

# Informing with design

@alialmossawi

September 2015

“To inform, educate and entertain.”

To inform

Clarity  
Interaction  
Abstraction



Clarity  
Interaction  
Abstraction

$$i\hbar \frac{dc_1}{dt} = E_0 c_1 - A c_2$$

$$i\hbar \frac{dc_2}{dt} = E_0 c_2 - A c_1$$

$$-A = H_{12} = H_{21}$$

$$\begin{array}{l} \sqrt{E-A} \quad c_1 = c_1 \\ \sqrt{E+A} \quad c_2 = -c_1 \end{array}$$

$$\psi(x) = (E-A)(c_1 + c_2)$$

$$E = \frac{\hbar^2 k^2}{2m} = E_0 \pm A$$

$$E = E_0 \pm A$$

$$c_1 = 1; c_2 = 0$$

$$c_1 = 1$$

$$\langle \psi | \psi \rangle = 1$$

$$|\psi\rangle = \sum_i |i\rangle \langle i | \psi \rangle = A$$

$$|\psi\rangle \text{ at } t$$

$$\frac{d\psi}{dt} = 0$$

delay until  $t_2$

$$\langle \chi | U(t_2, t_1) | \psi \rangle = \sum_i \langle \chi | i \rangle \langle i | \psi \rangle$$

$$|\psi(t)\rangle = \sum_i |i\rangle c_i(t)$$

$$i\hbar \frac{dc_i(t)}{dt}$$

MARGARETAREYOUGRIEVI  
NGOVERGOLDENGROVEUNL  
EAVINGLEAVESLIKETHET  
HINGSOFMANYOUWITHYOU  
RFRESHTHOUGHTSCAREFO  
RCANYOUAHASTHEHEARTG  
ROWSOLDERITWILLCOMET  
OSUCHSIGHTSCOLDER

Margaret, are you grieving  
Over Goldengrove unleaving?  
Leaves, like the things of man, you  
With your fresh thoughts care for, can you?  
Ah! as the heart grows older  
It will come to such sights colder

Programming

*Python, JavaScript*

Journalism

*Vox*

Statistics

*FiveThirtyEight*

Ideally, we want the reader to grasp our work with minimal investment

Any extra acts of cognition that users are made to perform  
incur a **debt** that we must then relieve in the form of increased **value**

(1)

Ideally, we want the reader to grasp our work with minimal investment

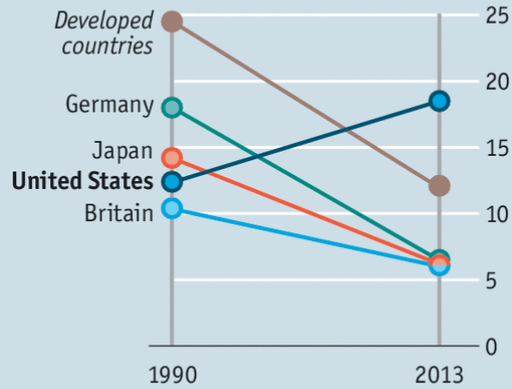
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Ideally, we want the reader to grasp our work with minimal investment

Any extra acts of cognition that users are made to perform  
incur a **debt** that we must then relieve in the form of increased **value**  
(2)

## Odd one out

Maternal-mortality rate, per 100,000 live births

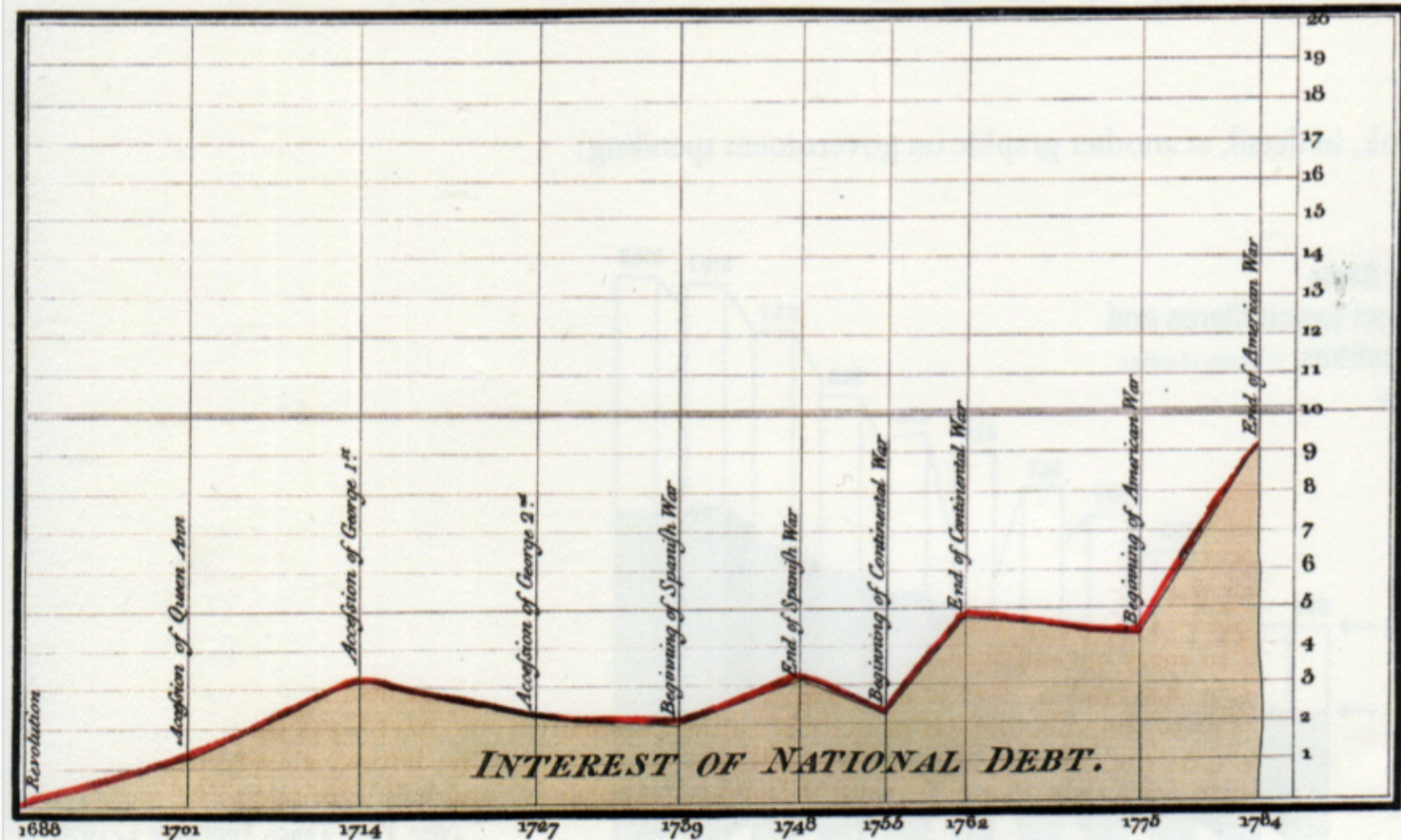


Source: Kassebaum *et al*, *Lancet*

Economist.com



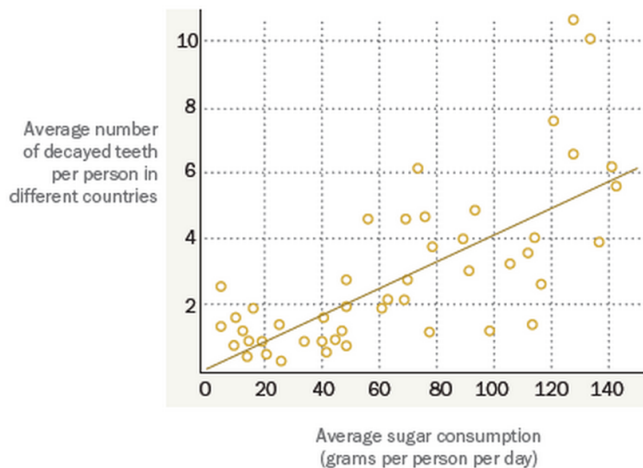
# Interest of the NATIONAL DEBT from the Revolution.



