



STORYTELLING

KIRELL BENZI, PH.D.

Value of storytelling

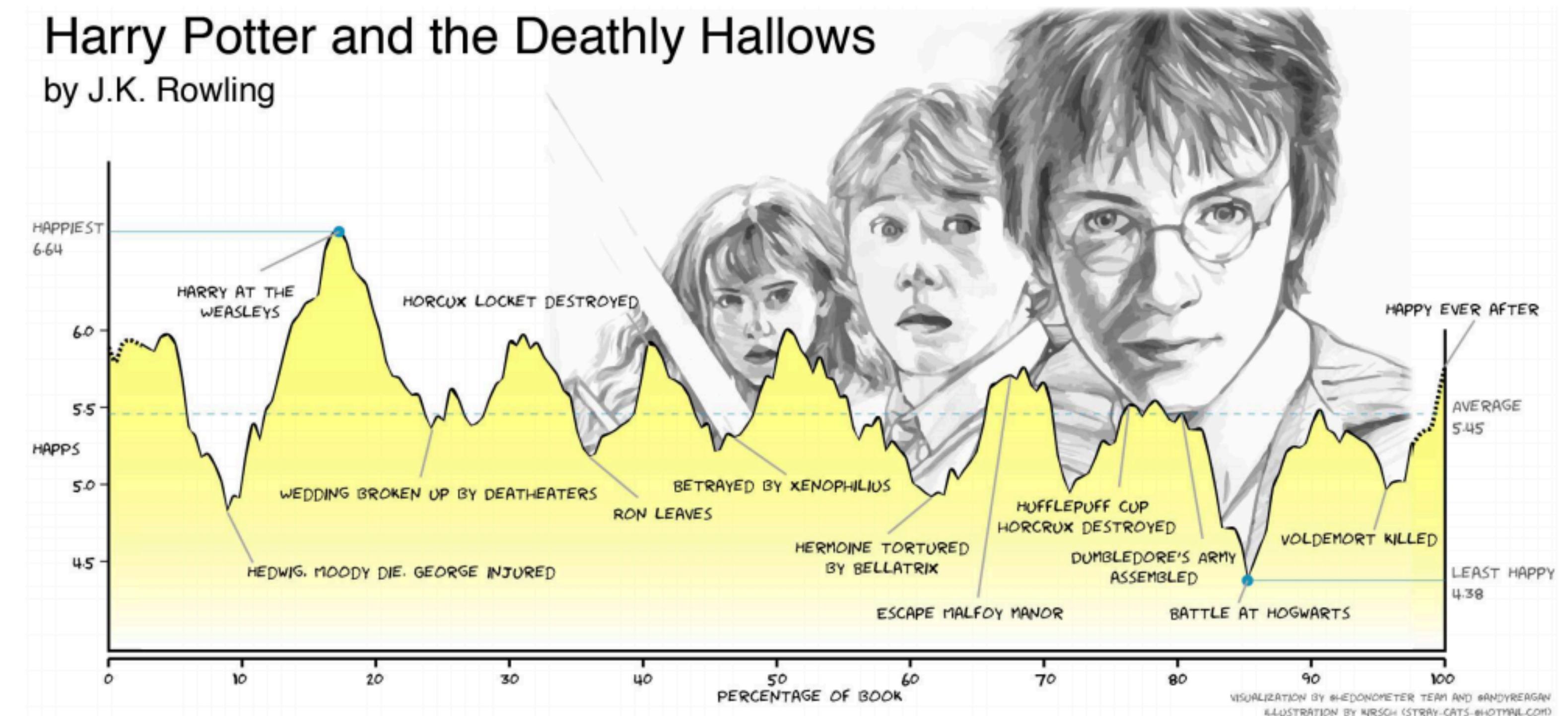
In a data viz, storytelling helps to:

- Explore
- Discover
- Develop cognition / extract value



Why stories?

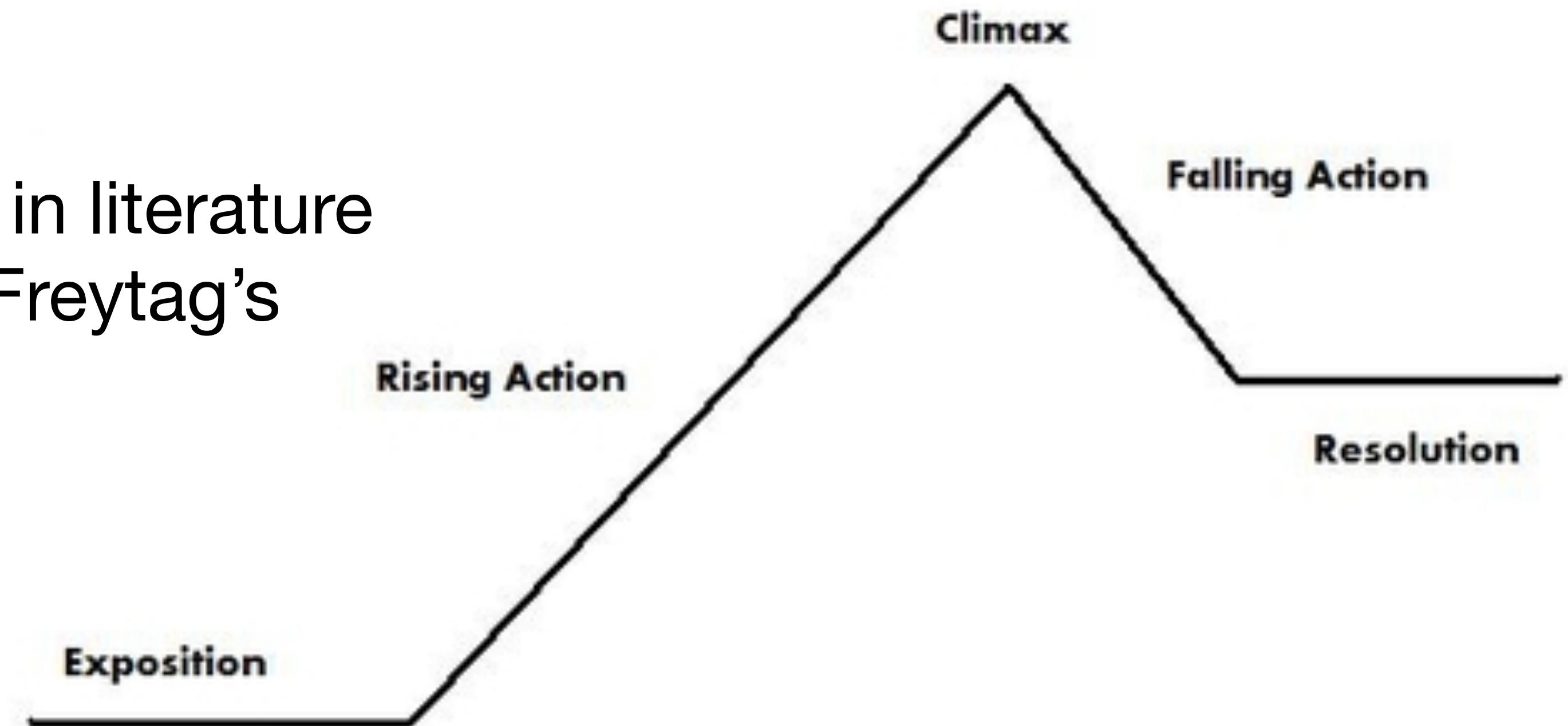
- Stories are emotional
- Stories are memorable
- Stories are impactful



[Reagan et al.]

