

Y O U  
A R E T H E  
R E V O L U T I O N.

DOMOPALOOZA

2 0 1 7

Y O U A R E T H E R E V O L U T I O N .

# **STORIES RULE THE WORLD: HOW TO TELL A BETTER STORY WITH DATA**

**Brent Dykes**

Director of Data Strategy, Domo

 @analyticshero

# DATA STORYTELLING AGENDA

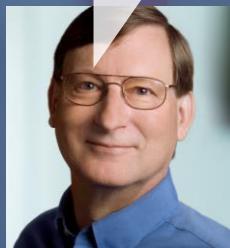
- 1 Why Tell Data Stories?
- 2 The **Psychology** of Data Storytelling
- 3 **What** is Data Storytelling?
- 4 **Data:** The Foundation of Your Data Story
- 5 **Narrative:** The Structure of Your Data Story
- 6 **Visuals:** The Scenes of Your Data Story

1. Run for cover?
2. Inform?
- ③ Tell a story?



**MR.  
DECISION  
MAKER**

"The ability to take data—to be able to **understand** it, to **process** it, to **extract value** from it, to **visualize** it, to **communicate** it—that's going to be a **hugely important skill in the next decades.**"



**Hal Varian**  
Chief Economist  
at Google



A close-up photograph of a young girl with long brown hair and round glasses. She is wearing a yellow ribbed sweater and is looking down at an open book. Her hands are resting on the pages. The background is blurred, showing more books on shelves.

# As human beings, we love stories.

“After nourishment, shelter, and companionship, **stories** are the thing we need the most in the world.”



**Philip Pullman**  
Author

# As analytics experts, we love data.



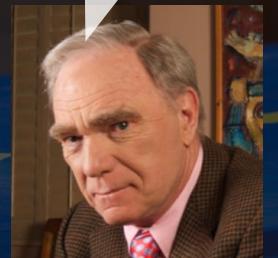
"Numbers have an **important story** to tell. They rely on you to give them a **clear and convincing voice**."



**Stephen Few**  
Data Viz Expert

# Head-to-head: Stories beat statistics.

"Storytelling is the **most powerful way** to put ideas into the world today."



**Robert McKee**  
Professor



# TWO WAYS STORIES BEAT STATISTICS

1

More Memorable



5%  
statistics

VS

63%  
stories

2

More Persuasive



\$1.43  
statistics

VS

\$2.38  
story

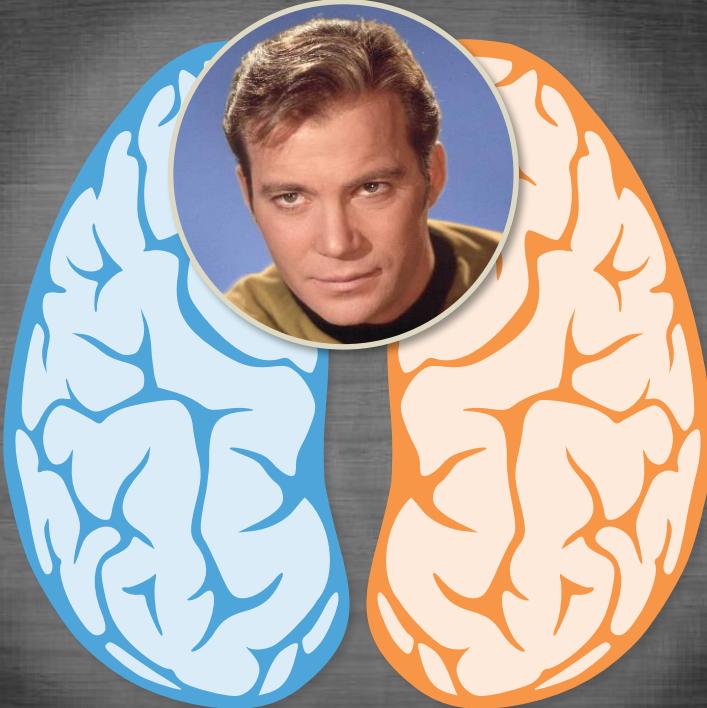
# THE PSYCHOLOGY OF STORYTELLING



# WHAT INFLUENCES DECISIONS?

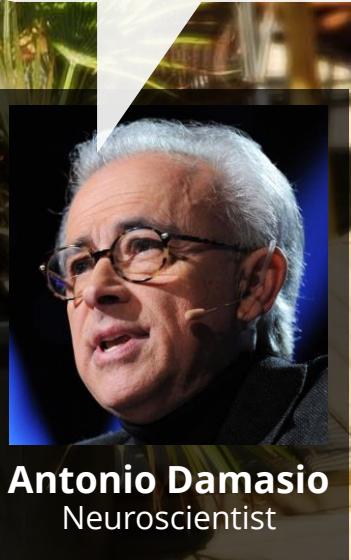


LOGIC



EMOTION

"Feelings are not just the shady side of reason . . . they **help us to reach decisions** as well."

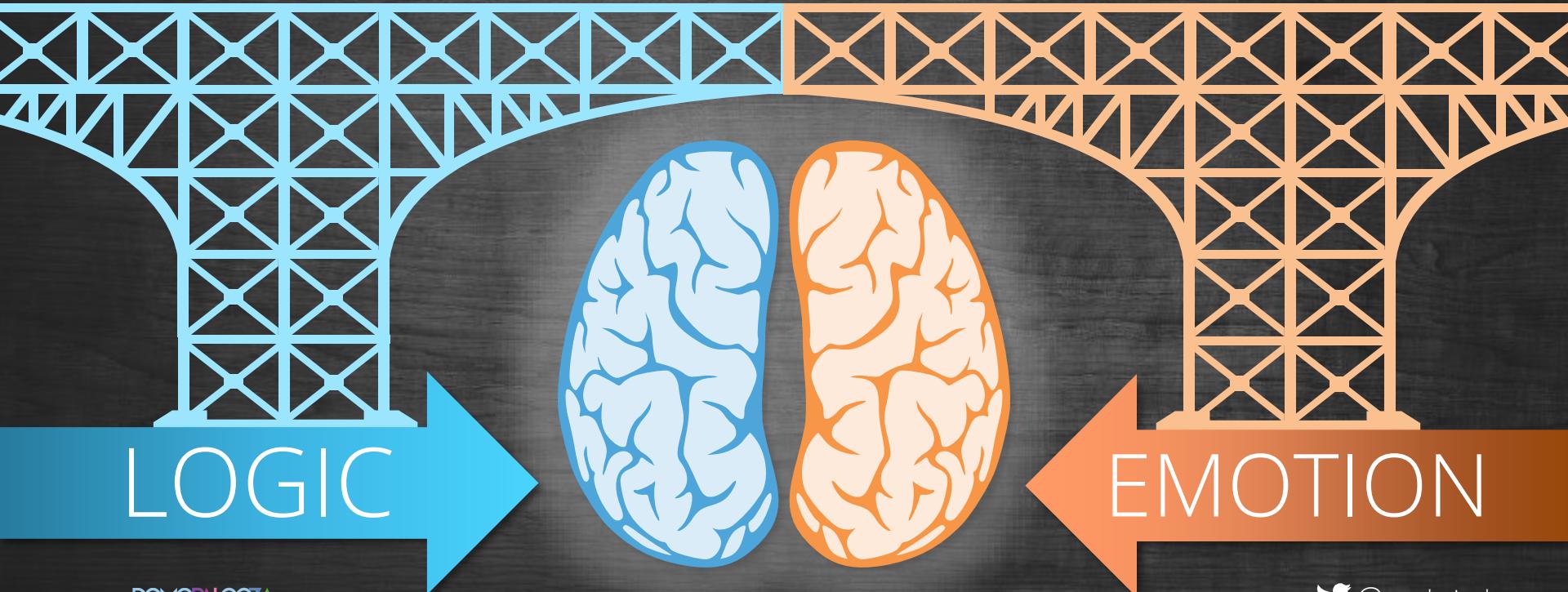


**Antonio Damasio**  
Neuroscientist



# WHY MERGE DATA WITH STORIES?

Data Story



A photograph showing the back of a person's head and shoulders, wearing a patterned sweater, speaking to a group of people in a room. The background is blurred.

We **hear** statistics,  
but we **feel** stories

# AUDIENCES ARE MORE RECEPTIVE TO STORIES

DATA →



## Shields Up

"When we read dry, factual arguments, we read with our dukes up. We are **critical** and **skeptical**..."

DATA  
+  
STORY →



## Shields Down

"...But when we are absorbed in a story we **drop our intellectual guard**. We are moved emotionally and this seems to leave us defenseless."

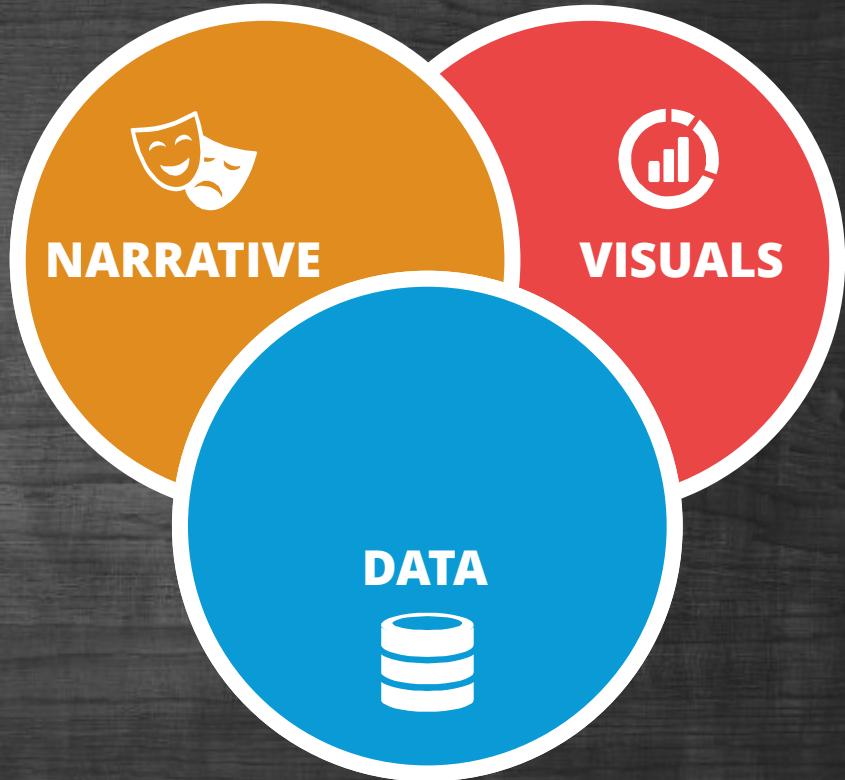
Jonathan Gottschall  
Author, *The Storytelling Animal*