The Bottom line is Years; those on the Right hand Millions of Pounds.

### 63% of American Adults Can Correctly Read This Chart

Which of the following statements best describes the data in the graph below?



- A. In recent years, the rate of cavities has increased in many countries
- B. In some countries, people brush their teeth more frequently than in other countries
- C. The more sugar people eat, the more likely they are to get cavities (CORRECT)**
- D. In recent years, the consumption of sugar has increased in many countries

Source: American Trends Panel (wave 6). Survey of U.S. adults conducted Aug. 11-Sept. 3, 2014.

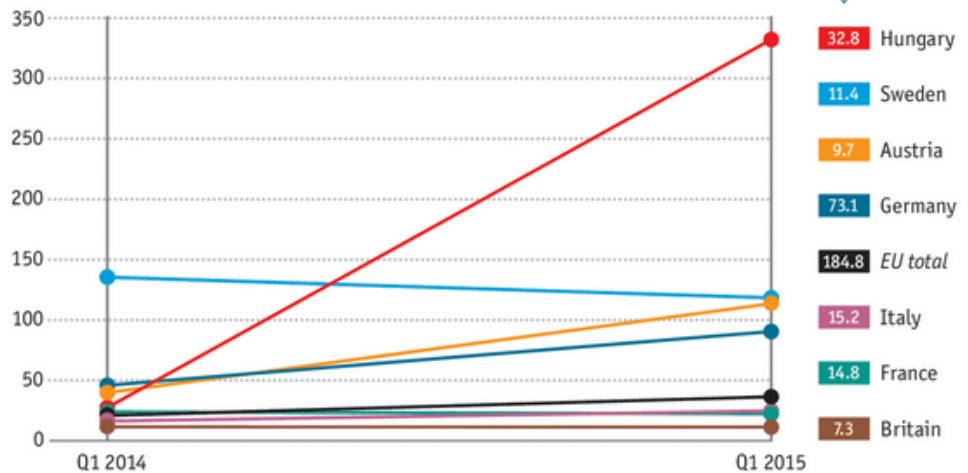
PEW RESEARCH CENTER

*To increase clarity*

Idea 1: Use charts that people know

## New asylum applications

Per 100,000 population

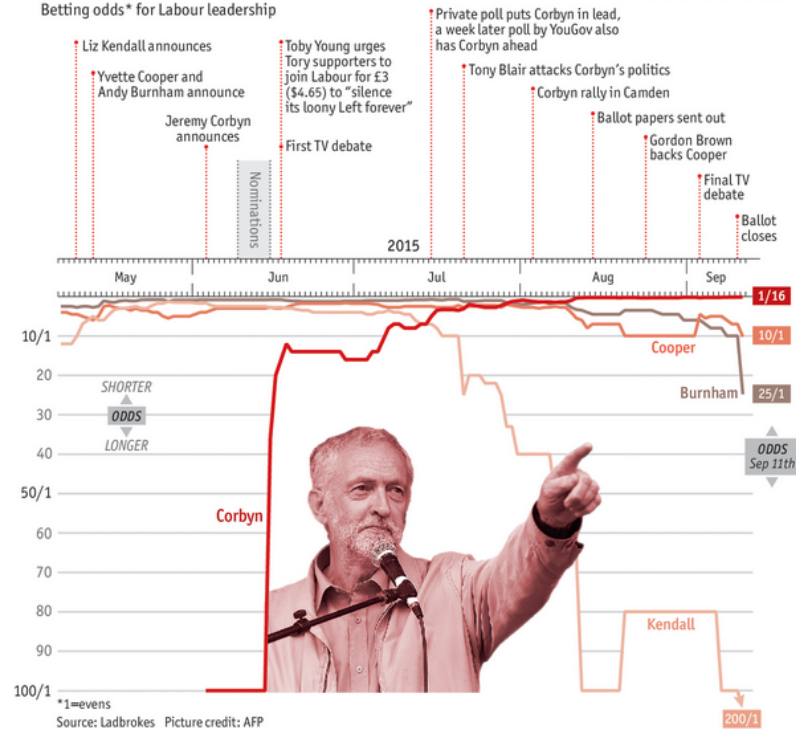


Source: Eurostat

Economist.com

## Left turn

Betting odds\* for Labour leadership



Support and endorsements	Burnham	Cooper	Corbyn	Kendall	Undeclared
MPs' nomination	68	59	36	41	28
Constituency Labour Parties' support	111	109	152	18	256
Unions' endorsement	3	2	6	nil	6