Narrative

- The art of narrating, or of telling a story
- Different narrative structures are used depending on the medium
- The most common structure in literature follow a modified version of Freytag's pyramid





Jamie Foxx on Playing Mike Tyson

Story with data?

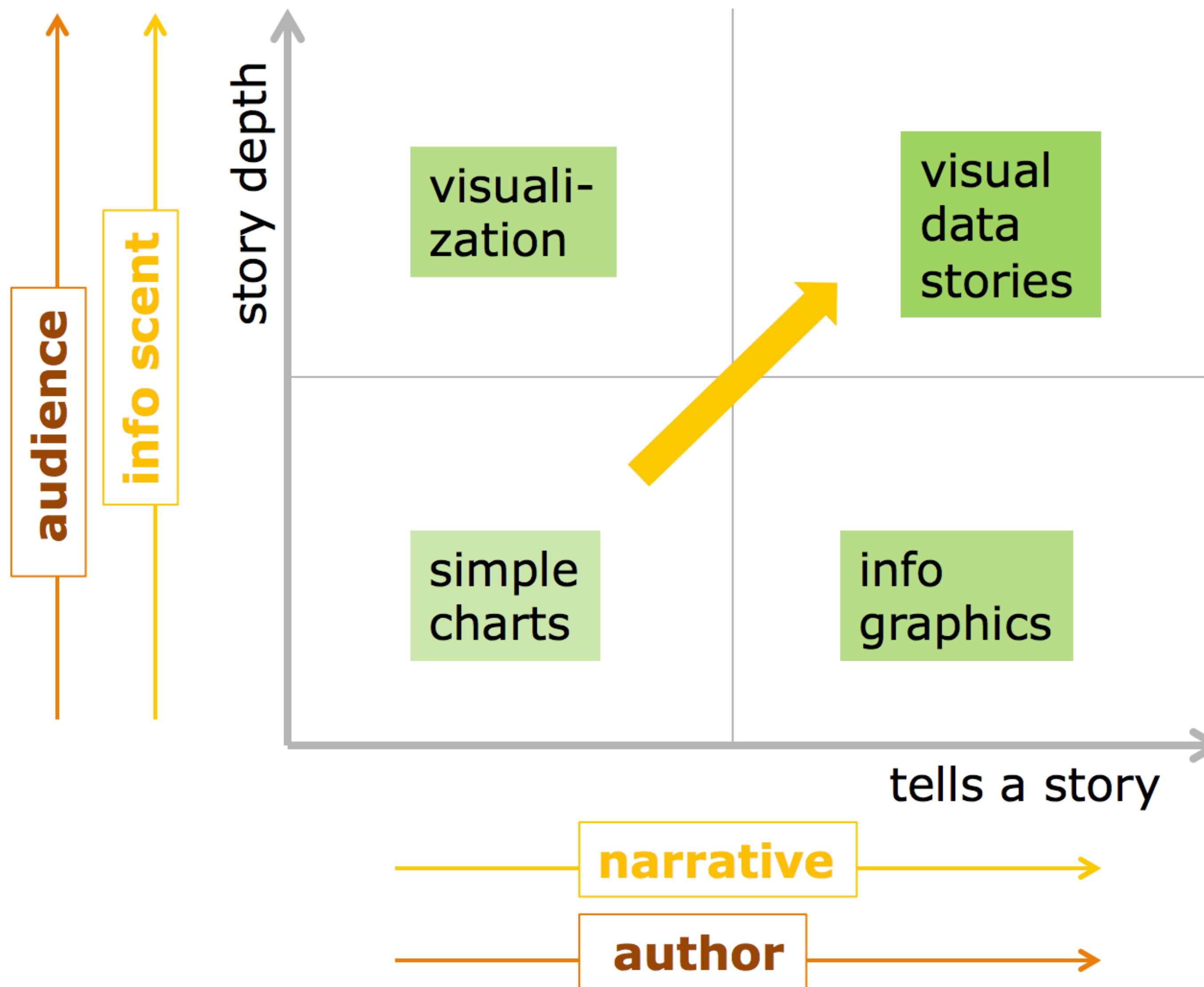
In essence, a story is built on a ordered sequence of steps

text, images, visualizations, video

Our goal is to define the different paths through the steps

not necessarily linear!

Visual data stories



Two main approaches

Journalist model

Collect information (research, interviews, photos, etc.) on the subject to assemble key facts