# DATA STORYTELLING DEFINED

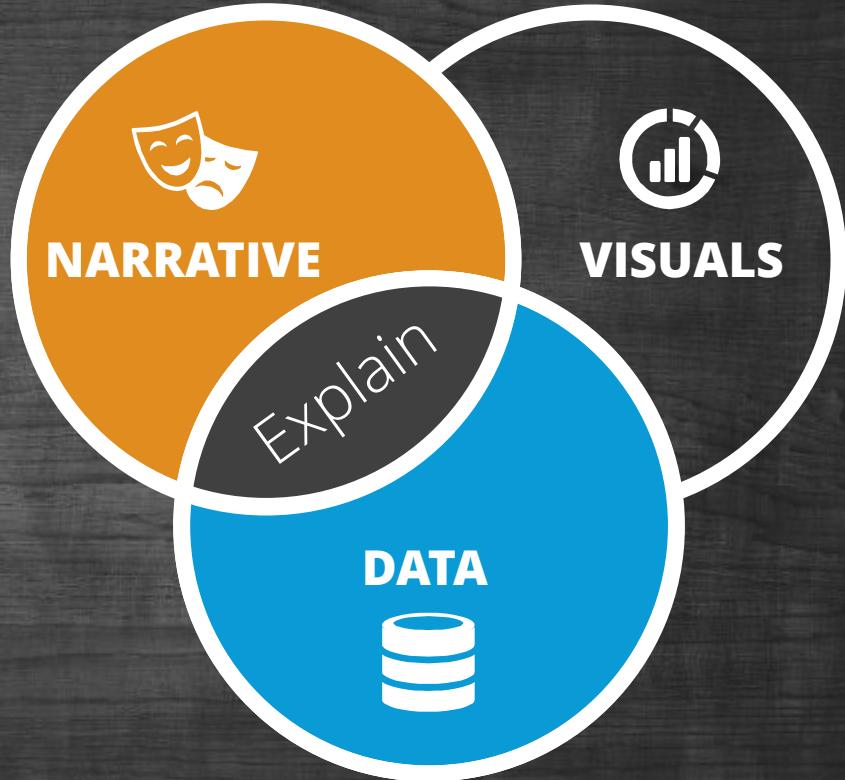
A structured approach for communicating data insights more effectively to an audience using narrative elements and data visualizations.

# 3 Keys to Data Storytelling



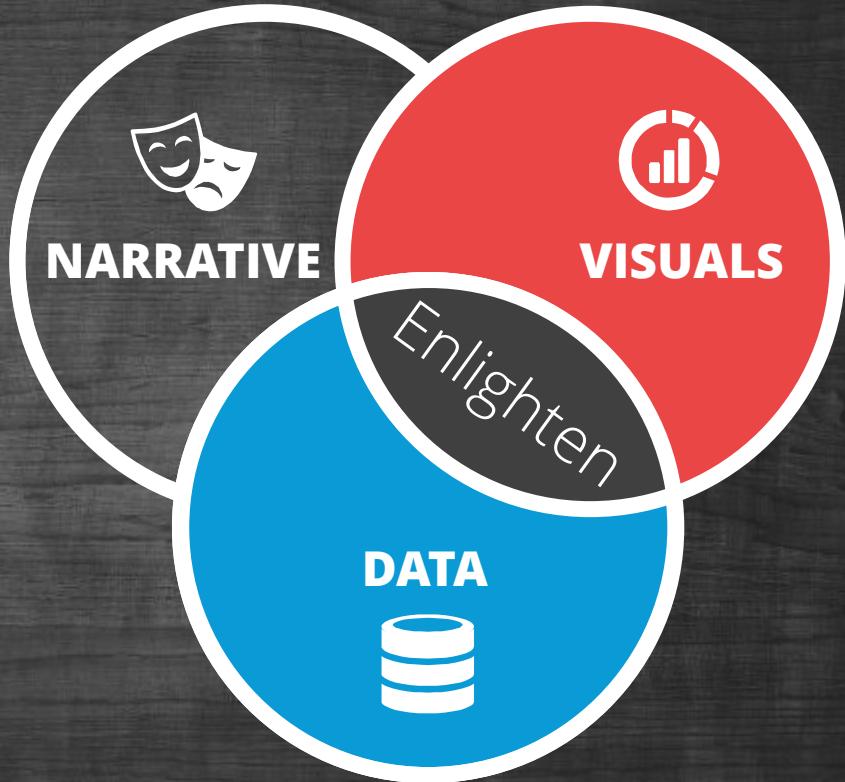
# Explain:

Narrative +  
Data



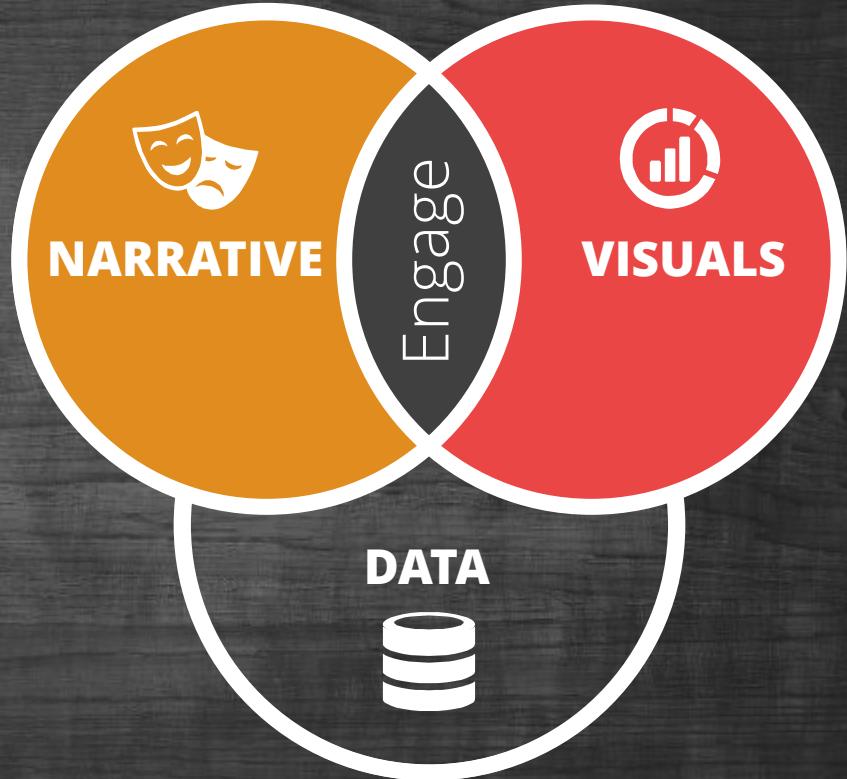
# Enlighten:

## Data + Visuals



# Engage:

Narrative +  
Visuals



# Influence **change** with data stories



# DATA STORYTELLING WITH DOMO?

AUTOMATED



STORY  
FRAMING



Relevant points

INFORMATION

CURATED



STORY  
TELLING



Main point

INSIGHT

# STORY FRAMING TO STORYTELLING

FORM FILL TO LEAD CREATION BY DAY (MINUTES)

Form Fill to Lead Creation by Day (Minutes) This Quarter, by Day ▾

**11.5** minutes on average today

Goal

600

400

200

Average Minutes



## STORY FRAMING

Feb 2017 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 1 2 3 4 Mar 2017

BB Form Fill Date

## STORIES!



## STORYTELLING

Matt Belkin  
@Colby Hooley

Fri, Mar 17 7:56 AM MDT

Colby Hooley  
@Matt Belkin

Fri, Mar 17 8:09 AM MDT

Rick Nash  
@Matt Belkin @Colby Hooley

Fri, Mar 17 5:13 PM MDT

9 People can view.

# DOMO TOOLBOX FOR DATA STORYTELLING



## STORY FRAMING



## STORYTELLING

Data Visualizations

Title & Descriptions

Collections

Note cards

Alerts

Report Scheduler

Buzz

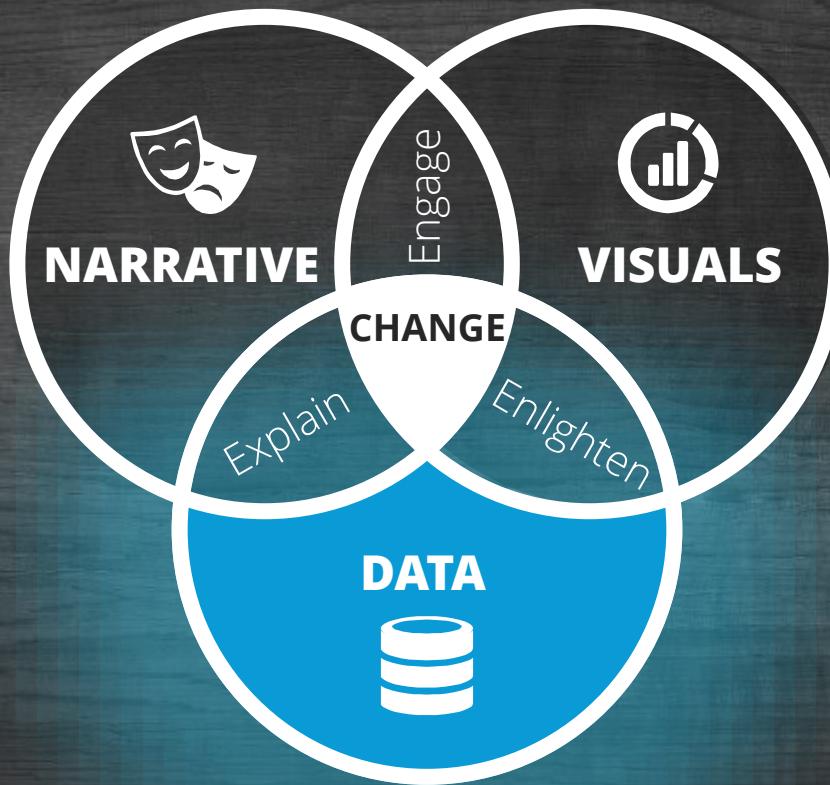
Annotations (New)