Economist.com

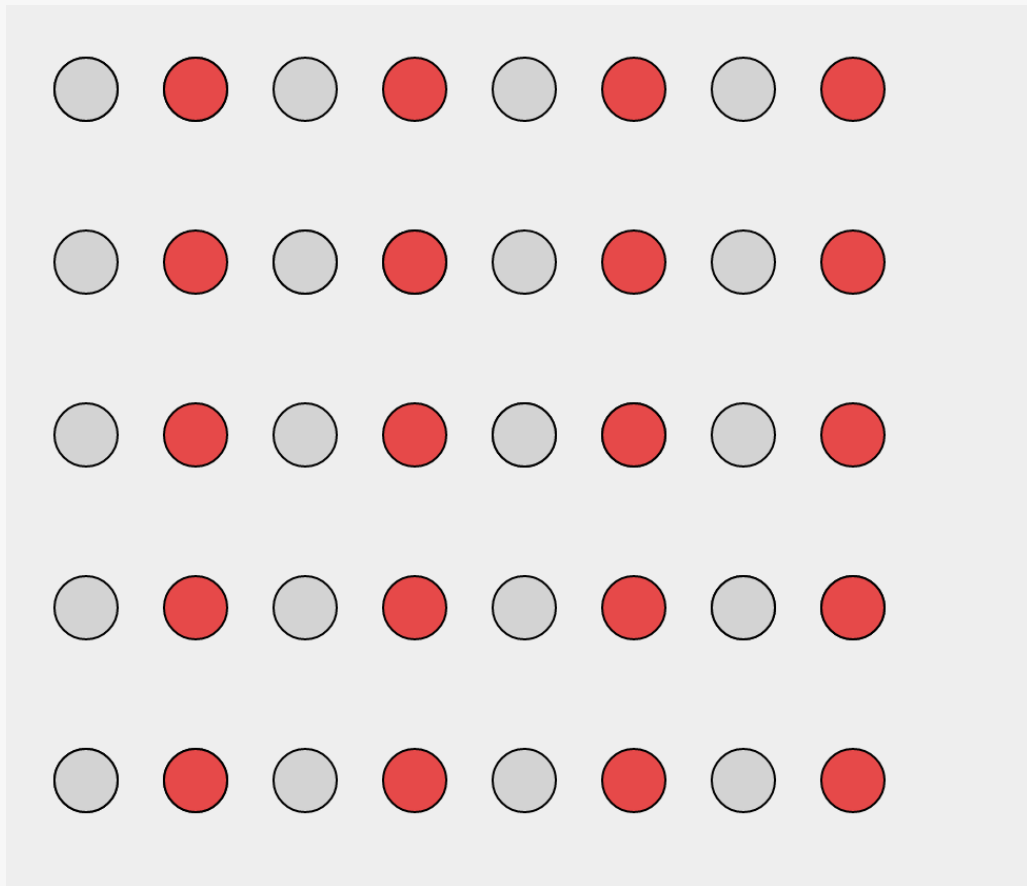
The Economist

*To increase clarity*

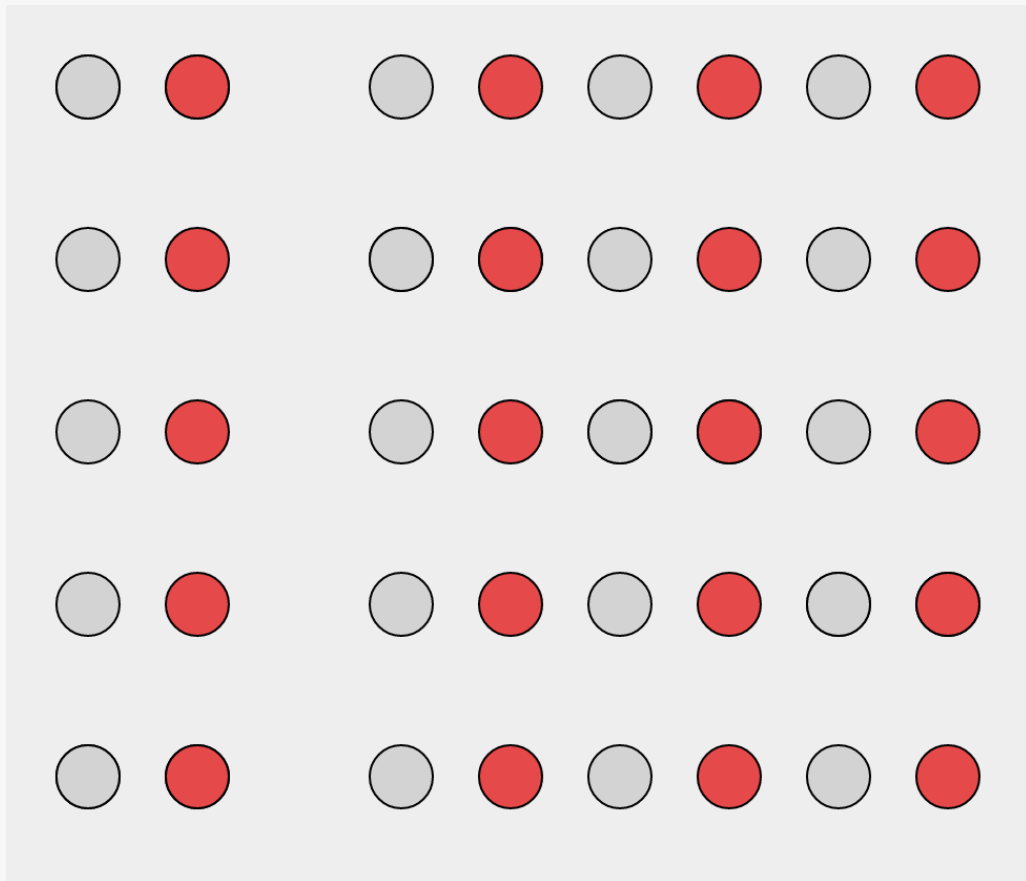
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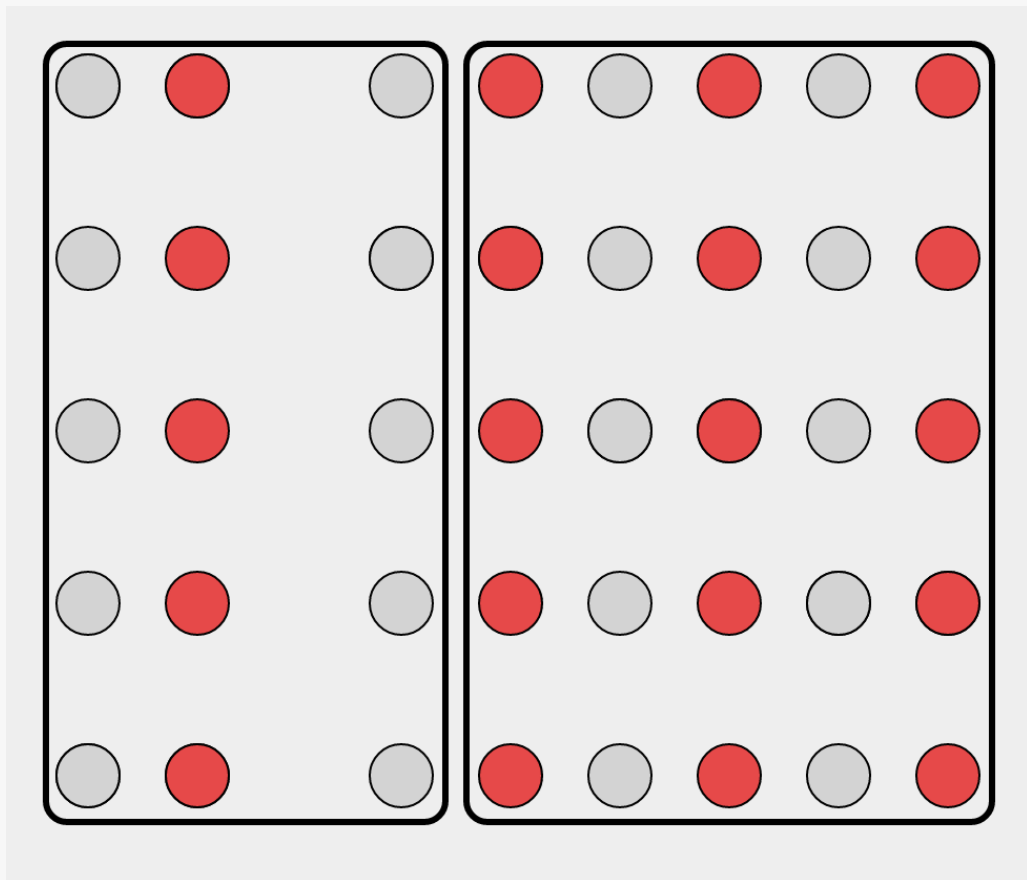
Idea 2: Make things we care about stand out