Link together the key facts to produce a story

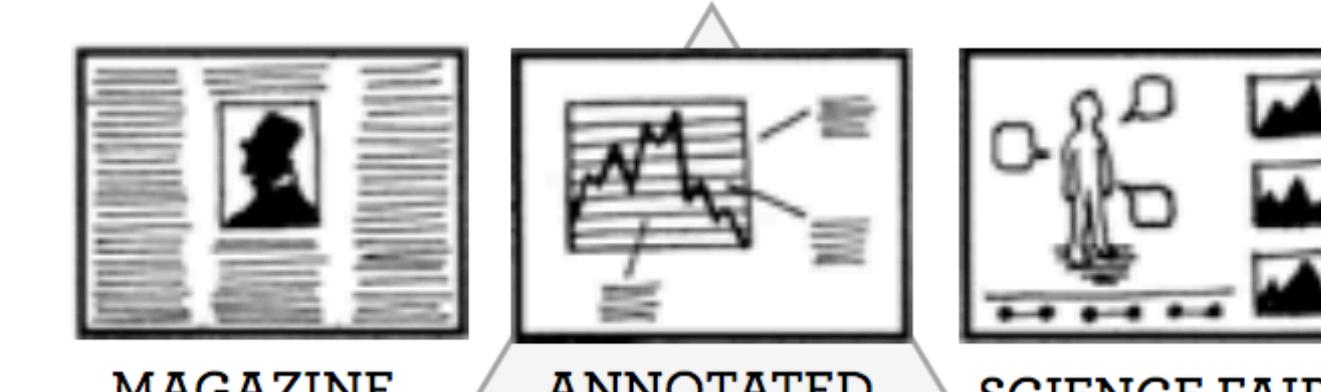
Data scientist model

Exploration and analysis via visualization

Storytelling via visualization using the results of the analysis

Narrative Visualization: Telling Stories with Data

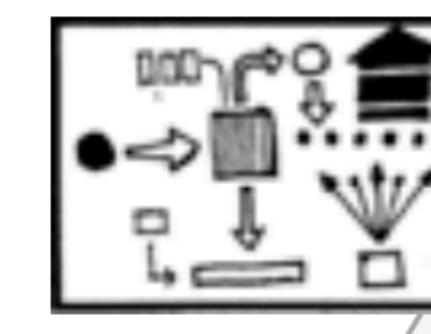
Visual Design



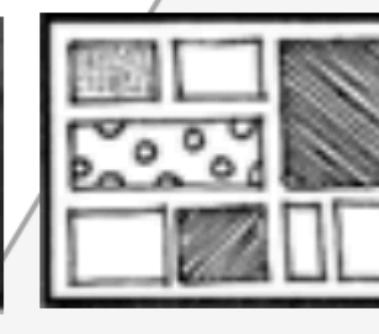
MAGAZINE
STYLE

ANNOTATED
CHART

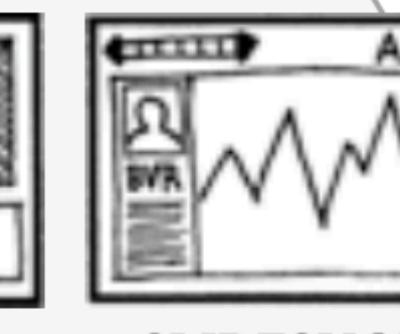
SCIENCE FAIR
POSTER



FLOWCHART



COMICSTRIP



SLIDESHOW



MOVIE

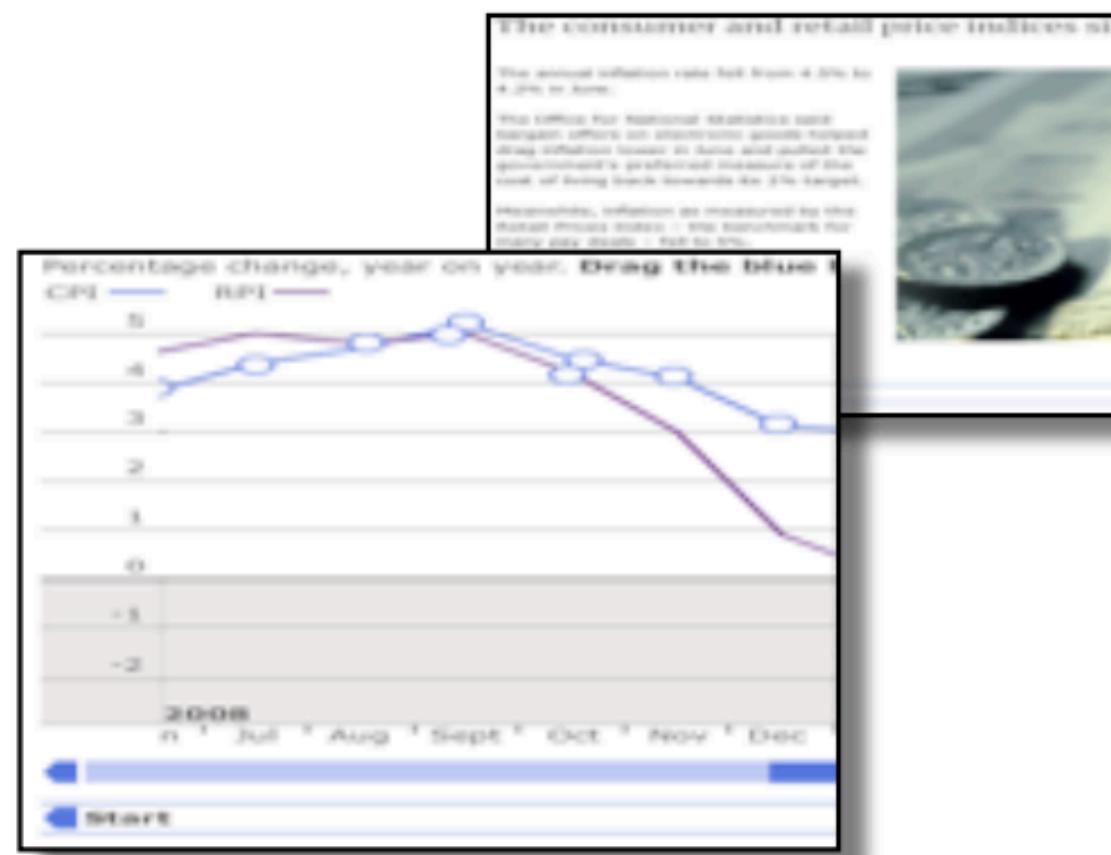


Messaging

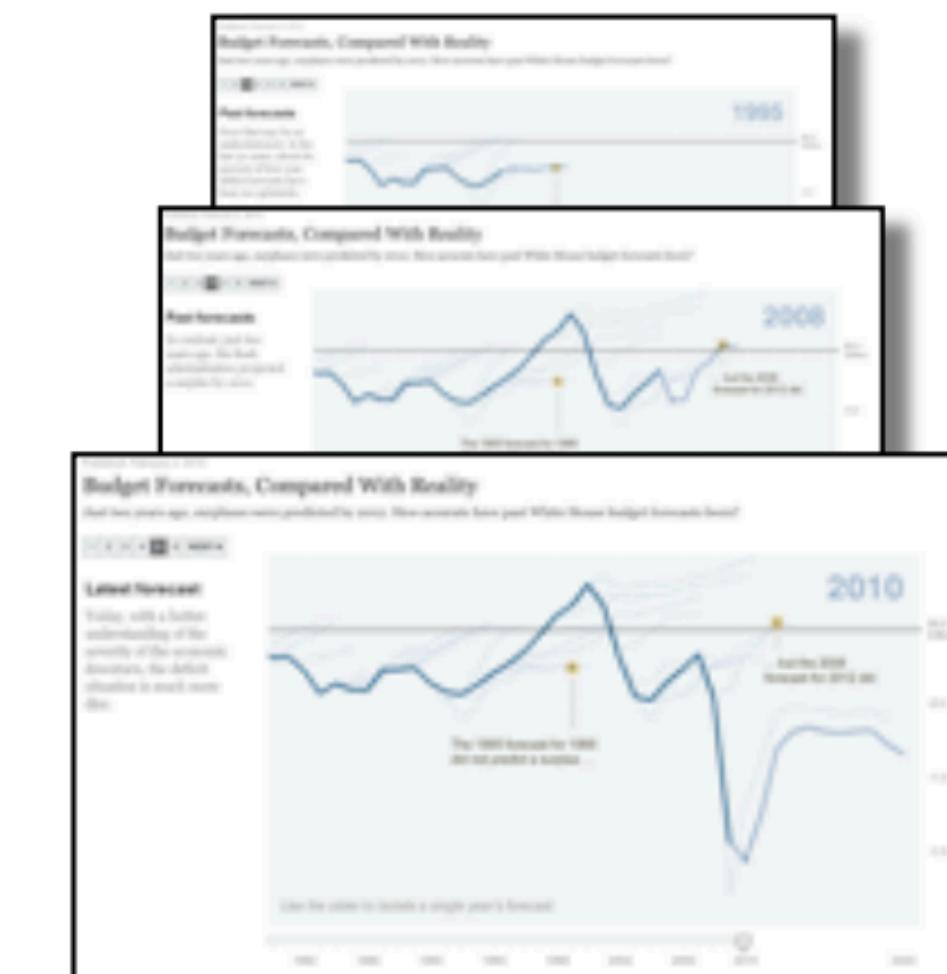
Interactivity

[Segel, Heer 2010]