Curated Dashboard

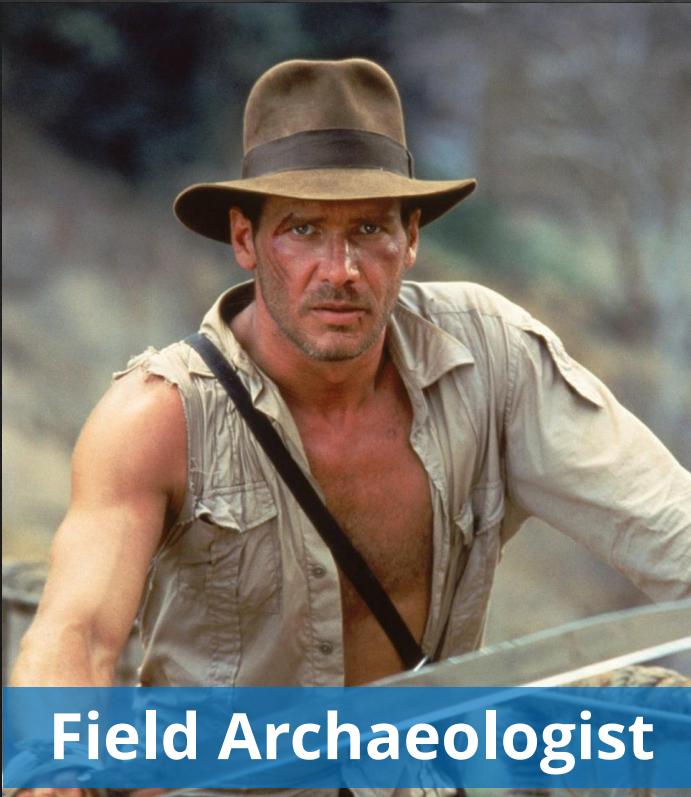
Export to PowerPoint



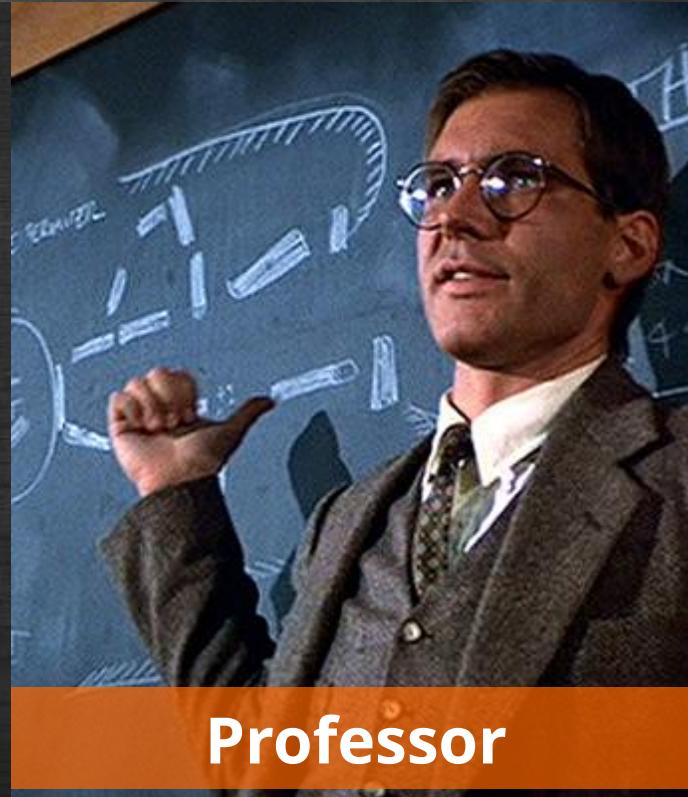
# DATA: FOUNDATION OF YOUR DATA STORY



# THE TWO SIDES OF INDIANA JONES

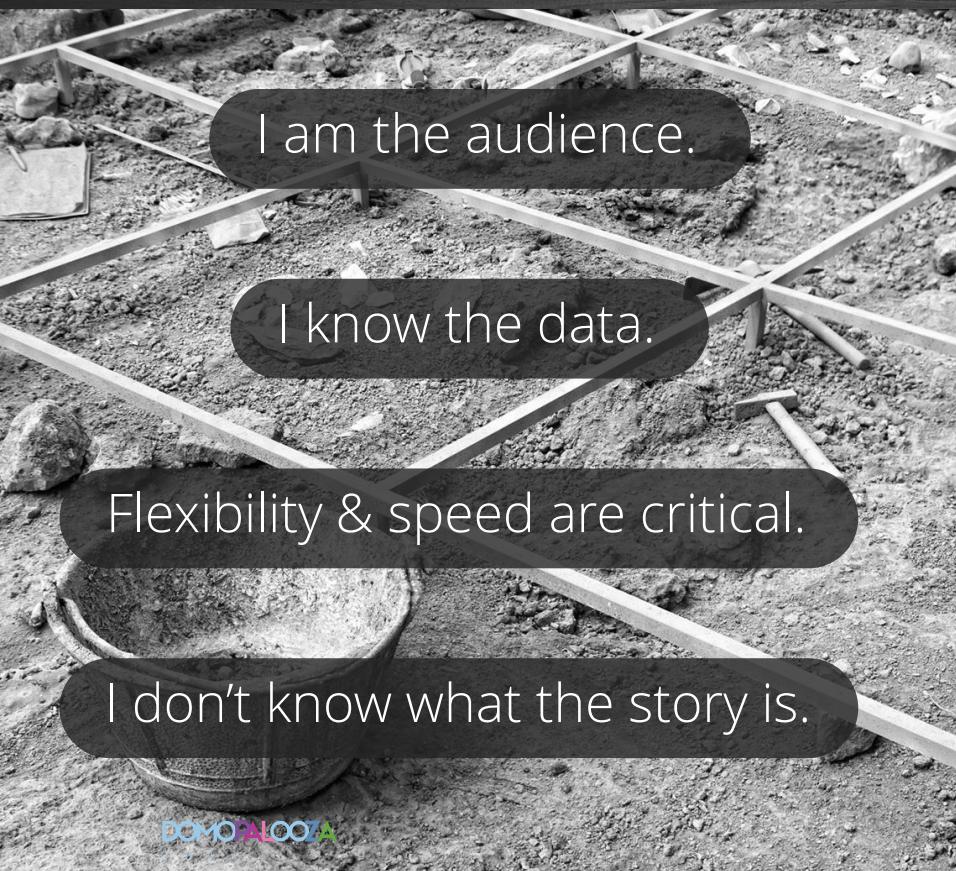


Field Archaeologist

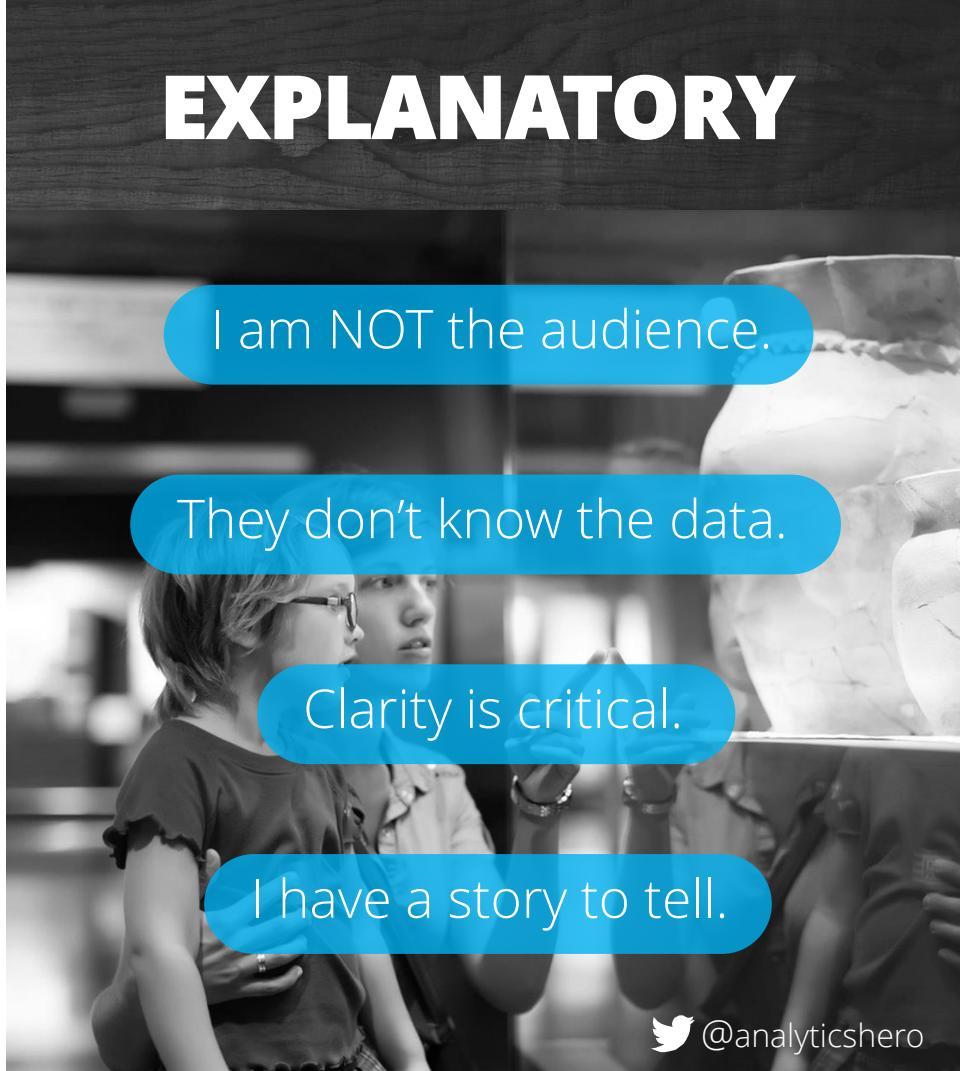


Professor

# EXPLORATORY



# EXPLANATORY



# DATA STORIES VS. DATA FORGERIES

## DATA STORY



## DATA FORGERY #1



# DATA STORIES VS. DATA FORGERIES

## DATA STORY



## DATA FORGERY #2



# DATA STORIES VS. DATA FORGERIES

## DATA STORY



## DATA FORGERY #3



# FOCUS ON DATA STORIES, AVOID FORGERIES



**DATA STORY**



**DATA CUT**



**DATA CAMEO**



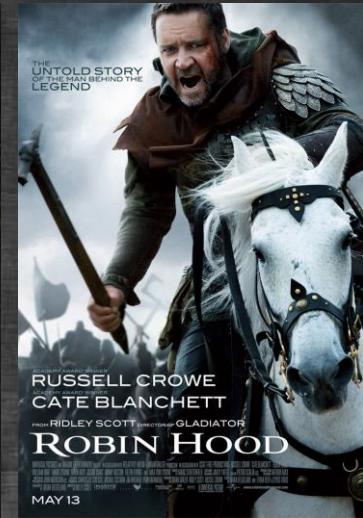
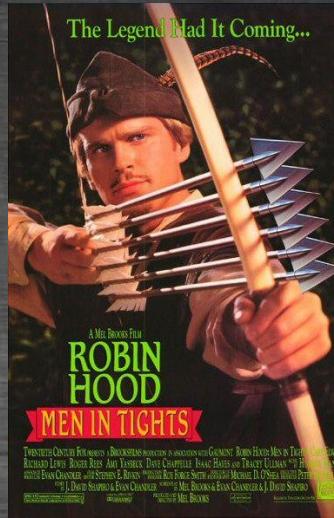
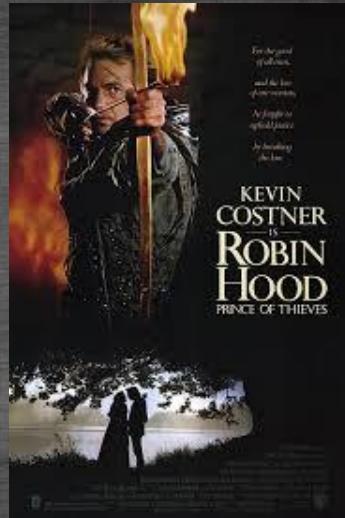
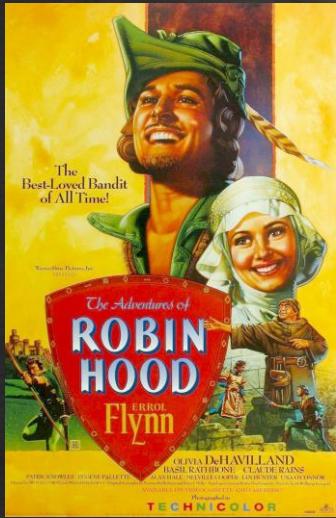
**DATA DECORATION**



# NARRATIVE: STRUCTURE OF YOUR DATA STORY



# MATCH THE NARRATIVE TO THE AUDIENCE



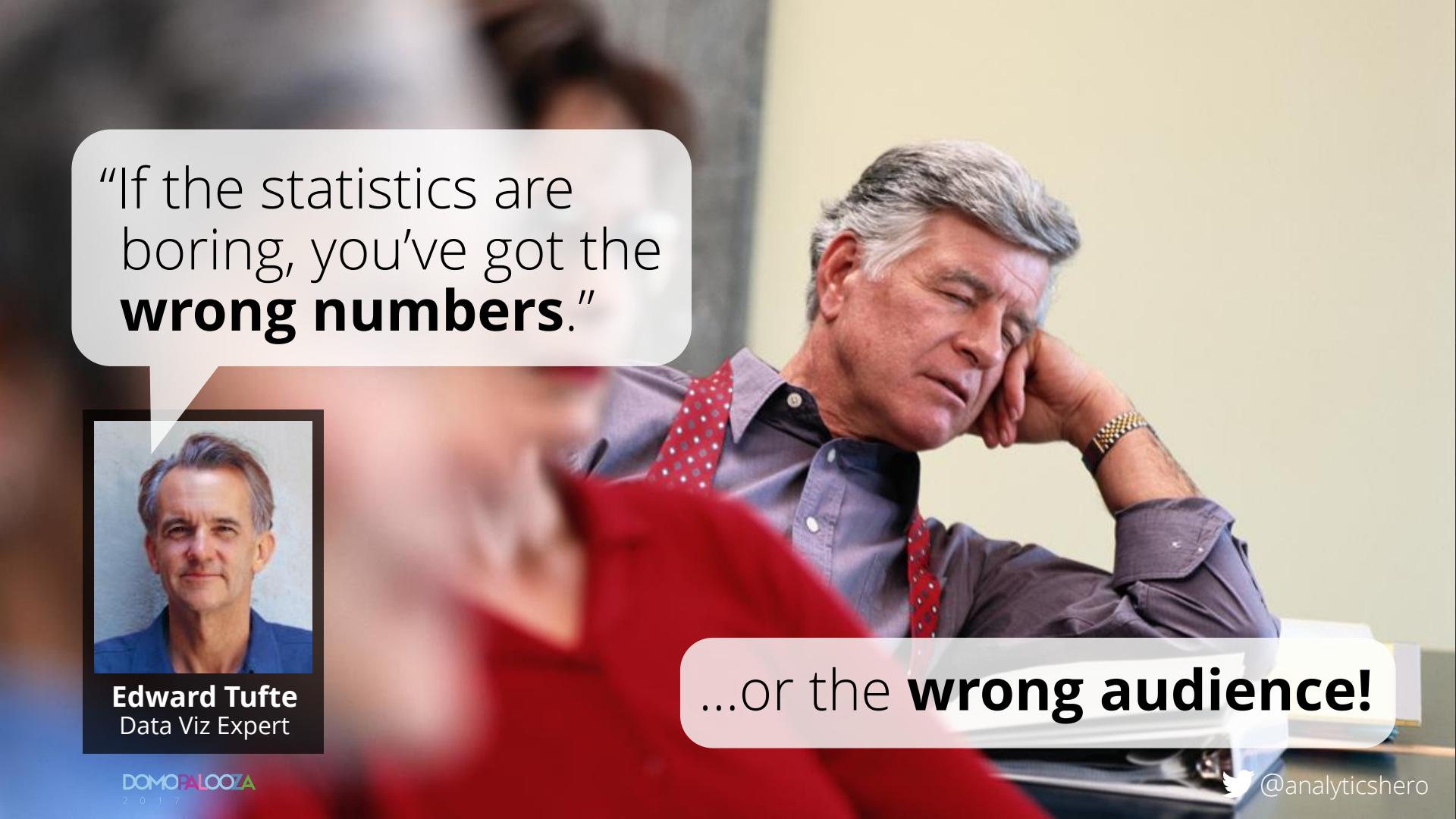
Who is the **right audience** for my data story?

How do I **adjust my data story** to my audience?



How well do you know  
your audience?

- Goals & priorities?
- Beliefs & preferences?
- Specific expectations?
- Topic familiarity?
- Data savvy?
- Seniority level?
- Audience mix?



"If the statistics are  
boring, you've got the  
**wrong numbers.**"



**Edward Tufte**  
Data Viz Expert

...or the **wrong audience!**

# TURNING YOUR FINDINGS INTO A STORY



Gustav Freytag  
(1816-1895)