## Gestalt principles







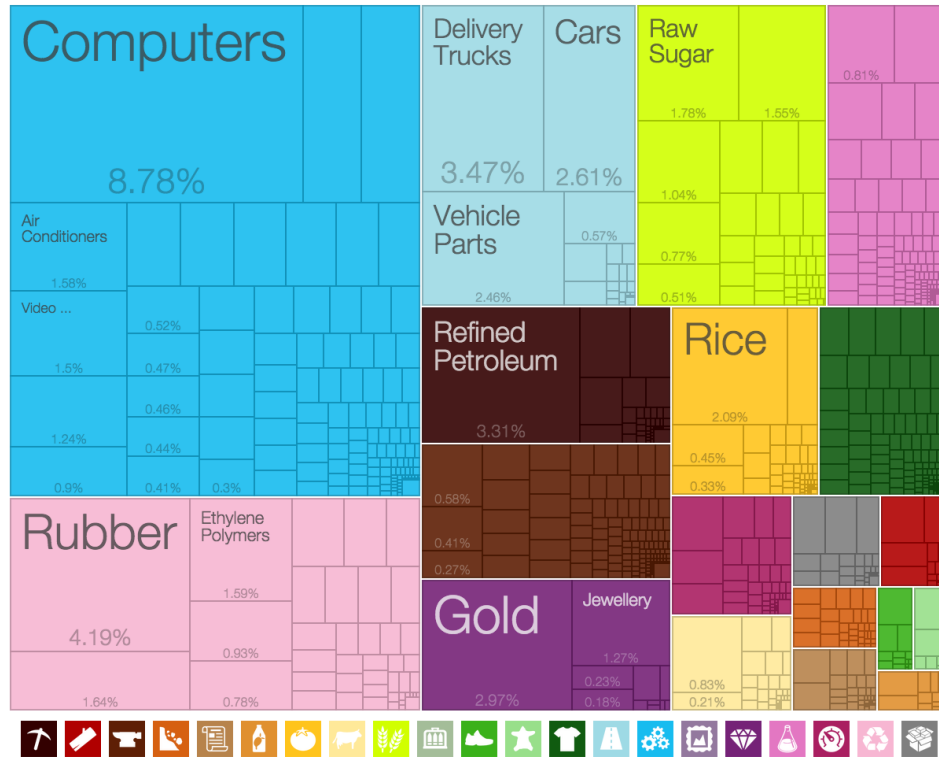


*To increase clarity*

Idea 1: Use charts that people know

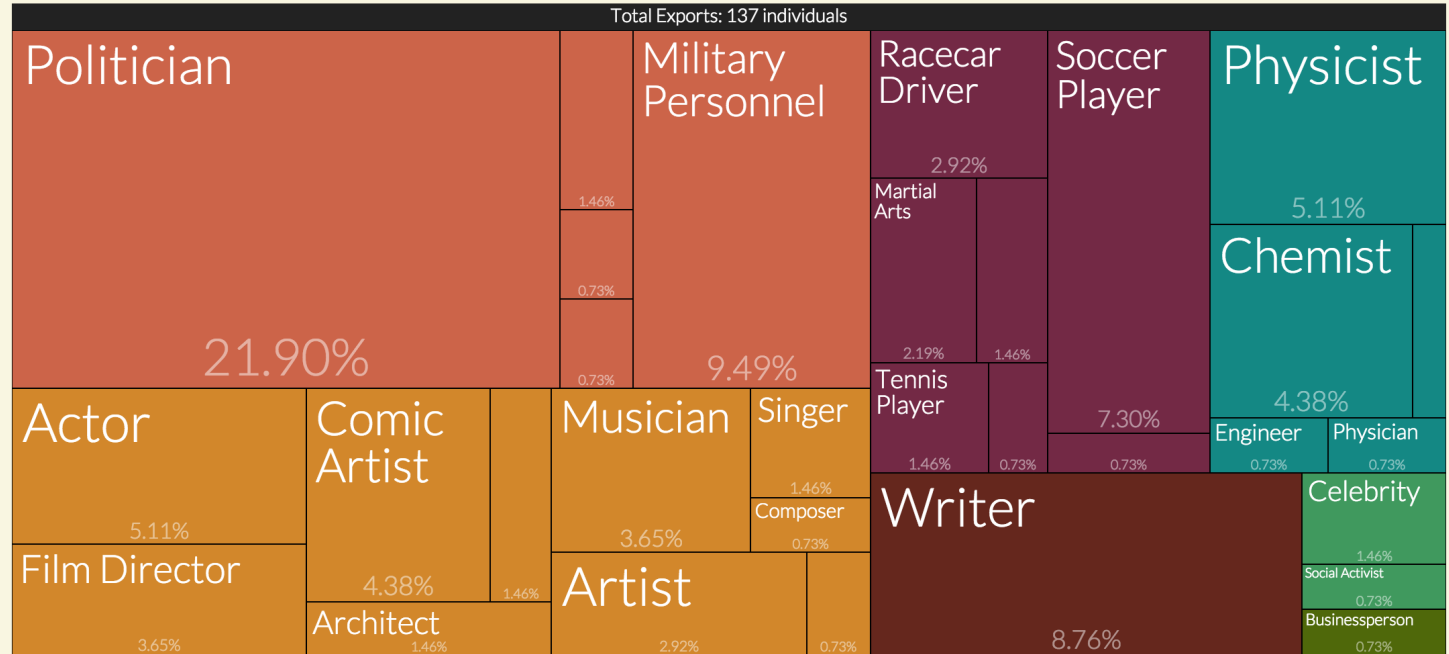
Idea 2: Make things we care about stand out

Idea 3: Be cognizant of how the reader perceives visual elements



# Who are the globally known people born within present day Japan\*?

[4000 B.C. – 2010]



So you're saying use treemaps for hierarchical data?

	<i>Tree</i>	<i>Sunburst</i>	<i>Treemap</i>	<i>Matrix</i>
<i>Answers our questions?</i>	3 out of 5	2 out of 5	2 out of 5	4 out of 5
<i>Compact?</i>	Not really	Kind of	Yes	Yes
<i>Comparability?</i>	Not really	Kind of	Kind of	Yes

- 
1. How are employees distributed throughout the organization?
  2. How flat is the organization?
  3. Which teams are the most spread-out?
  4. How big are teams?
  5. To what extent are offices used?

# Vissarion Belinsky

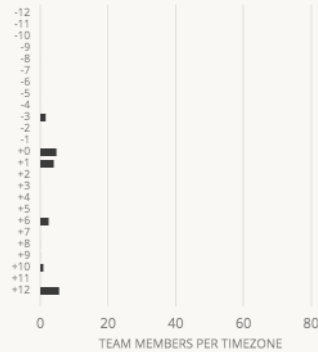
Manages Mikhail Bakunin  
Team size 1

Staff in each timezone  
1 (median), 1 (mean)

Potential lost hours\*  
0 hours (between staff)  
0 hours (between manager and staff)

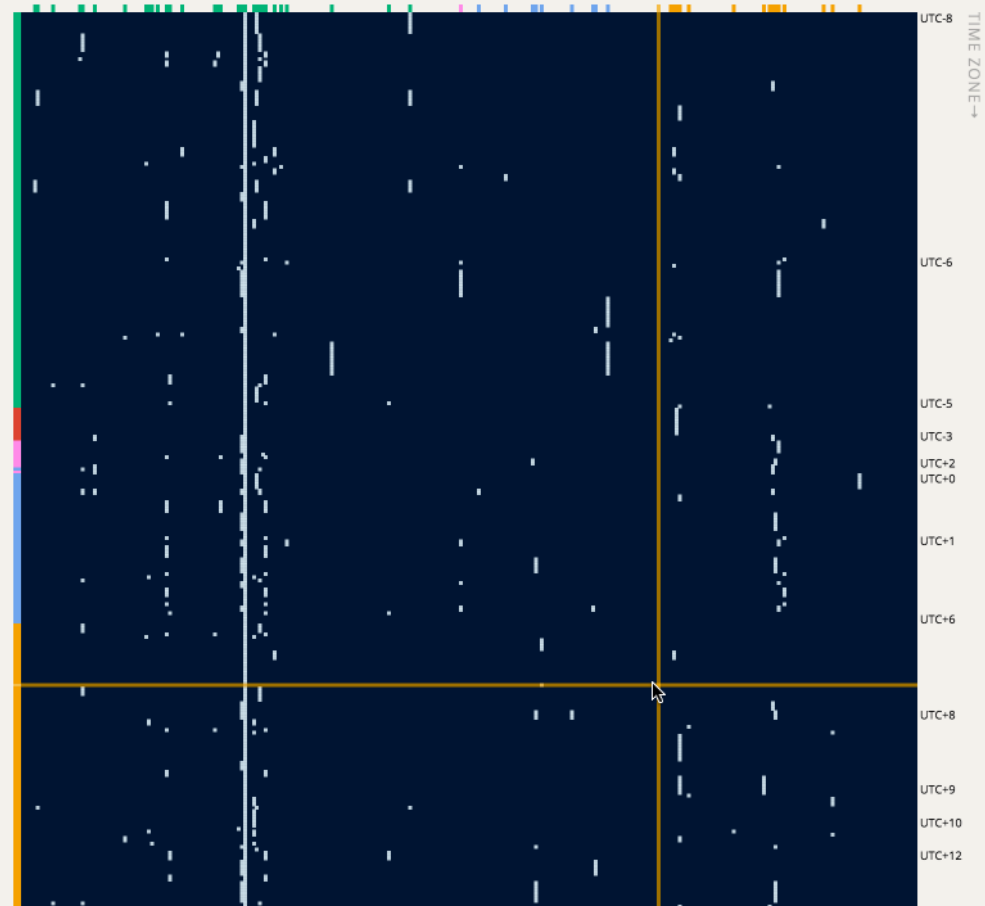
Maximum time difference  
0 hours (between staff)  
0 hours (between manager and staff)

Largest group in the same time zone  
1 staff, 100% of team are in UTC+6



\* The difference between the timezone with the largest group of staff (mode) and the farthest timezone from the mode.

Mikhail Bakunin





The path from the familiar to the novel ought to be  
fraught with **caution** and **reflection**

*To increase clarity*

Idea 1: Use charts that people know

Idea 2: Make things we care about stand out

Idea 3: Be cognizant of how the reader perceives visual elements

Idea 4: The path from the familiar to the novel ought to be fraught with caution and reflection

# Quality Indices

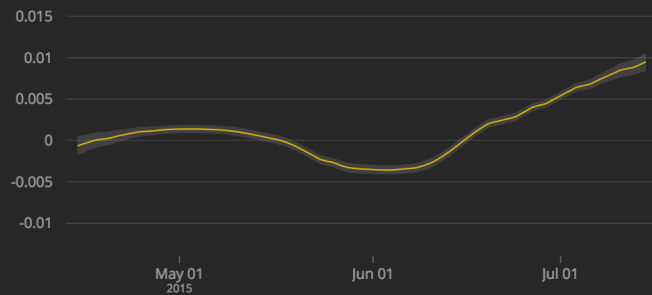
SUITE BUCKETS

SUITES

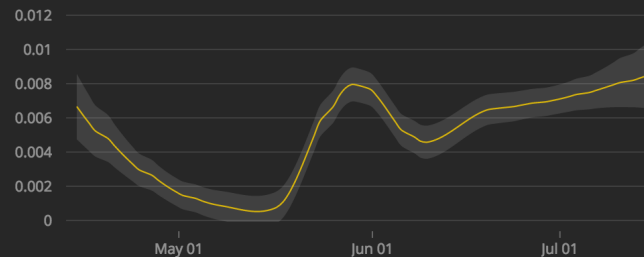
RAW DATA

A **suite bucket** is a combination of individual suites. This view gives us a sense of how our suites are doing at a high-level.