Design space



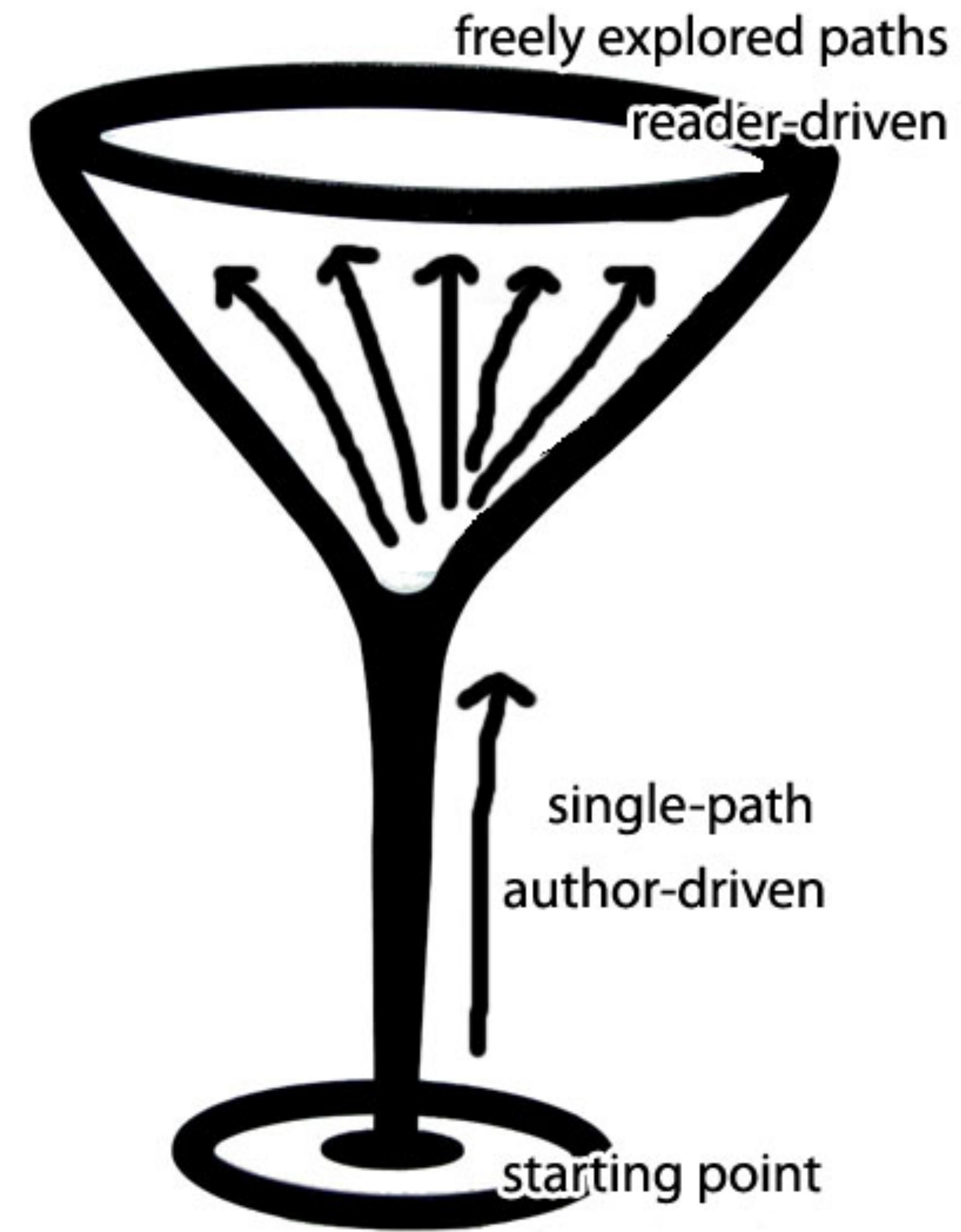
martini
glass



interactive slideshow

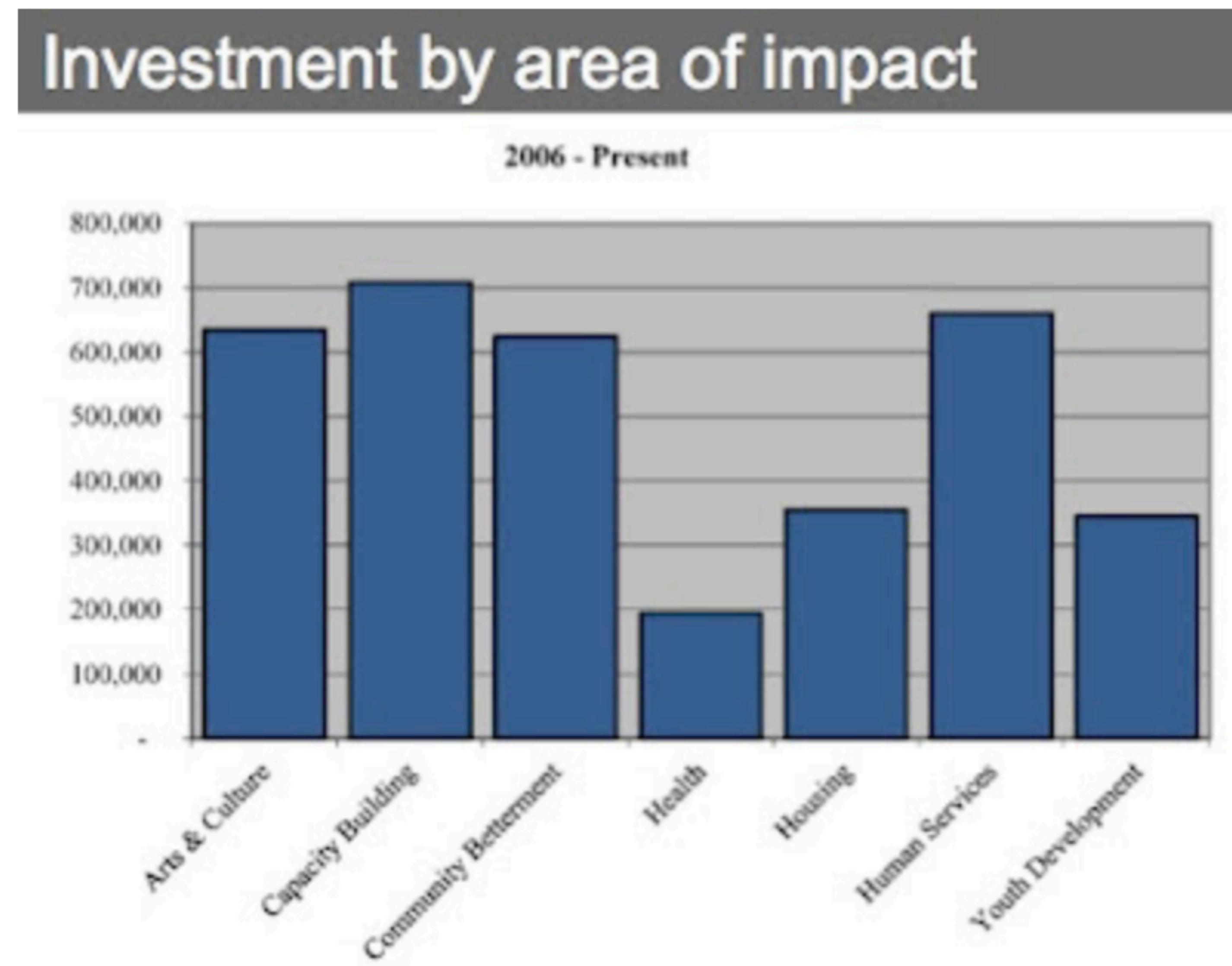


drill-down story



Add structure!

Compare this



to this?

We invest primarily in four areas

Since we began investing in 2006, **four areas have received more than \$600K each, accounting for 75% of total grantmaking activity**

Investment by Area of Impact

2006 - Present

Dollars in '000s

Capacity Building \$710

Human Services \$670

Arts & Culture \$630

Community Betterment \$620

Housing \$360

Youth Development \$340

Health \$190

Replaced the descriptive title with an active one

Added insights with text (using the preattentive attributes of bold & color to draw your attention to the important part)

Ordered the data from greatest to least

Labeled the x-axis (what was the y-axis in the original version) to make it unquestionable what you're looking at.