## Data Storytelling Arc

### Set-up

Background on current situation, character(s), and the hook



### Rising Insights

Share findings that reveal deeper insights into the problem or opportunity



Middle

→

End



### Aha Moment

Present major finding or key insight



### Solution & Next Steps

Share recommendations and discuss next steps



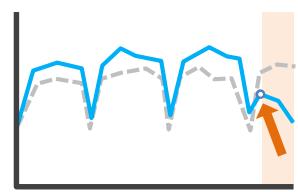
Audience's insights into the business are expanded



# DATA STORYTELLING ARC IN ACTION



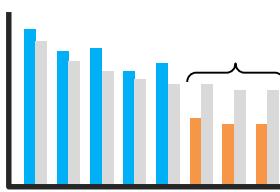
## Set-up & Hook



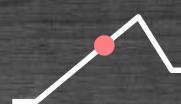
What is status quo? What unexpectedly changed?



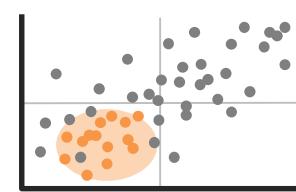
## Rising Insight #1



What influenced or contributed to the change?



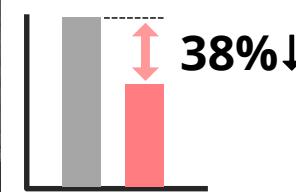
## Rising Insight #2



What other supporting evidence is needed or helpful?



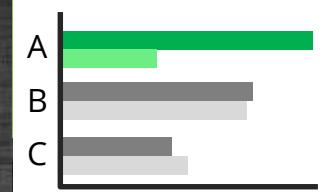
## Aha Moment



What is the impact if nothing changes?



## Solution & Next Steps



What are the options? What is the best course of action?

A photograph of four young children dressed as superheroes, standing outdoors in a park-like setting. A central boy in a green costume with a white shield on his chest is looking directly at the camera. To his left, a girl in a yellow and white costume is pointing towards the viewer. Behind him, a boy in a blue costume with a lightning bolt on his chest is laughing. To the right, a girl in a pink costume with a bow tie is smiling. They are all wearing masks and capes.