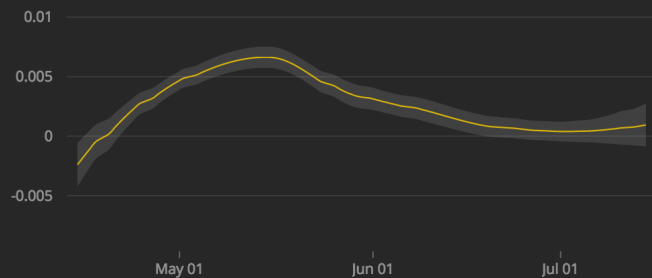
pageload



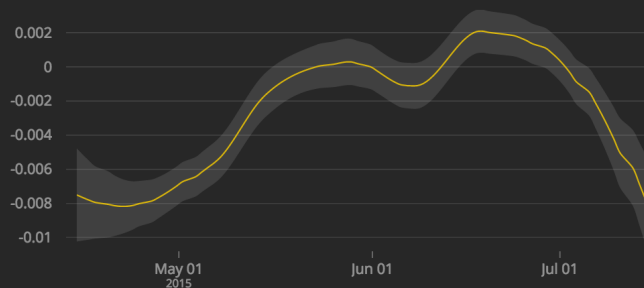
rendering



scrolling



startup



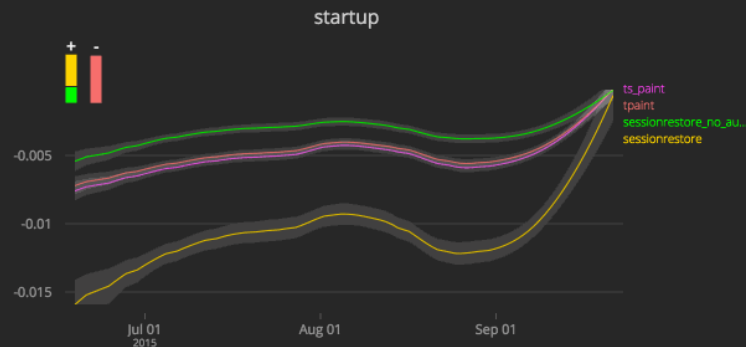
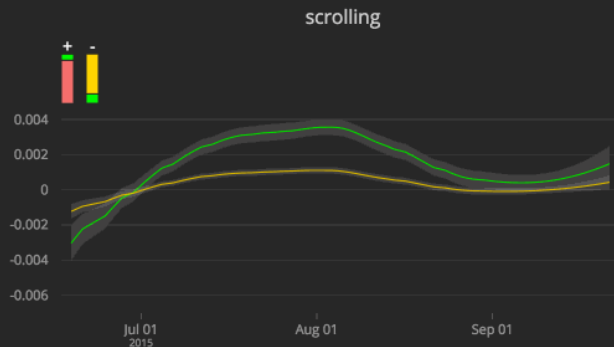
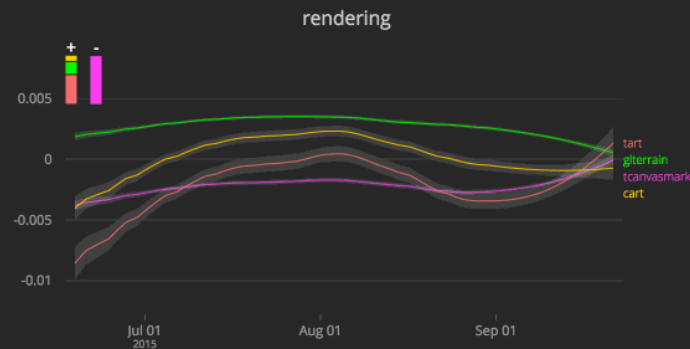
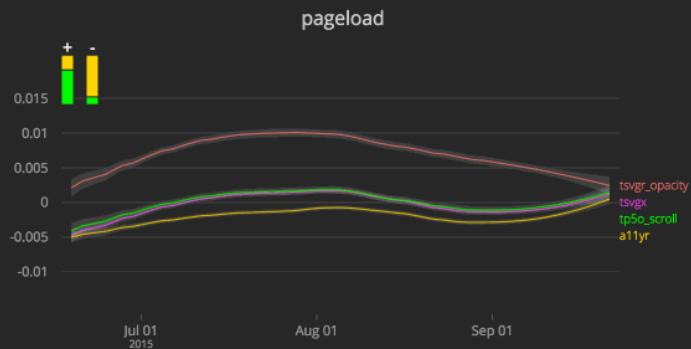
# Quality Indices

SUITE BUCKETS

SUITES

RAW DATA

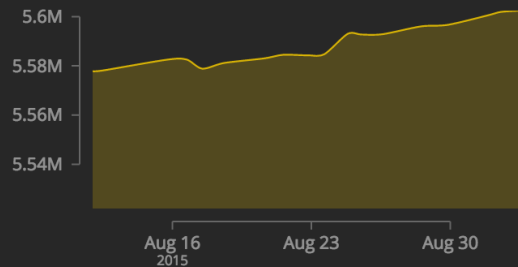
For each of our suite buckets, here is a breakout of the individual **suites** that combine to form a suite bucket.



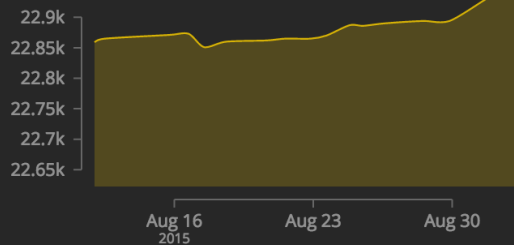
# Code Quality

Architectural measures of complexity for revisions in [mozilla-central](#).

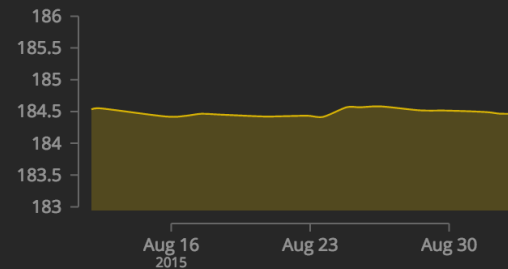
Lines of code ?



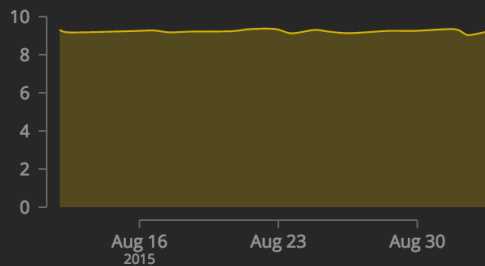
Files ?



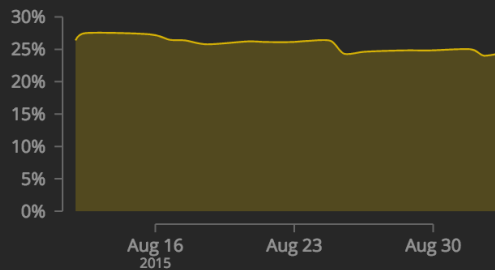
Cyclomatic complexity ?



