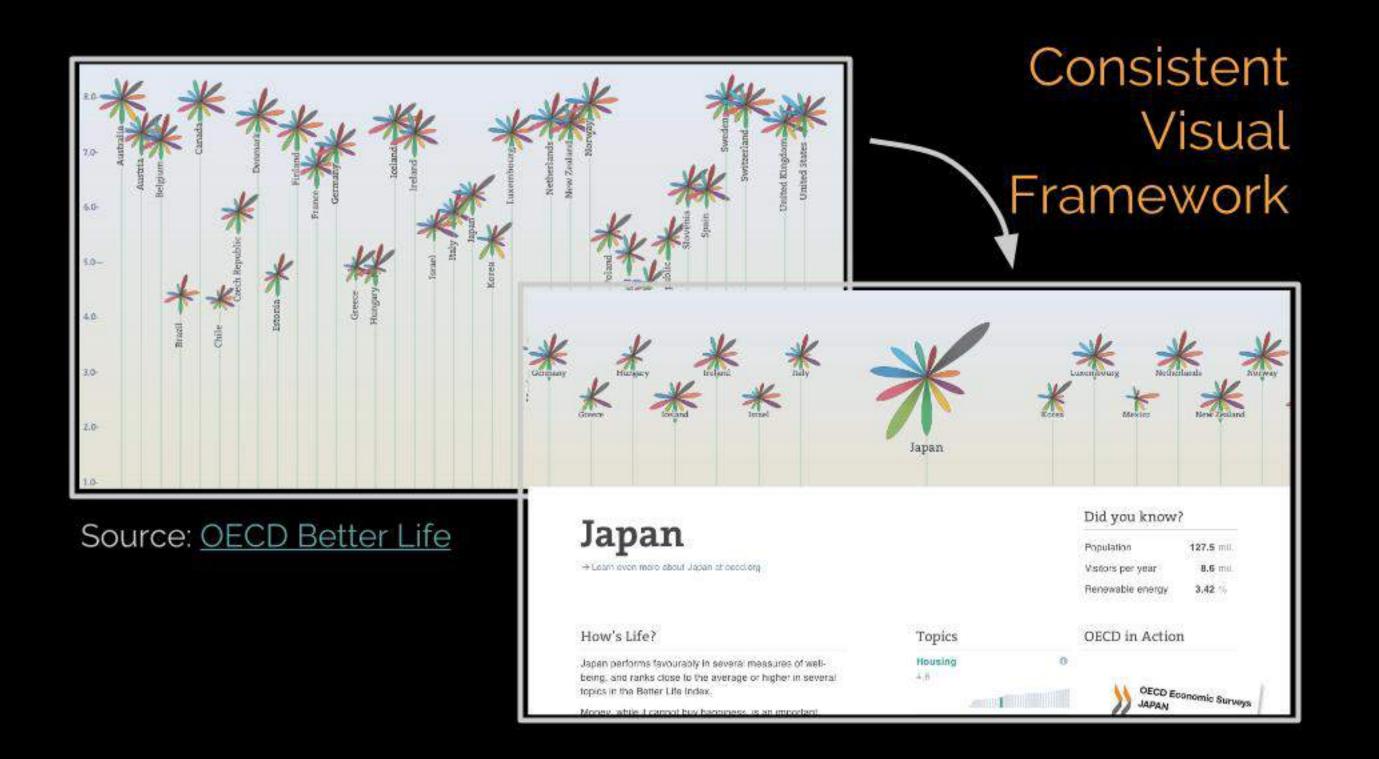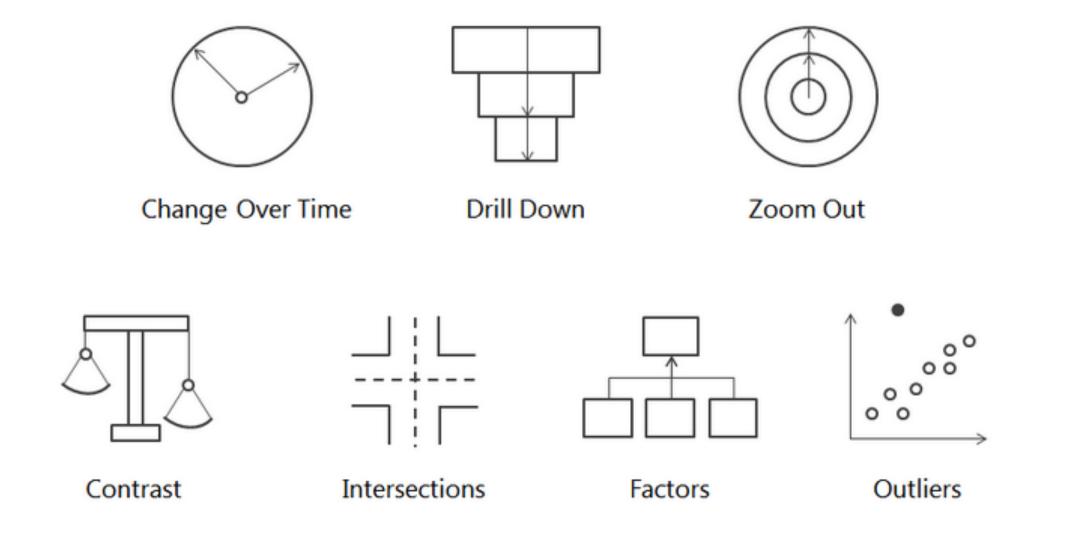
Establish & Focus
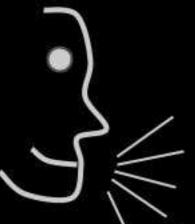
Overview first, then zoom & filter, details on demand
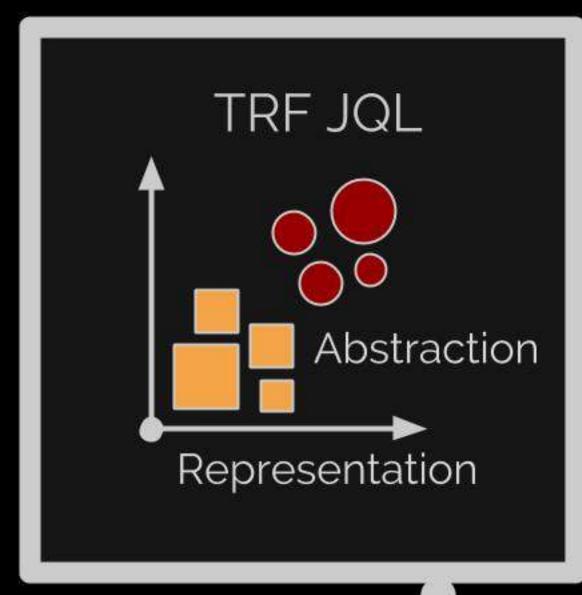
— *Ben Schniederman*