Eliminated unnecessary clutter

Reduced the width (or height, now that we've flipped it on its side) of the bars.

Used color strategically

A good story is structured

755



Steroids or Not, the Pursuit Is On

Barry Bonds is taking aim at the career home run record. He needs only six more to tie Babe Ruth and 47 to equal Hank Aaron.

Lines are cumulative home runs.

Hank Aaron
755 home runs
23 seasons



Babe Ruth
714 home runs
22 seasons



Barry Bonds
708 home runs
20 seasons



Bonds takes lead
Home runs
after 16 seasons

Bonds 587
Aaron 554
Ruth 516

600

400

200

0

5 seasons

10

15

20

25

30

35

40

45

50

55

60

65

70

75

80

85

90

95

100

105

110

115

120

125

130

135

140

145

150

155

160

165

170

175

180

185

190

195

200

205

210

215

220

225

230

235

240

245

250

255

260

265

270

275

280

285

290

295

300

305

310

315

320

325

330

335

340

345

350

355

360

365

370

375

380

385

390

395

400

405

410

415

420

425

430

435

440

445

450

455

460

465

470

475

480

485

490

495

500

505

510

515

520

525

530

535

540

545

550

555

560

565

570

575

580

585

590

595

600

605

610

615

620

625

630

635

640

645

650

660

670

680

690

700

710

720

730

740

750

755

760

765

770

775

780

785

790

795

800

805

810

815

820

825

830

835

840

845

850

855

860

865

870

875

880

885

890

895

900

905

910

915

920

925

930

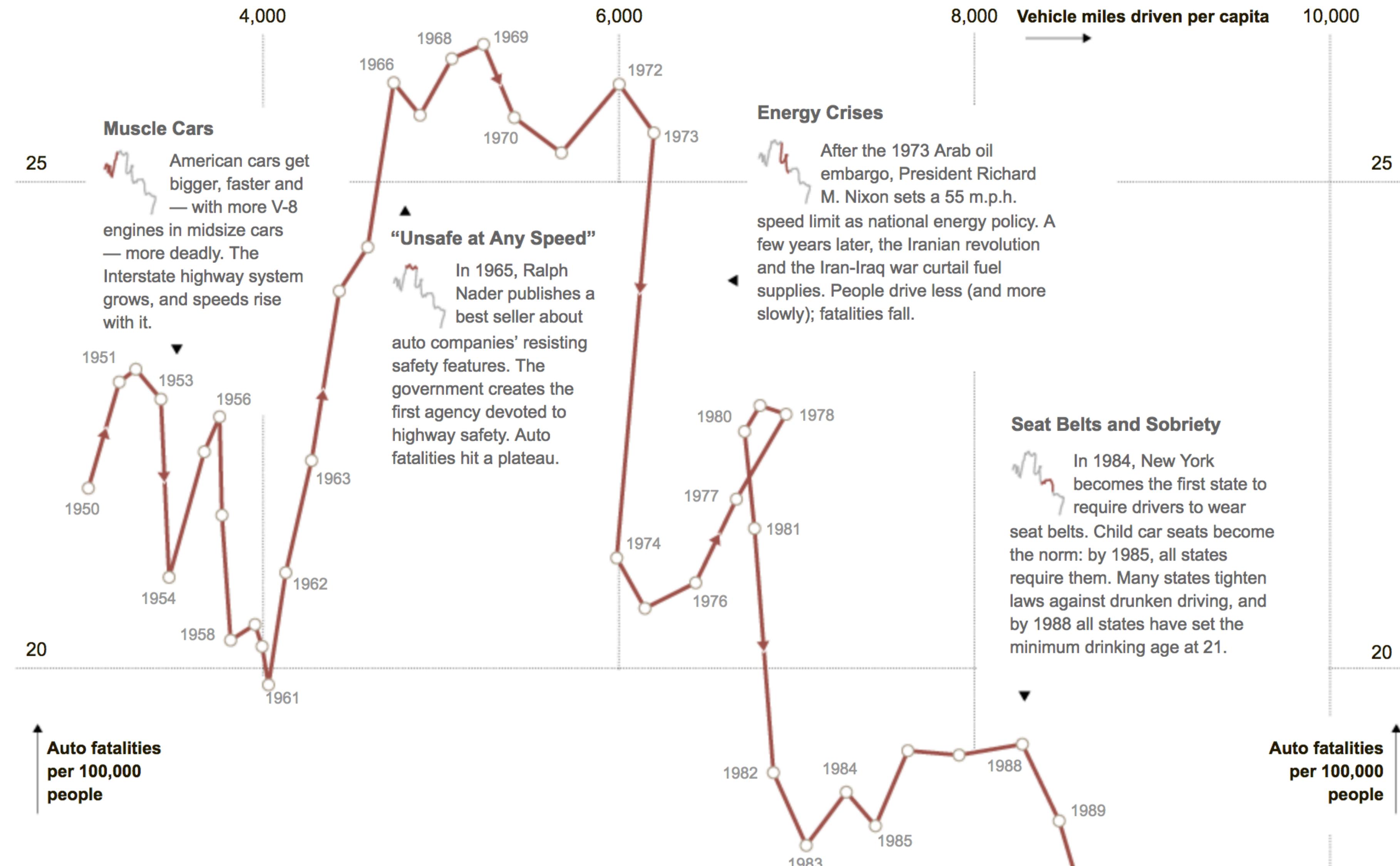
935

940

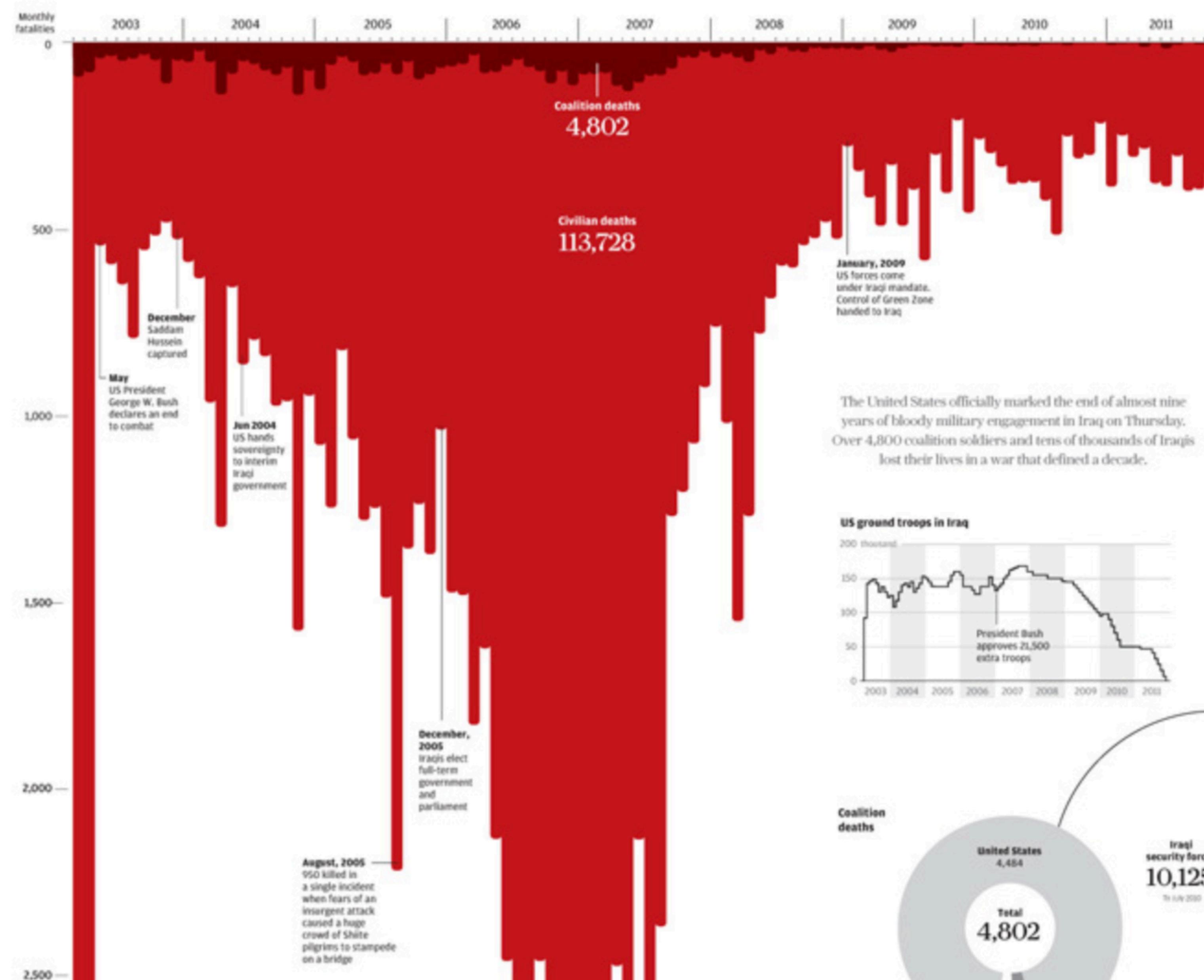
945

950

Connected scatterplot



Iraq's bloody toll

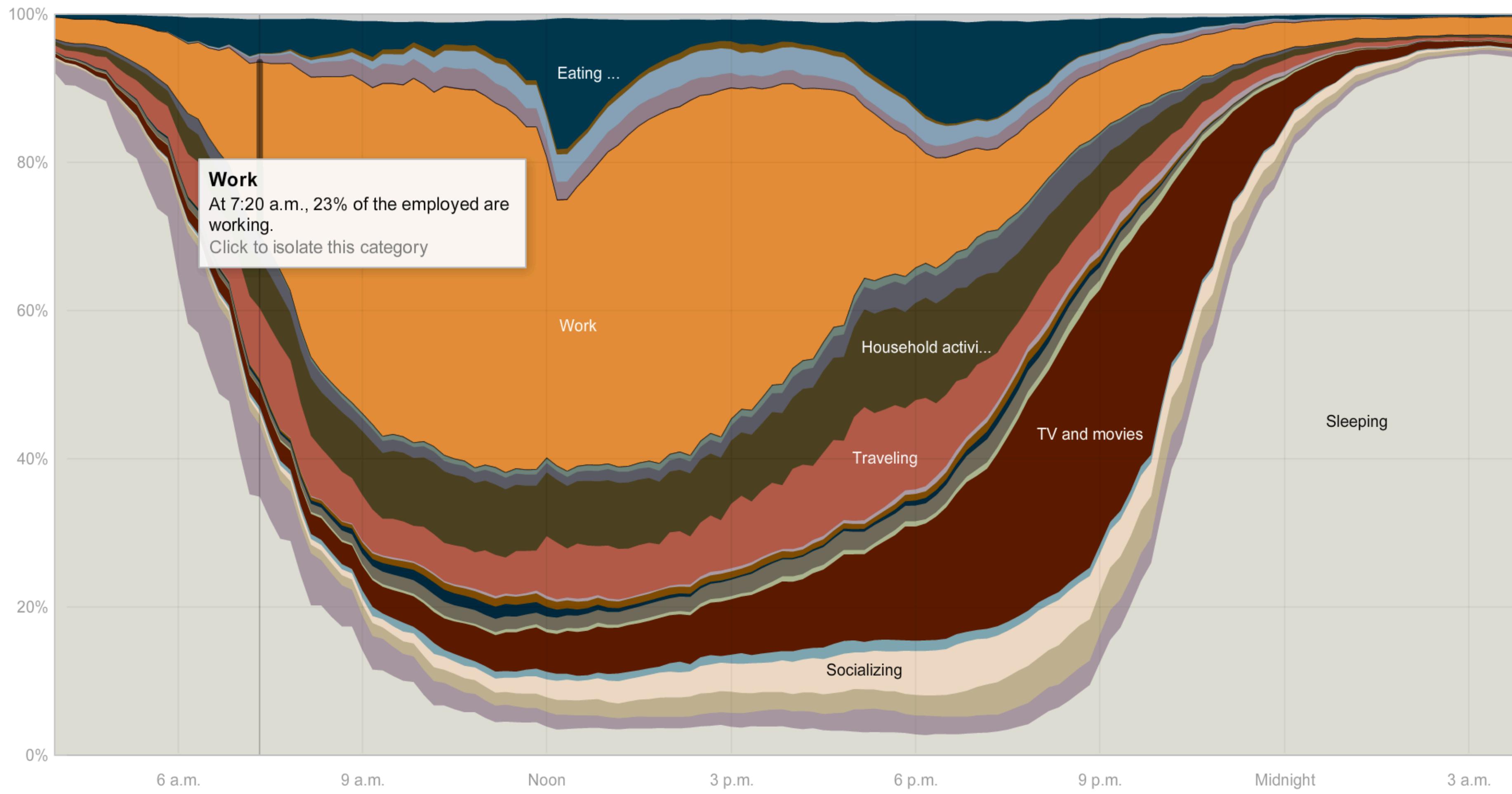


How Different Groups Spend Their Day?

The employed

At 6 a.m., about 60 percent of employed people are sleeping, compared with more than 80 percent of those who are unemployed.

Everyone	Employed	White	Age 15-24	H.S. grads	No children
Men	Unemployed	Black	Age 25-64	Bachelor's	One child
Women	Not in lab...	Hispanic	Age 65+	Advanced	Two+ children