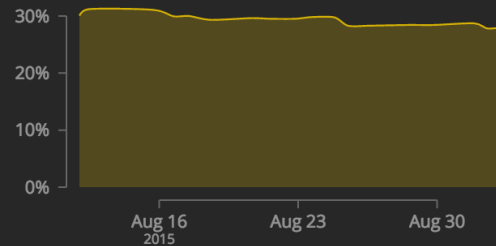
Dependencies ?



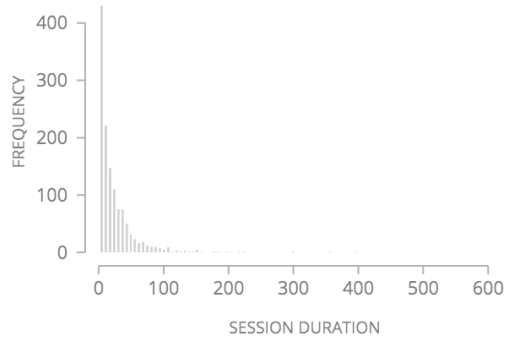
Propagation ?



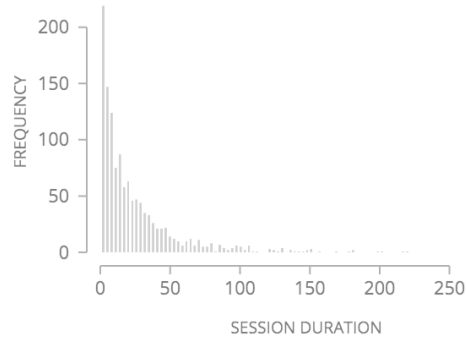
Highly interconnected files ?



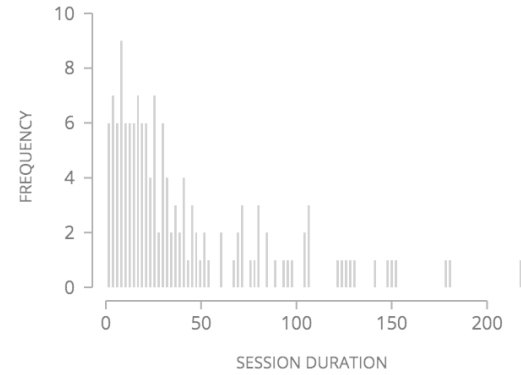
Sessions that message



Sessions that search



Sessions that book





300,000 hits

5,200 Github stars

Clarity  
**Interaction**  
Abstraction



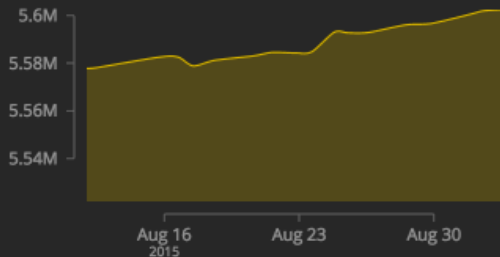




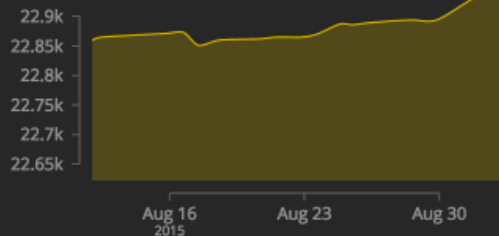
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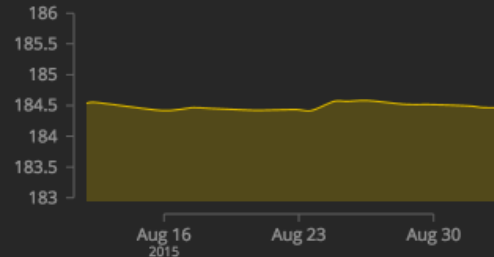
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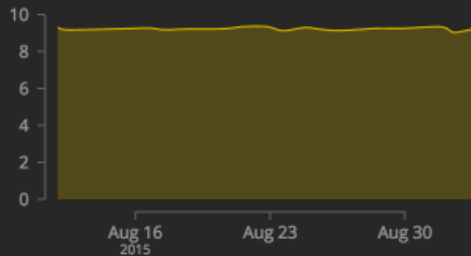
Files ?



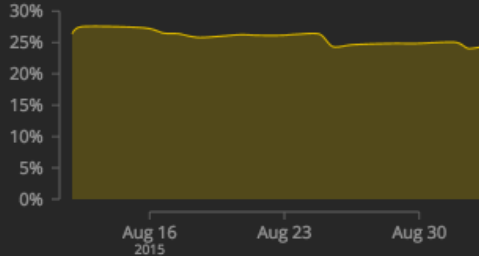
Cyclomatic complexity ?



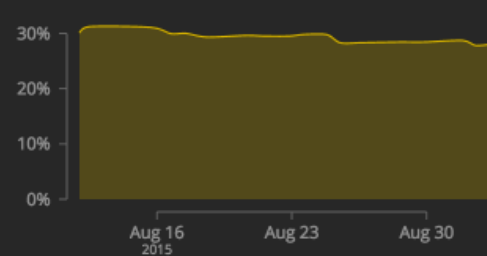
Dependencies ?