Types of Transitions

A Century of Meat

American consumption of chicken and beef rose substantially after World War II, aided by the development of intensive farming methods, the proliferation of fast-food restaurant chains and supermarkets and the adoption of reliable home refrigeration.

Beef consumption peaked in 1976 but then declined, in part because of the publication of new dietary guidelines and studies that associated saturated fats and cholesterol with heart disease.

PER CAPITA AVAILABILITY OF BONELESS, TRIMMED MEAT*

... 90 pounds per year

1,000th McDonald's restaurant opens

"Where's the beef?" ad campaign begins

First U.S. case of mad cow disease

BEEF

First McDonald's restaurant opens

"The Other White Meat" ad campaign begins

PORK

Korean War

Vietnam War

EGGS (retail weight)

World War I

Great Depression

World War II

First Kentucky Fried Chicken franchise

CHICKEN

FISH AND SHELLFISH

LAMB

TURKEY

VEAL

1910   1920   1930   1940   1950   1960   1970   1980   1990   2000   2008

*Note: per capita availability of boneless meat is a proxy for human consumption, and is lower than retail weight or carcass weight. Bones, offal and game are excluded.
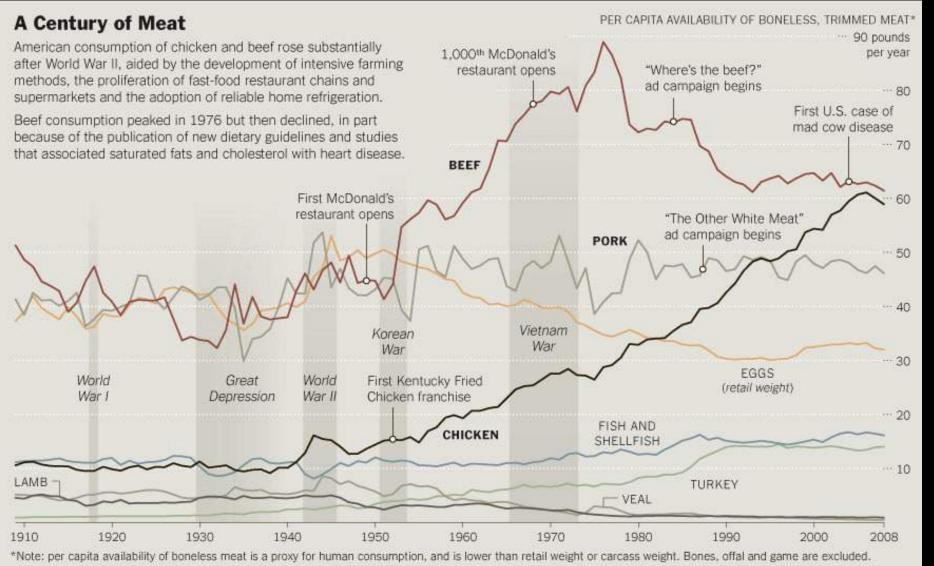
Sources: U.S. Department of Agriculture (data); news and company reports; "Putting Meat on the American Table," by Roger Horowitz
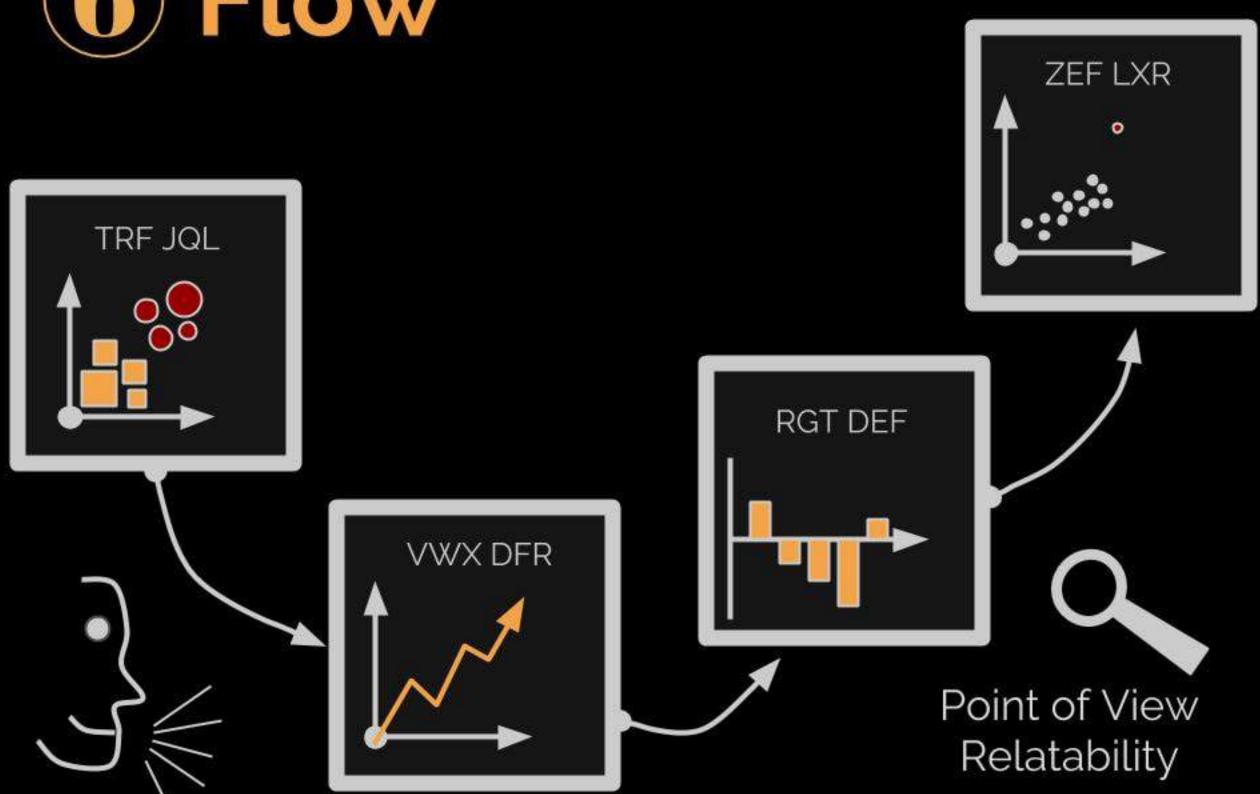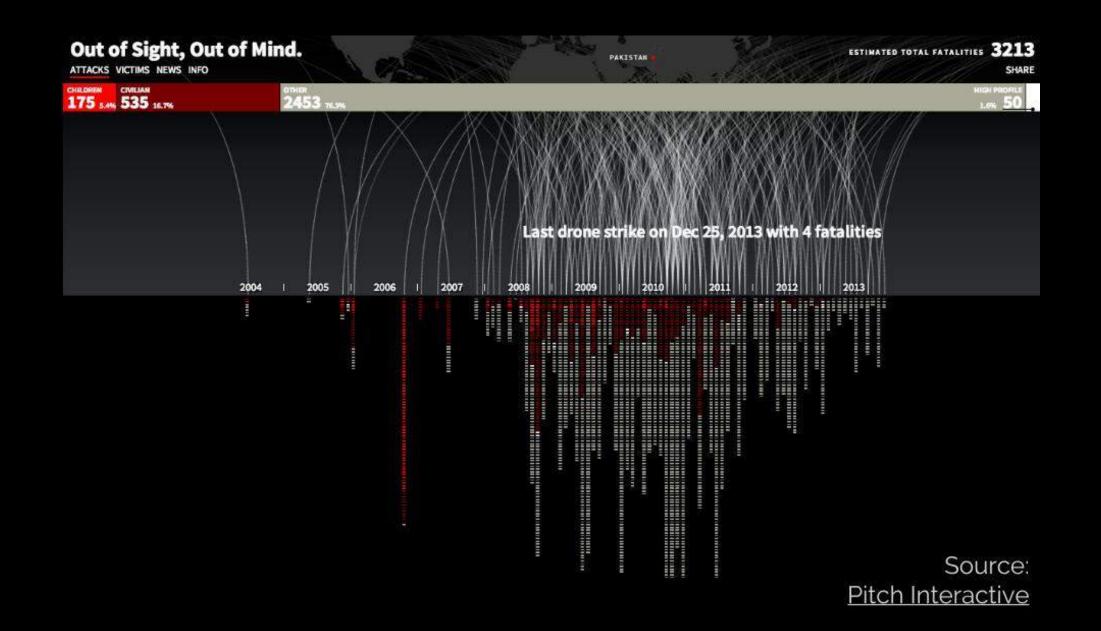
JONATHAN CORUM/THE NEW YORK TIMES