Focus attention

Drones strikes



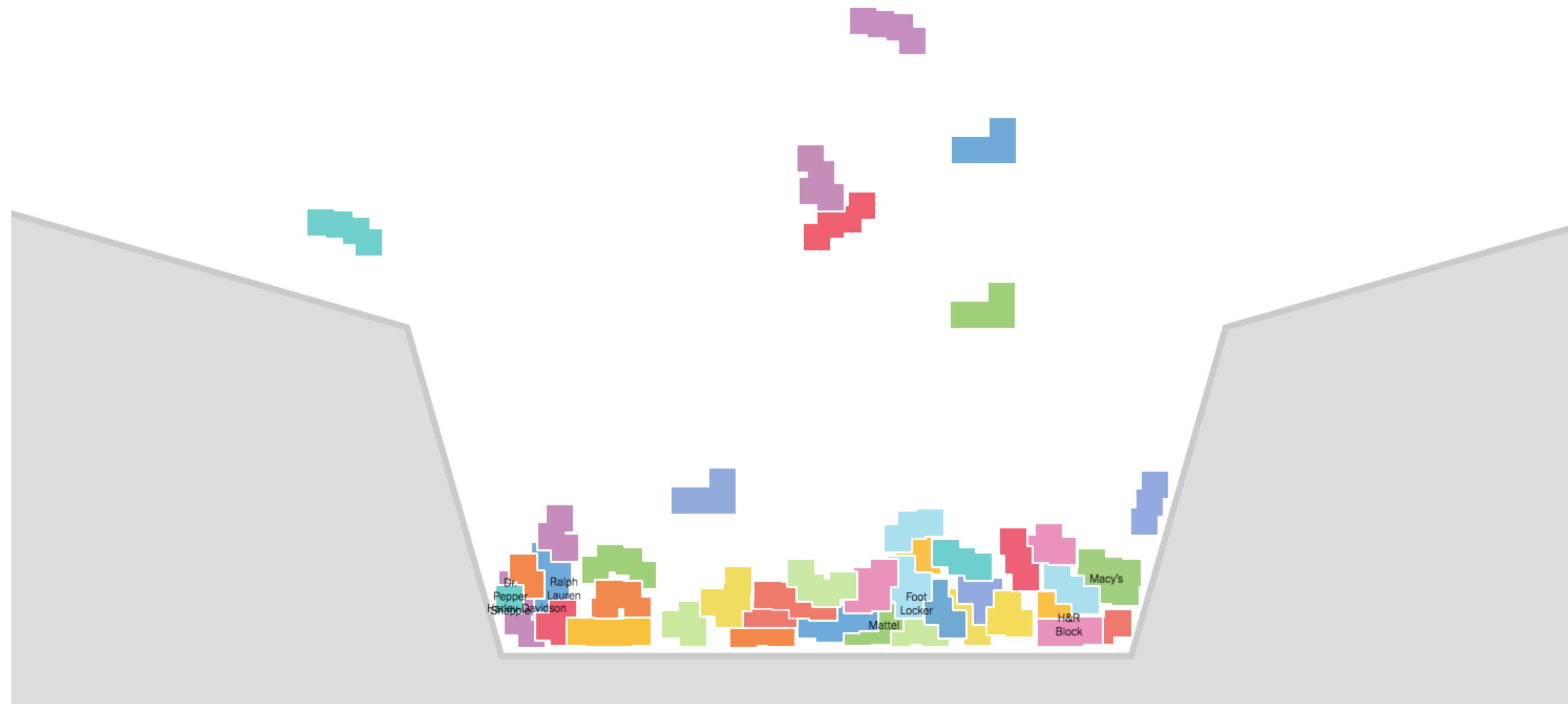


\$31.9 Billion



S

Now let's add 108 of the other smallest S.&P. 500 companies.