# DATA STORIES HAVE HEROES TOO

# UNCOVER THE HEROES IN YOUR DATA STORY

1

Determine which user segment matters to your story



2

Build a rich, data-driven profile of your hero



3

Give your hero an identity



Stock photos



4

Give your hero a voice



Qualitative data



5

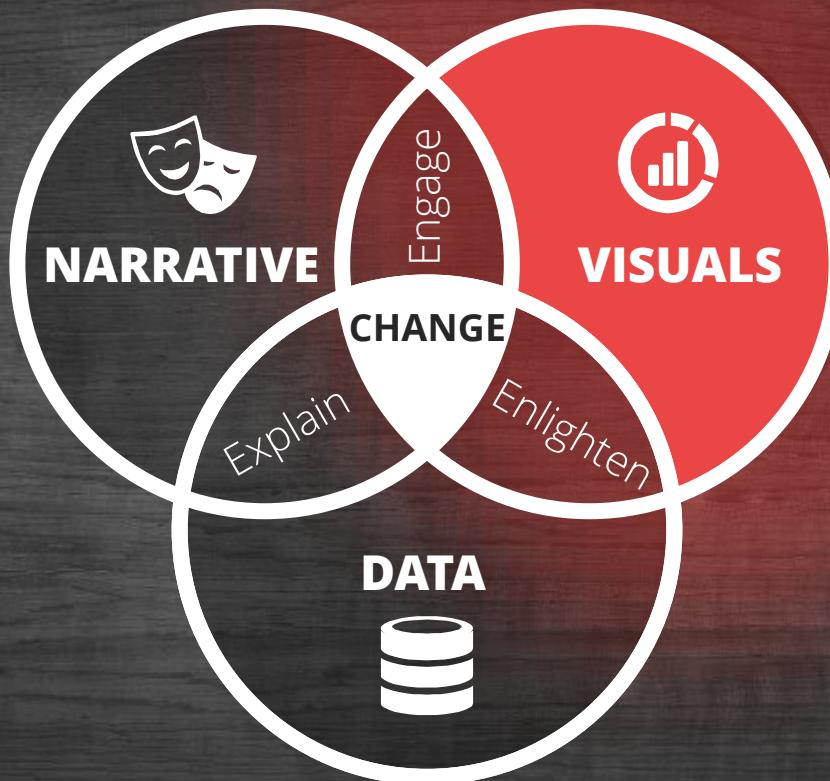
Show their journey



Screenshots



# VISUALS: SCENES OF YOUR DATA STORY

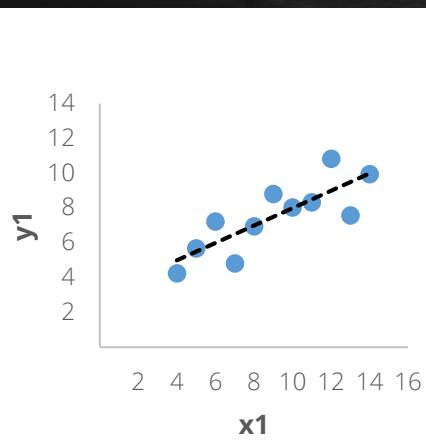


# WHAT PATTERNS DO YOU SEE?

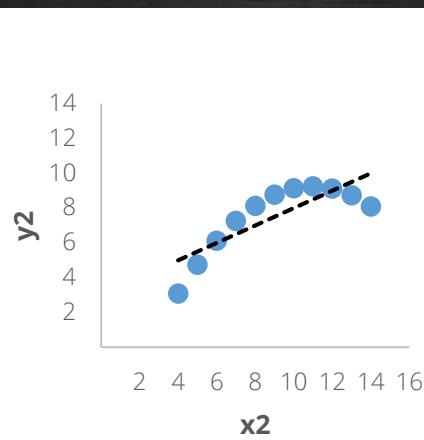
I		II		III		IV	
x	y	x	y	x	y	x	y
10	8.04	10	9.14	10	7.46	8	6.58
8	6.95	8	8.14	8	6.77	8	5.76
13	7.58	13	8.74	13	12.74	8	7.71
9	8.81	9	8.77	9	7.11	8	8.84
11	8.33	11	9.26	11	7.81	8	8.47
14	9.96	14	8.1	14	8.84	8	7.04
6	7.24	6	6.13	6	6.08	8	5.25
4	4.26	4	3.1	4	5.39	19	12.5
12	10.84	12	9.13	12	8.15	8	5.56
7	4.82	7	7.26	7	6.42	8	7.91
5	5.68	5	4.74	5	5.73	8	6.89

# ANSCOMBE'S QUARTET IN ACTION

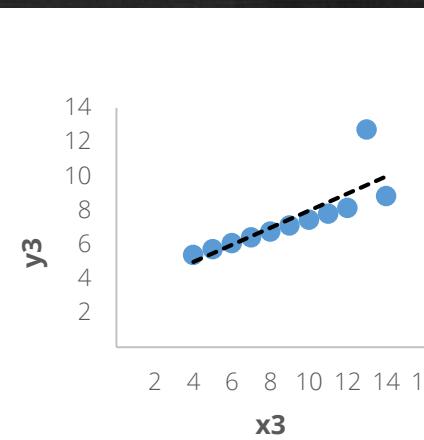
I



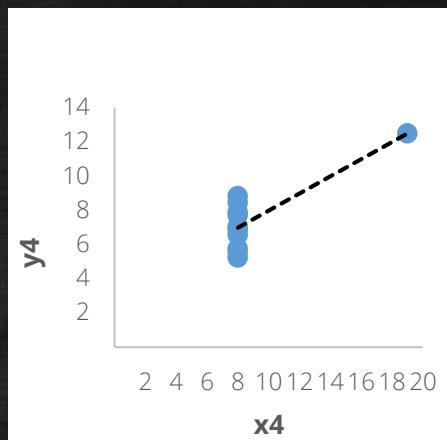
II



III



IV





**Product A** → **Product B**  
**Time Period X** → **Time Period Y**  
**Segment 1** → **Segment 2**

**Data storytelling is mostly about comparisons.**

# 5 STEPS FOR BETTER VISUAL STORYTELLING

1

Identify the right data

# ALIGN YOUR DATA TO YOUR MESSAGE

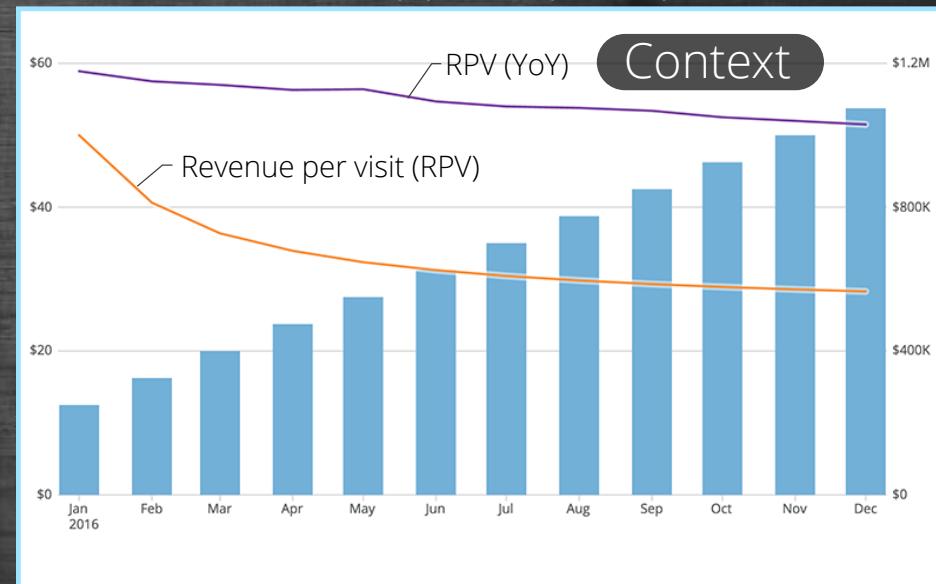
## Mistake:

Use convenient but less effective data to convey a key point.



## Tip:

Carefully choose the data that best illustrates and supports your point.



# 5 STEPS FOR BETTER VISUAL STORYTELLING

1

Identify the right data

2

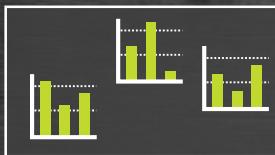
Choose the right visualizations



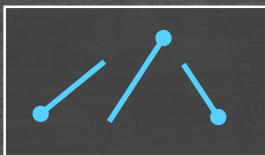
@analyticshero

# GRAPHICAL METHODS VARY IN EFFECTIVENESS

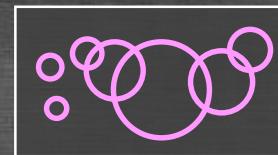
2D position along  
common but  
unaligned scales