Meaningful Annotation

Powerful Narration

There's always room for a story that can transport people to another place.
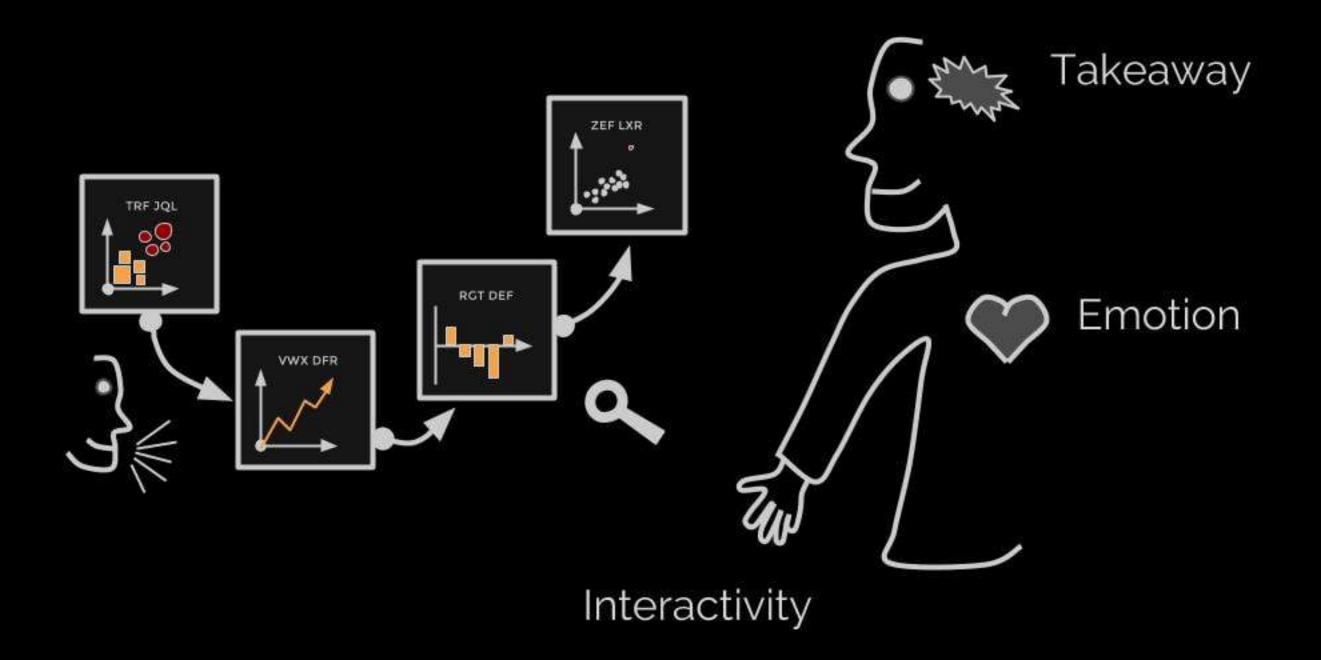
— J.K. Rowling

Out of Sight, Out of Mind.
ATTACKS VICTIMS NEWS INFO

PAKISTAN

ESTIMATED TOTAL FATALITIES **3213**
SHARE

CHILDREN
175 5.4% CIVILIAN **535** 16.7% OTHER **2453** 76.5% HIGH PROFILE 1.0% **50**

Last drone strike on Dec 25, 2013 with 4 fatalities

2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

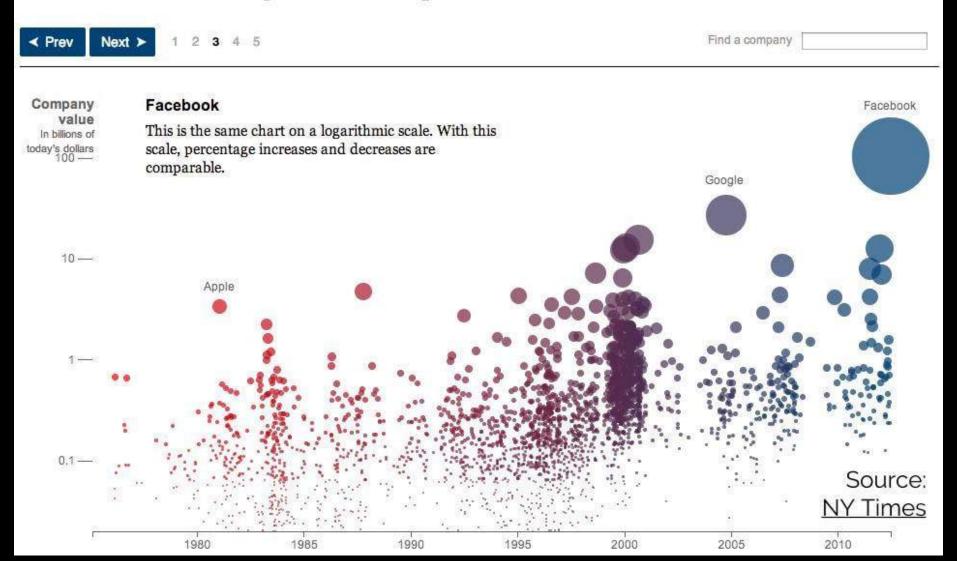Source:
Pitch Interactive

More Linear, More Storylike

Guide the audience

All stories are indeed structures, but all the best stories are brittle structures.