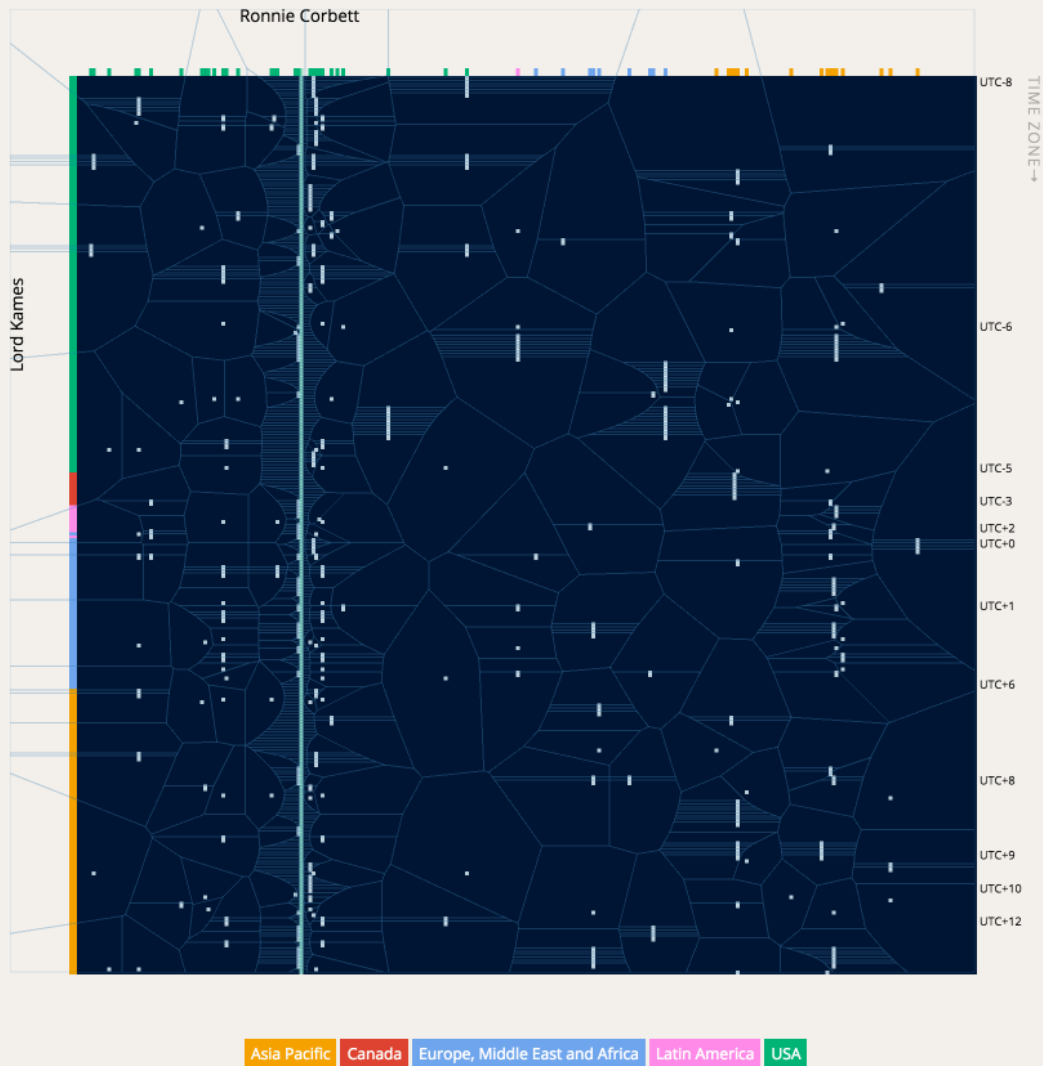


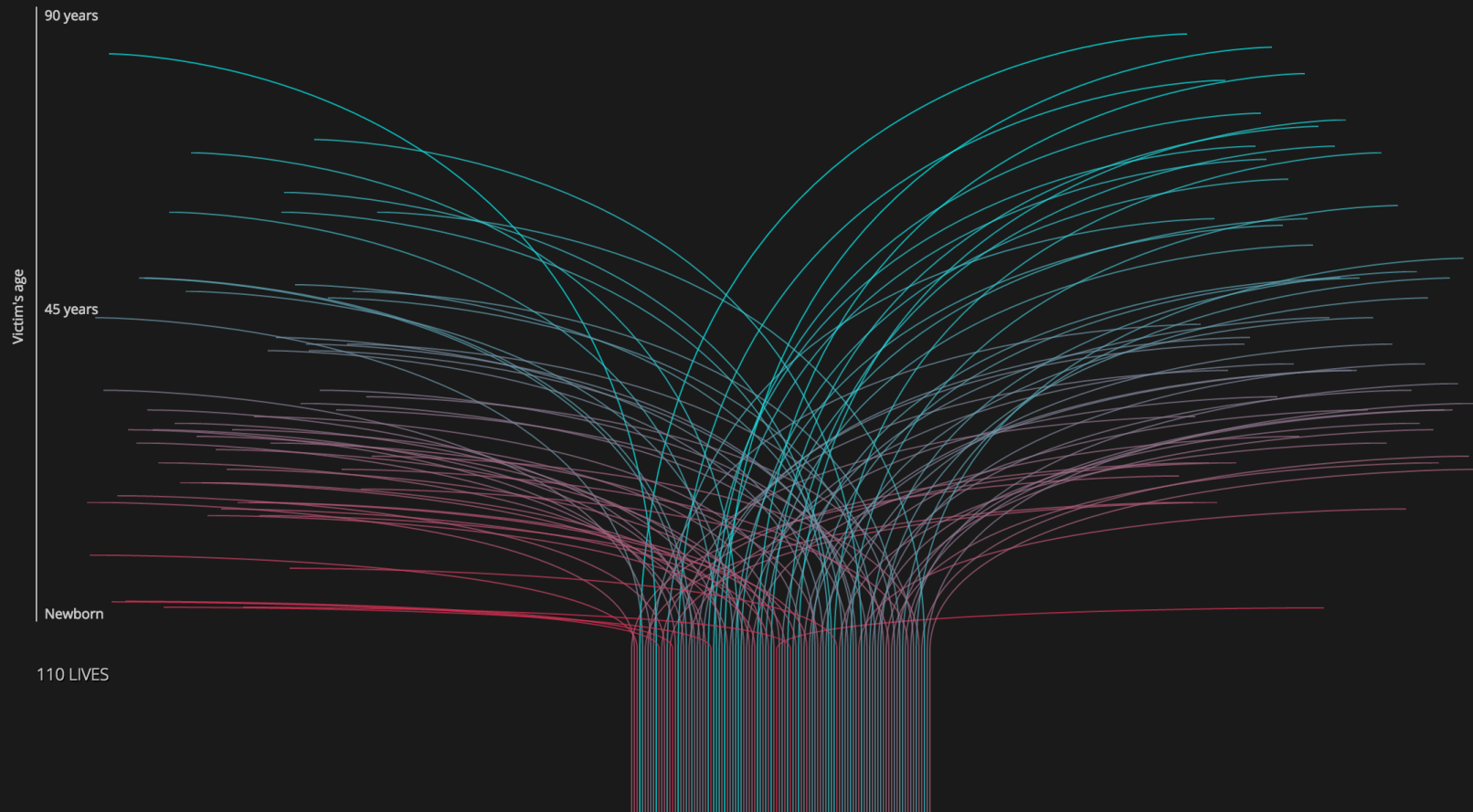
Propagation ?



Highly interconnected files ?