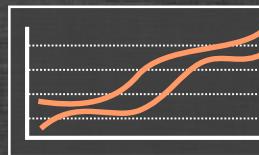
Direction



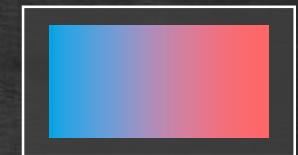
Area



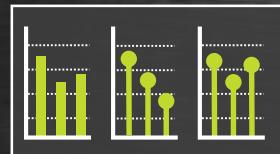
Curvature



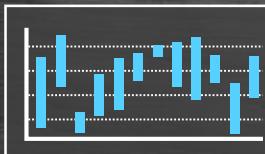
Color Hue



2D position along  
common, aligned  
scale



Length



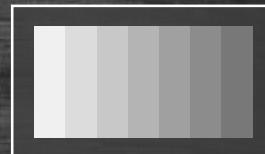
Angle



Volume



Shading



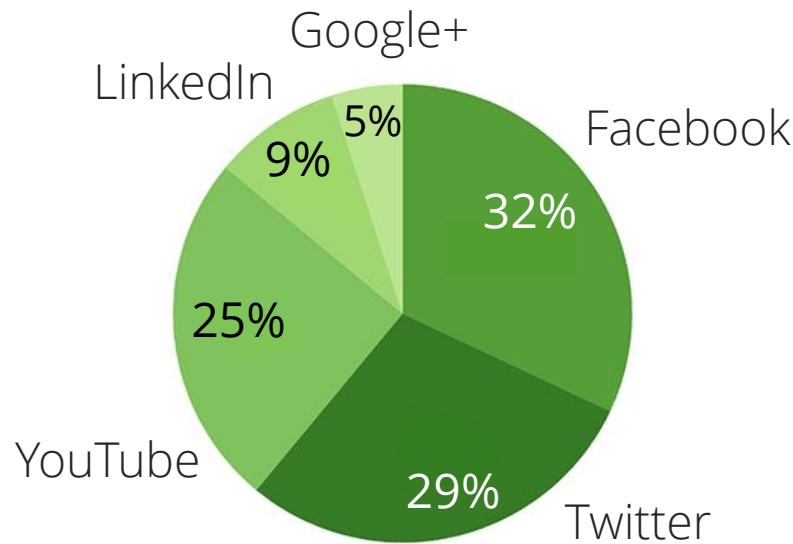
More accurate  
comparisons

More generic  
comparisons

# ALL CHARTS ARE NOT CREATED EQUAL

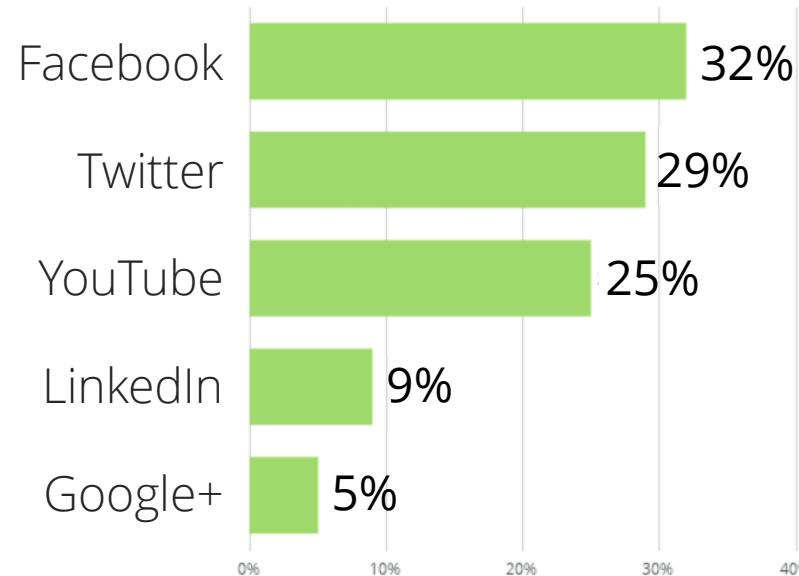
## Mistake:

Pie charts are generally less effective for comparisons.



## Tip:

Bar charts don't necessarily need value labels to convey differences.



# 5 STEPS FOR BETTER VISUAL STORYTELLING

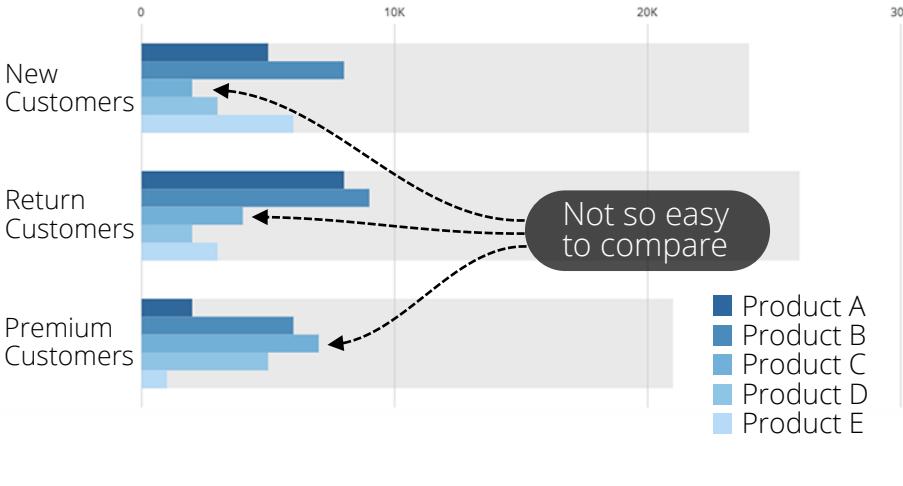
- 1 Identify the right data
- 2 Choose the right visualizations
- 3 Calibrate visuals to your message

# ANTICIPATE YOUR AUDIENCE'S COMPARISON NEEDS

## Mistake:

Don't force your audience to make awkward comparisons.

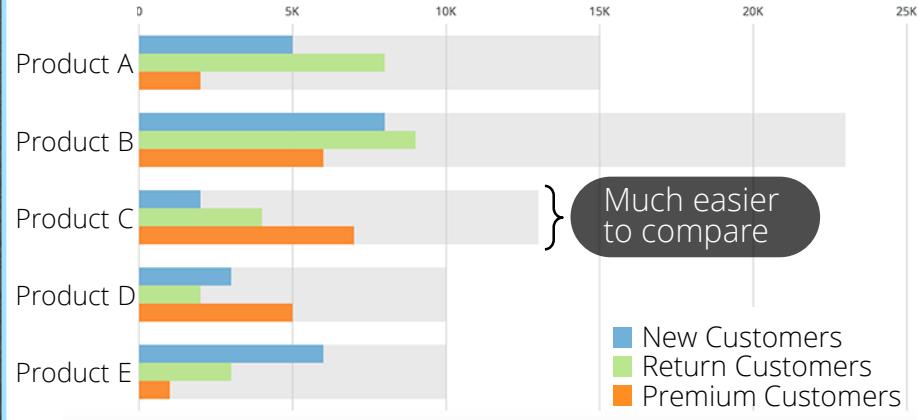
Orders



## Tip:

Ensure your visuals easily support the comparisons they're expected to make.

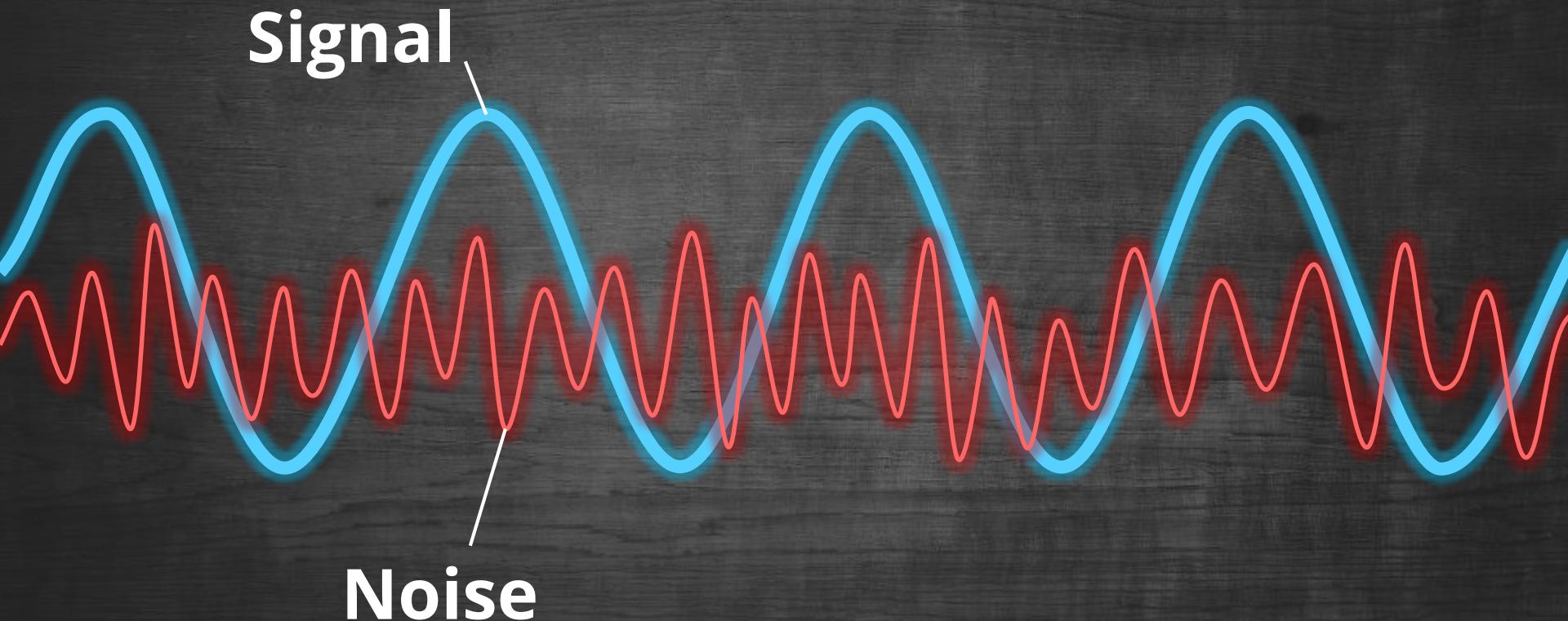
Orders



# 5 STEPS FOR BETTER VISUAL STORYTELLING

- 1 Identify the right data
- 2 Choose the right visualizations
- 3 Calibrate visuals to your message
- 4 Remove unnecessary noise

# STRENGTHEN SIGNAL BY REMOVING NOISE

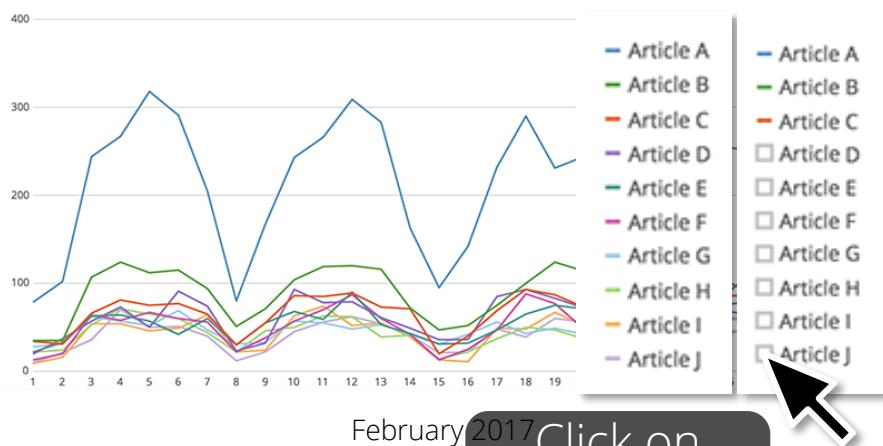


# DON'T OVERWHELM YOUR AUDIENCE NEEDLESSLY

## Mistake:

Don't include unnecessary detail such as multiple values in a line chart.