— *Tadhg Kelly*
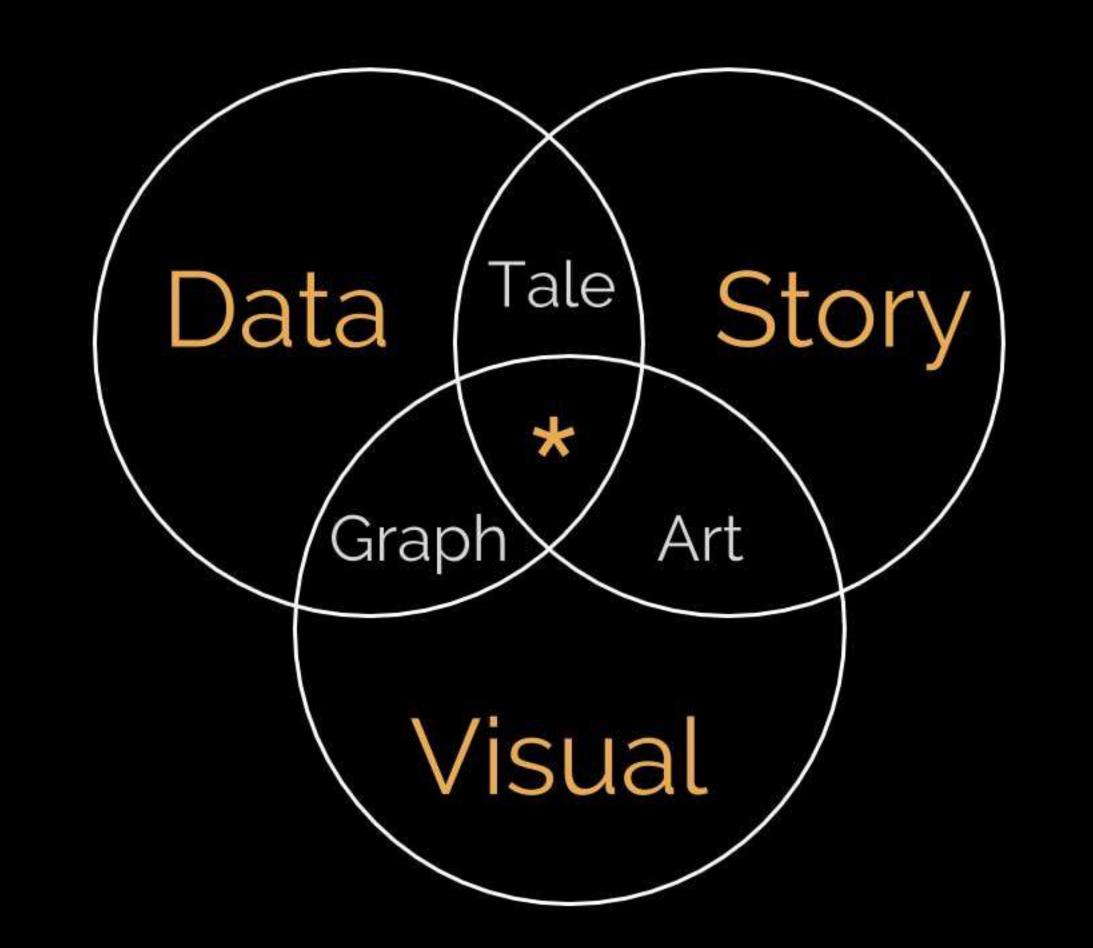
The Facebook Offering: How It Compares
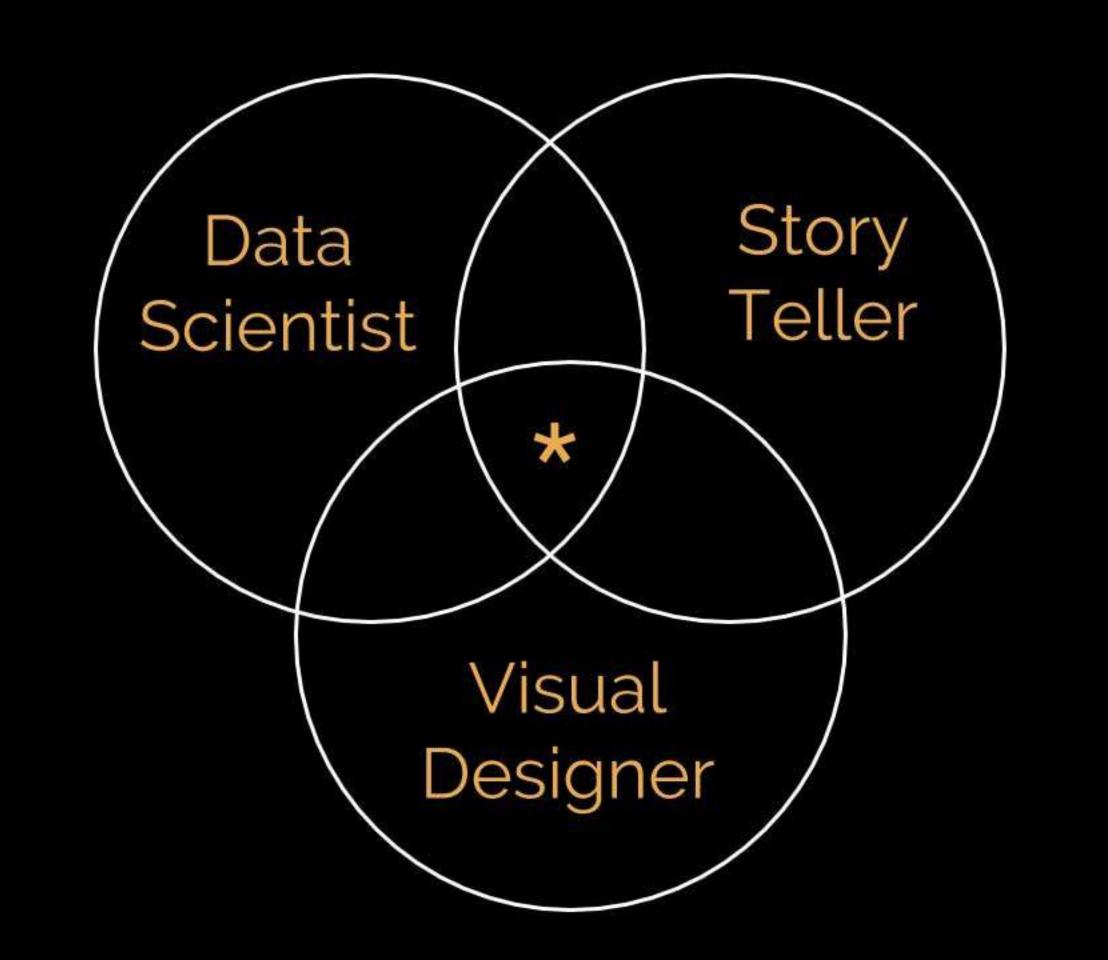
Navigation

Source: Gapminder

Staging & Animation

Ensure the interactivity has Affordance. To afford means "to give a clue"

— Dan Norman

Visualisation
Storytelling
Visual Data Stories

Data is just a clue to the end truth

— *Josh Smith*

See the world through a data lens

Aesthetics is deeply associated with emotions and feelings

— *Giorgio Lupi*

Create beautiful aesthetics

The data is just part of the story.

— Jonathan Harris

Setup

Resolution

Climax

Conflict

Tell stories that connect

Art | Craft | Science

Closing the Gap

THE GAP

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