Gapminder

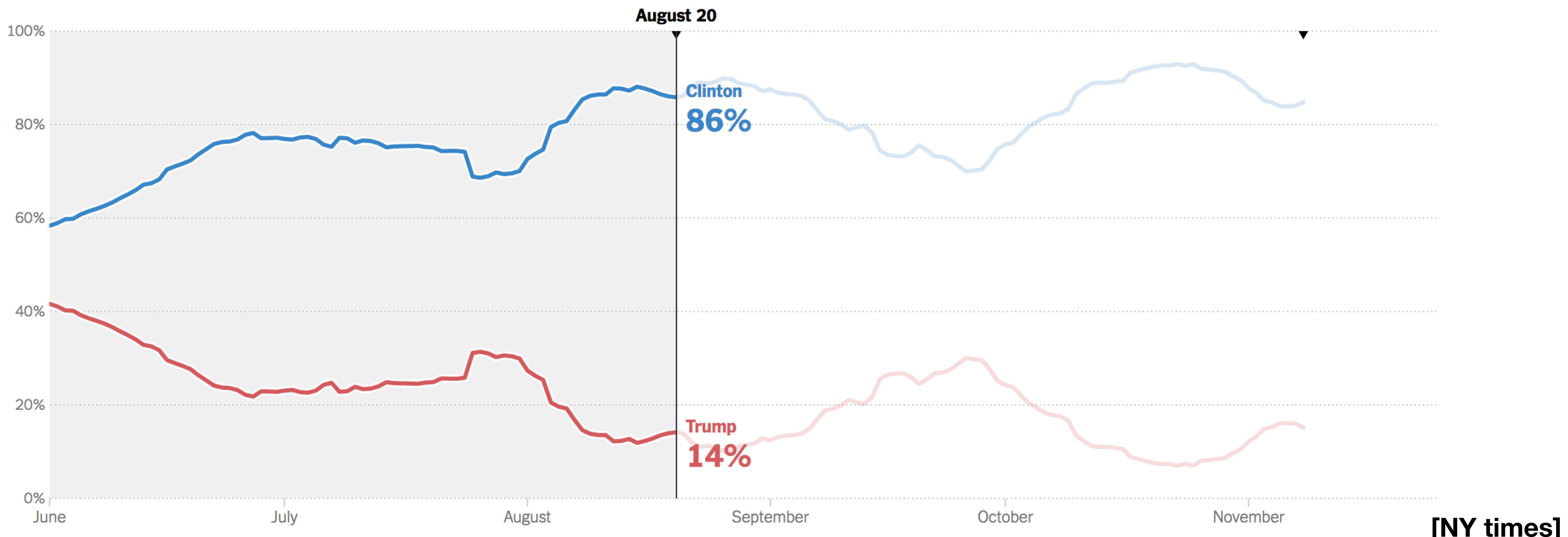


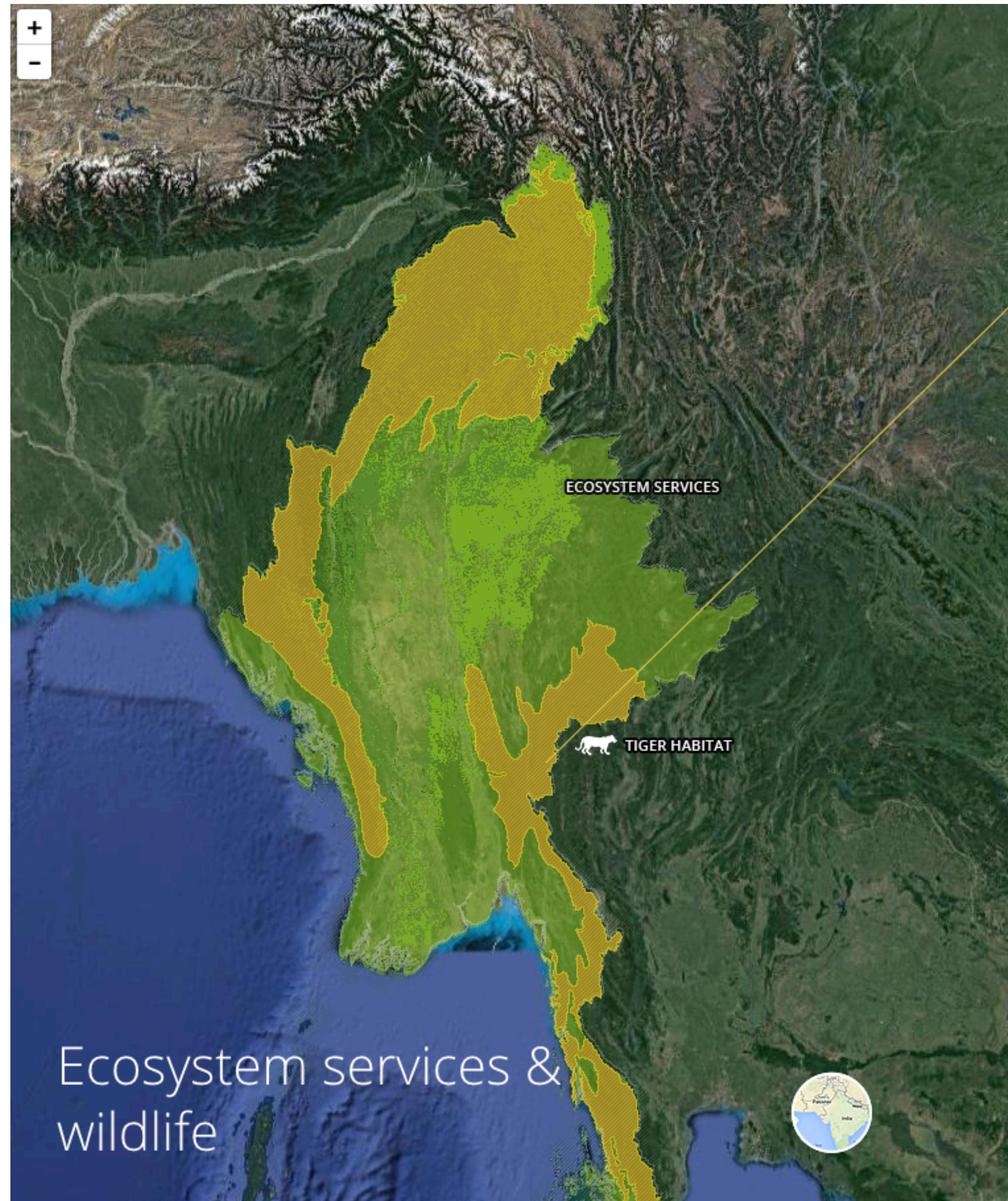
Limit interactivity

Who Will Be President?

FOR MONTHS, WE'VE BEEN UPDATING OUR ESTIMATES WITH EACH NEW POLL.

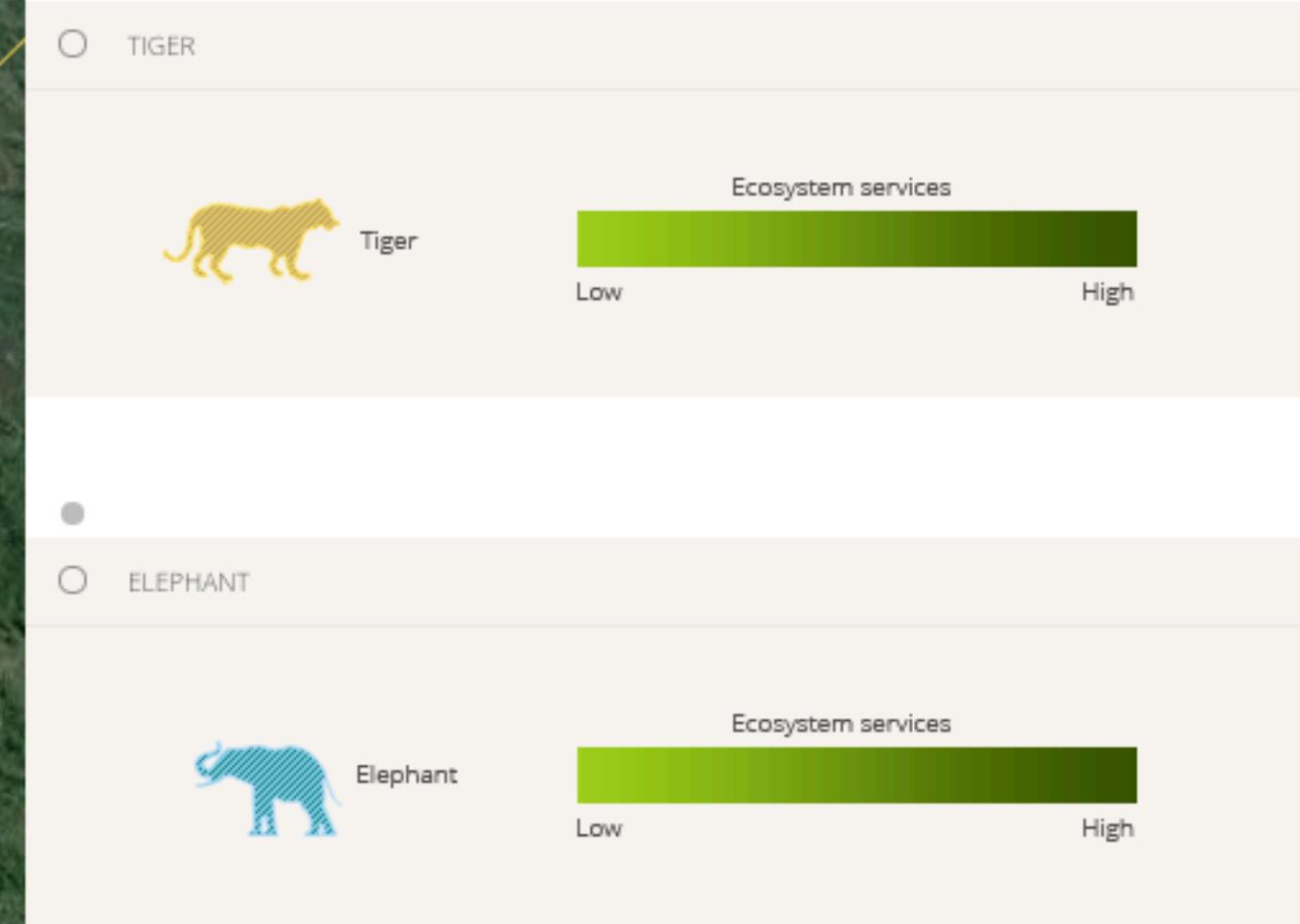
Today, it's Election Day, what we've all been waiting for, and there will be no more updates. You can chart different paths to victory below. Here's how our estimates have changed over time:





Areas: Myanmarbiodiversity.org

Ecosystem services & wildlife



Areas that provide ecosystem services coincide with tiger and elephant habitat, especially in the **Kachin** state of northern Myanmar and the **Chin** and **Rakhine** states of western Myanmar.



Take home message: structure

Understand the audience: what are the takeaway/ outcomes, the context

Cool vs readability tradeoff

Choose the right visual idioms (as always)

Remove clutter: Gestalt principles, color theory, do's and don'ts

Try to be linear for an improved storytelling



Take home message: messaging

Start with an interesting point

Remember that a textual description is always good for storytelling

Don't let the reader wondering, take a side, state your point

Put numbers and facts in context with careful attention to the significant digits

Label important numbers

Add TLDR;, a summary, a conclusion “so what?”



Take home message: interaction

Interactions with the viz should be obvious (going back, reset views, etc.)

Limit interactivity to key elements

Adapt to the platform: touch screen vs mouse, single-click table



Last tips

Use Google fonts for faster rendering

Viewing 846 of 846 font families

Roboto
Christian Robertson (12 styles)

All their equipment and instruments are alive.

Encode Sans Expanded
Impallari Type, Andres Torresi, Jacques Le Bailly (9 styles)

A red flair silhouetted the jagged edge of a wing.

Mukta
Ek Type (7 styles)

I watched the storm, so beautiful yet terrific.

Open Sans
Steve Matteson (10 styles)

Almost before

Lato
Łukasz Dziedzic (10 styles)

A shining

Slabo 27px
John Hudson (1 style)

It was going to be