Page Views



## Tip:

Try to limit the number of lines to no more than four.

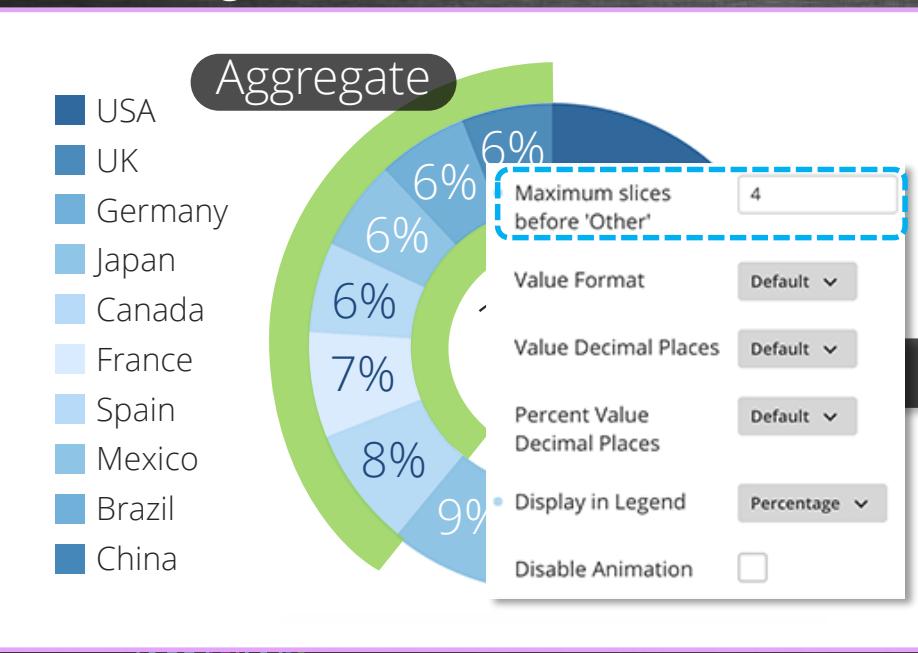
Page Views



# DON'T OVERWHELM YOUR AUDIENCE NEEDLESSLY

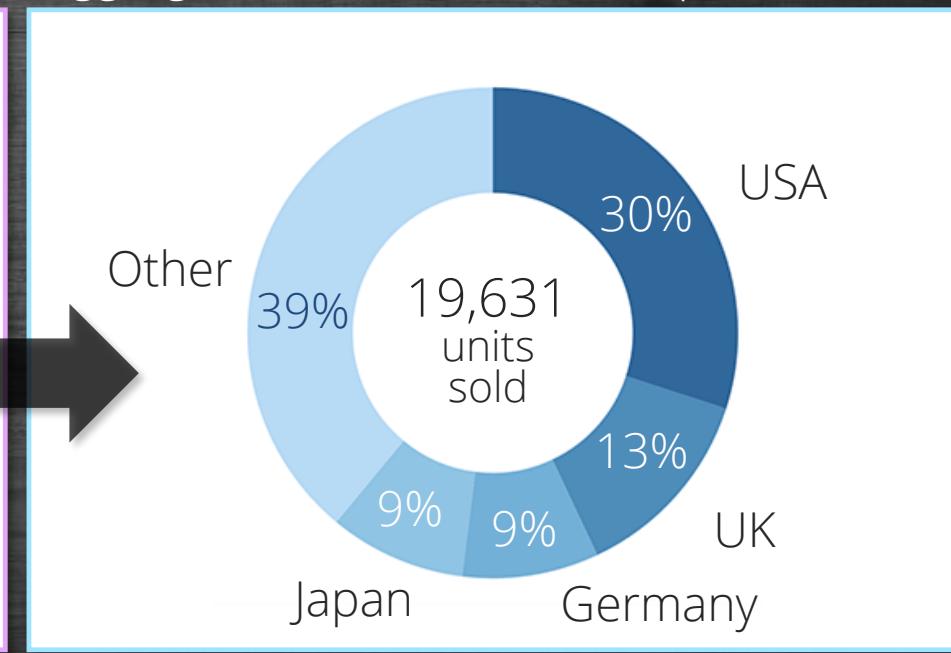
## Mistake:

Donut and pie charts with a high number of slices generate noise.



## Tip:

Avoid using more than five slices and aggregate lower values when possible.



# 5 STEPS FOR BETTER VISUAL STORYTELLING

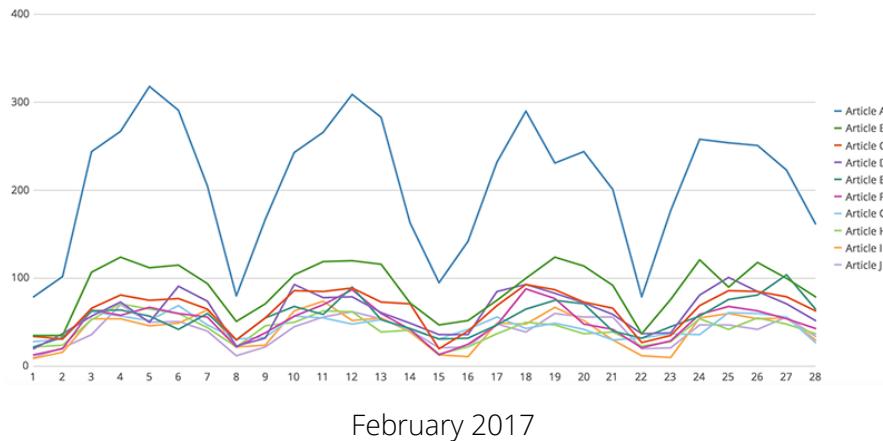
- 1 Identify the right data
- 2 Choose the right visualizations
- 3 Calibrate visuals to your message
- 4 Remove unnecessary noise
- 5 Focus attention on what's important

# HIGHLIGHT WHAT MATTERS WITH COLOR

## Mistake:

Choose not to use colors strategically.

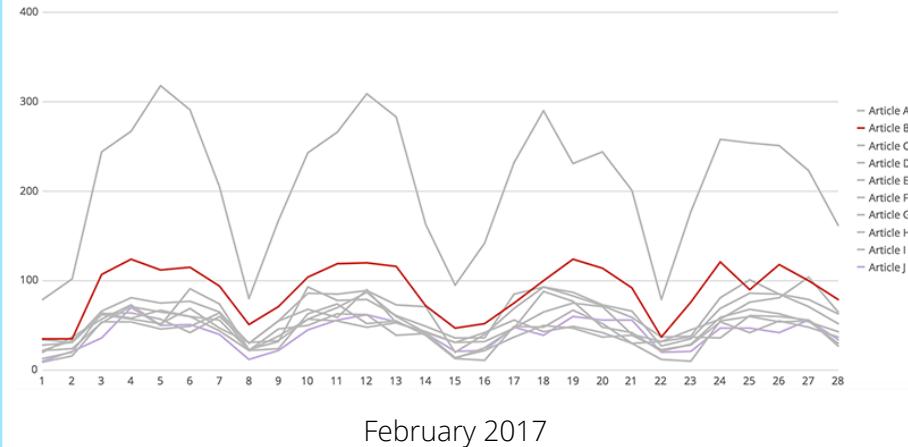
Page Views



## Tip:

Use color to draw attention to your focus area while still providing context.

Page Views

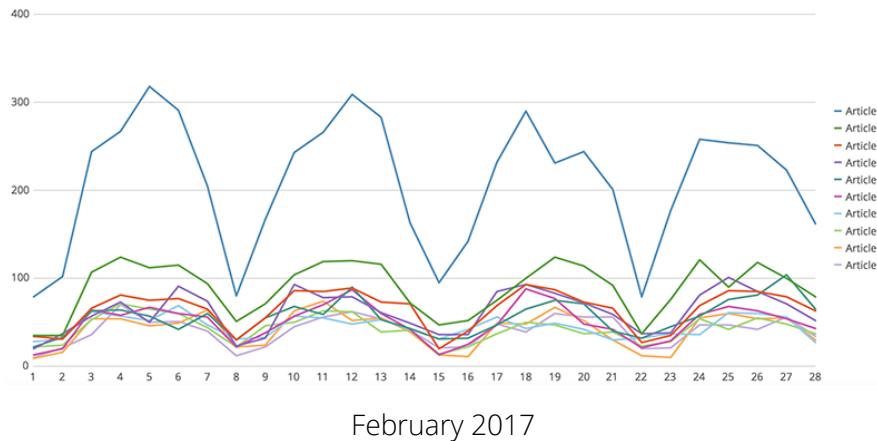


# HIGHLIGHT WHAT MATTERS WITH COLOR

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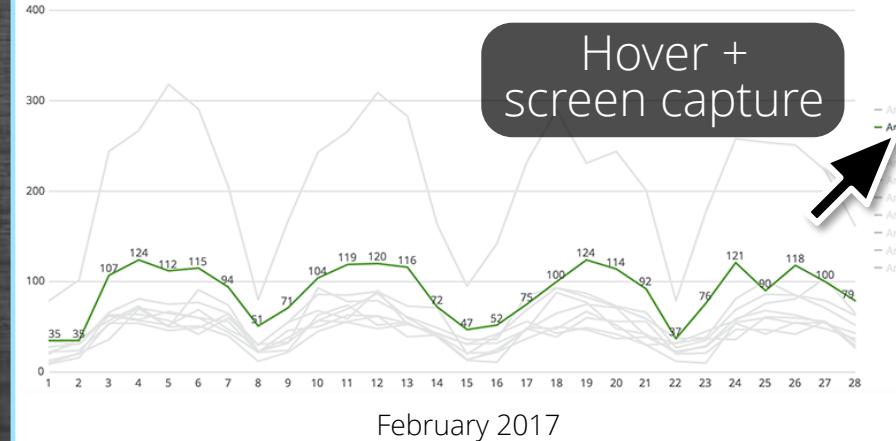
Page Views



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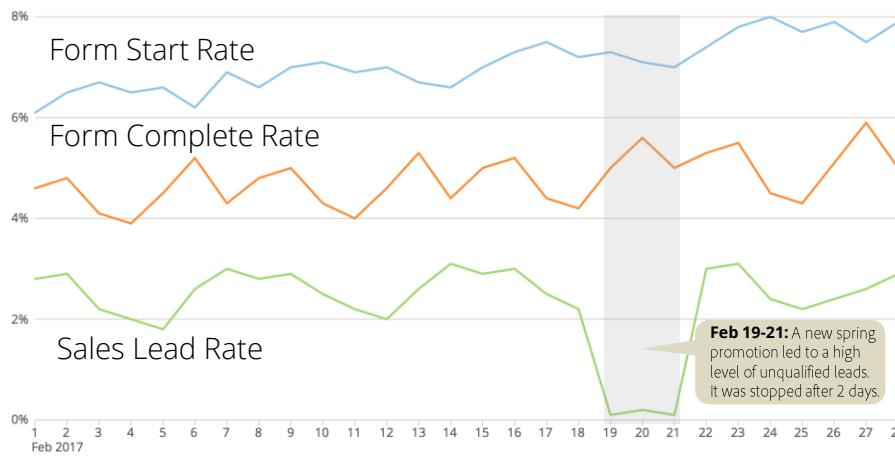
Page Views



# USE CONTENT STAGING TO REVEAL INSIGHTS

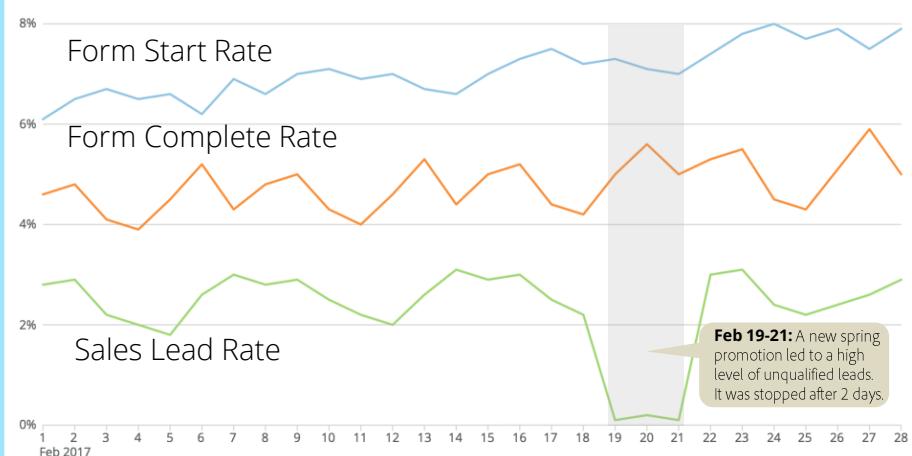
## Mistake:

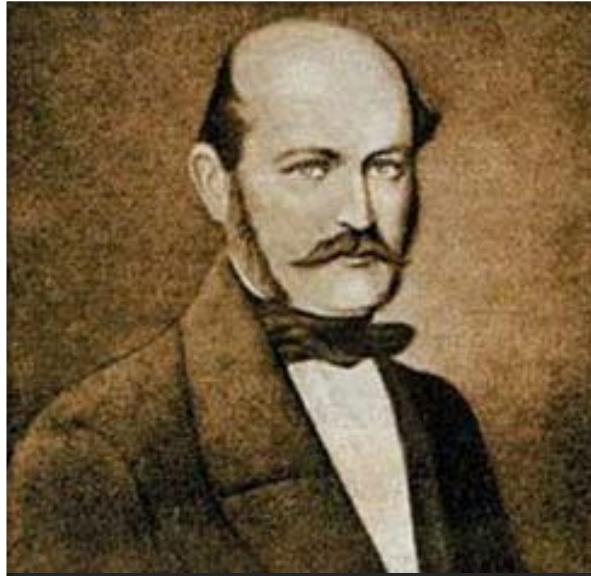
Provide too much content at one time within a single chart or multiple charts.



## Tip:

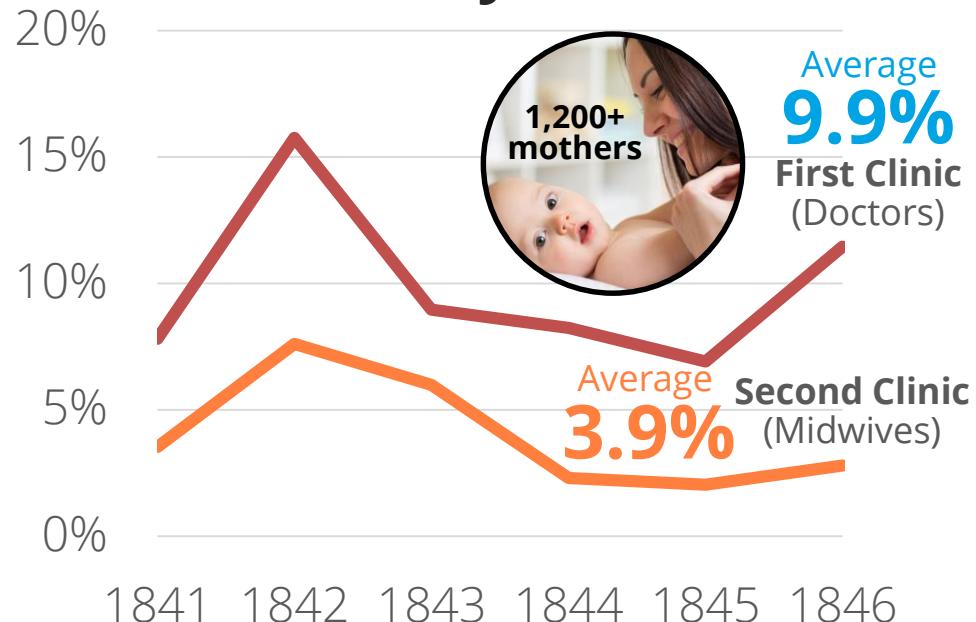
Use animations to break up the content into manageable portions.





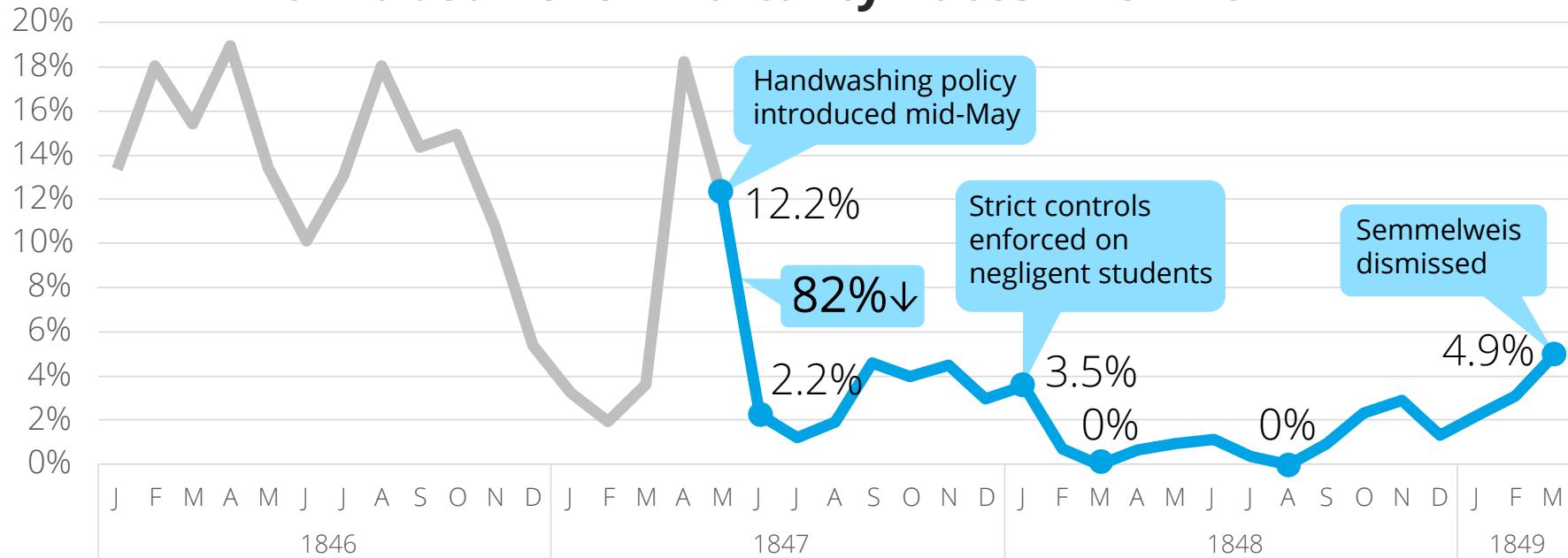
Ignaz Semmelweis  
“Savior of Mothers”  
1818-1865

## Childbed Fever Mortality Rates



# SEMMELWEIS'S IMPACT ON MORTALITY RATES

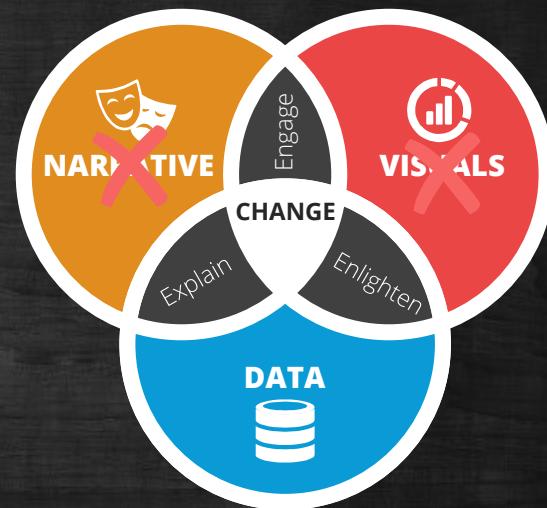
## Childbed Fever Mortality Rates in Clinic #1



# WHY WASN'T HE SUCCESSFUL?



- Accurate
- Valuable
- Actionable
- Adopted





**“Those who tell  
the stories rule  
the world.”**

Hopi Indian Proverb

# **THANK YOU.**

## QUESTIONS & ANSWERS?



@analyticshero