## Bahrain: Two Years On

ALL AGES

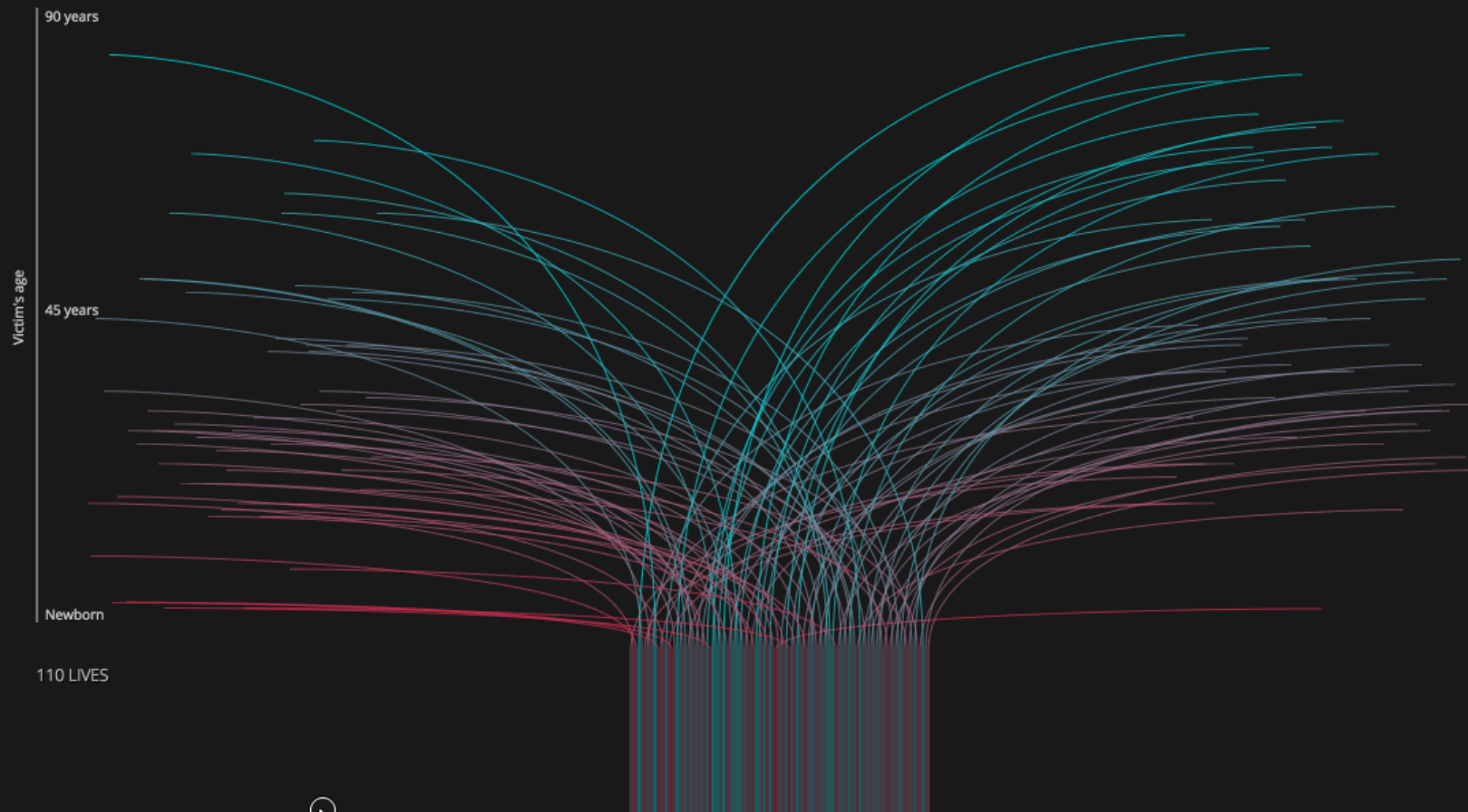


ALL CAUSES OF DEATH



ALL HOMETOWNS



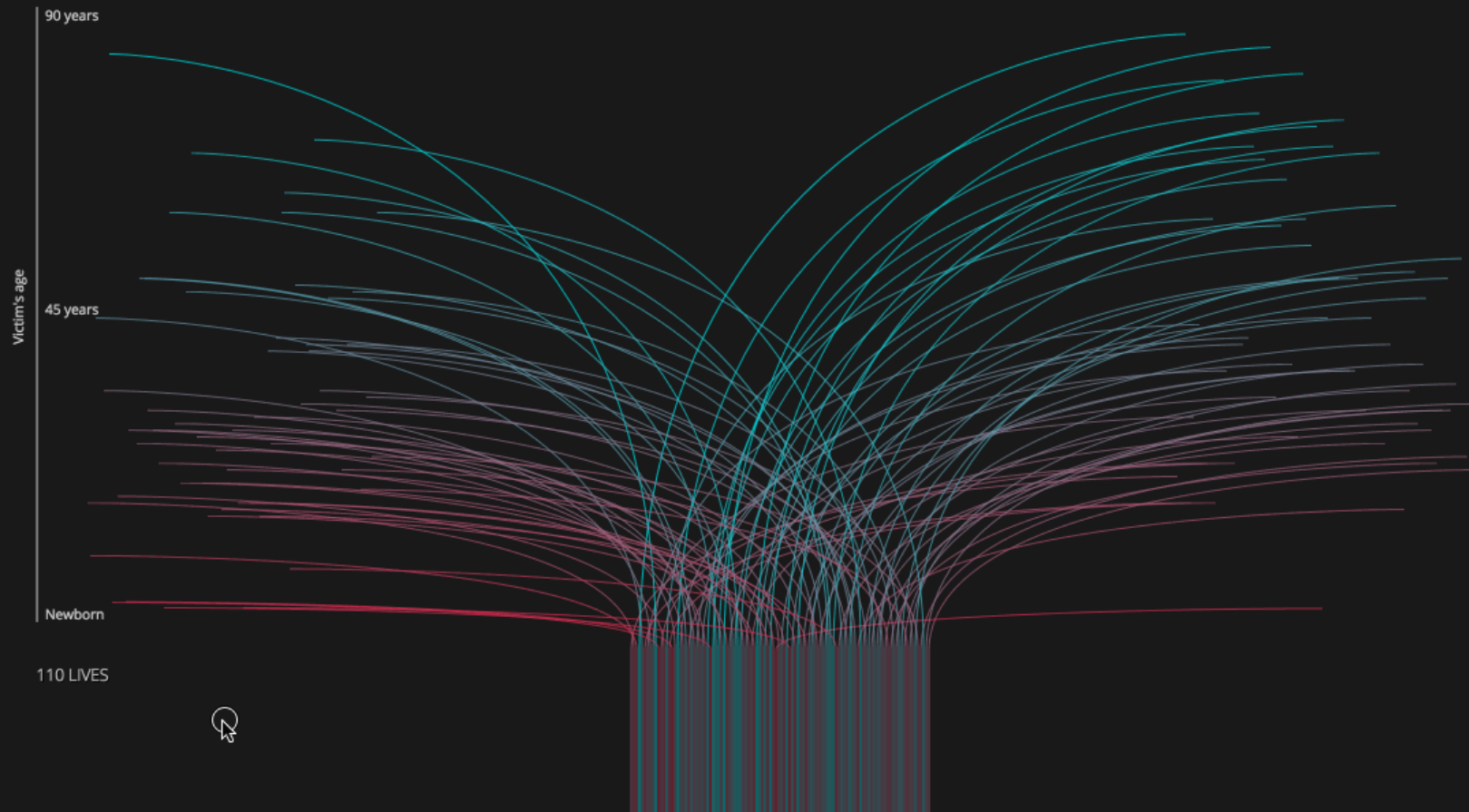


## Bahrain: Two Years On

ALL AGES

ALL CAUSES OF DEATH

ALL HOMETOWNS

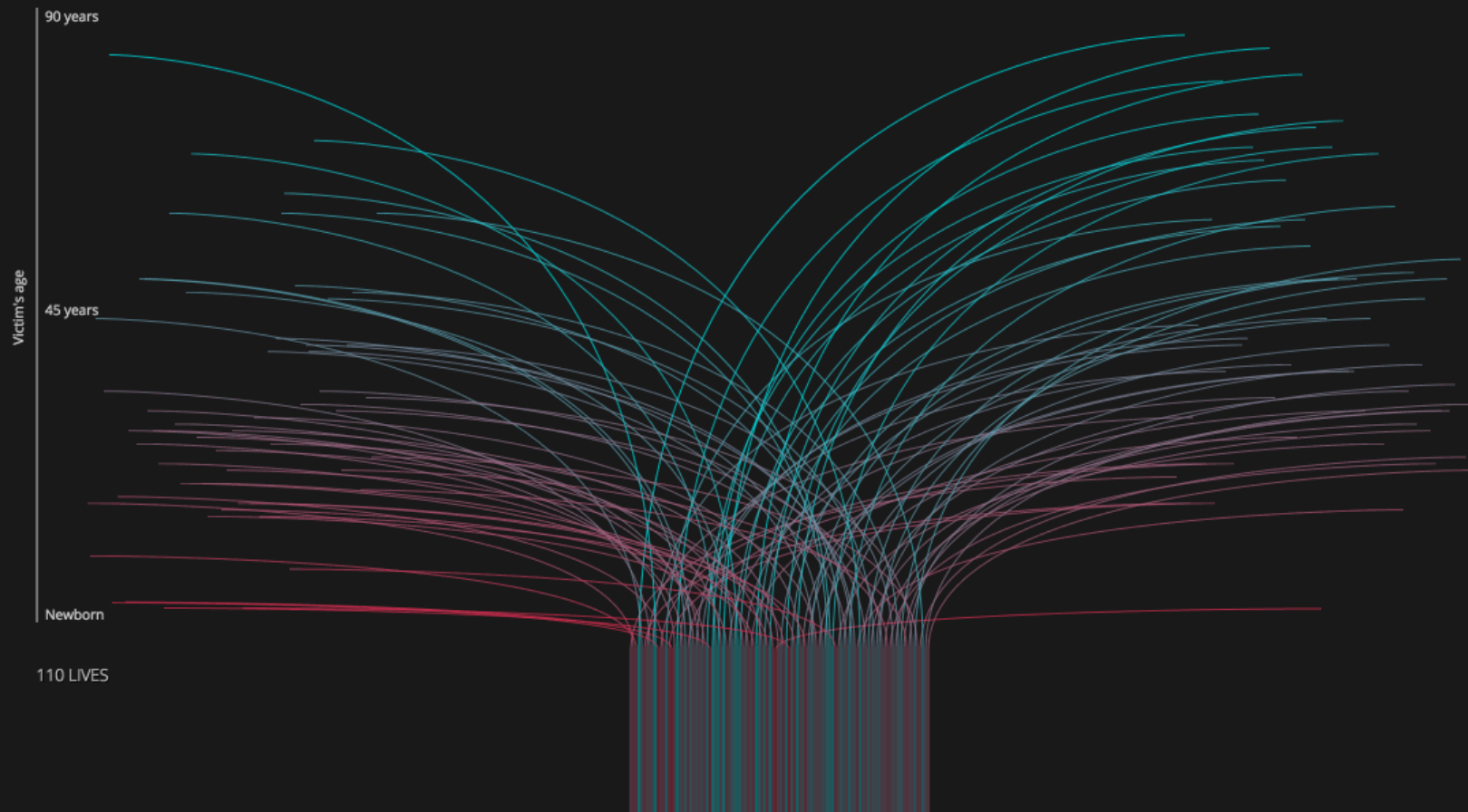


## Bahrain: Two Years On

ALL AGES

ALL CAUSES OF DEATH

ALL HOMETOWNS



## Bahrain: Two Years On

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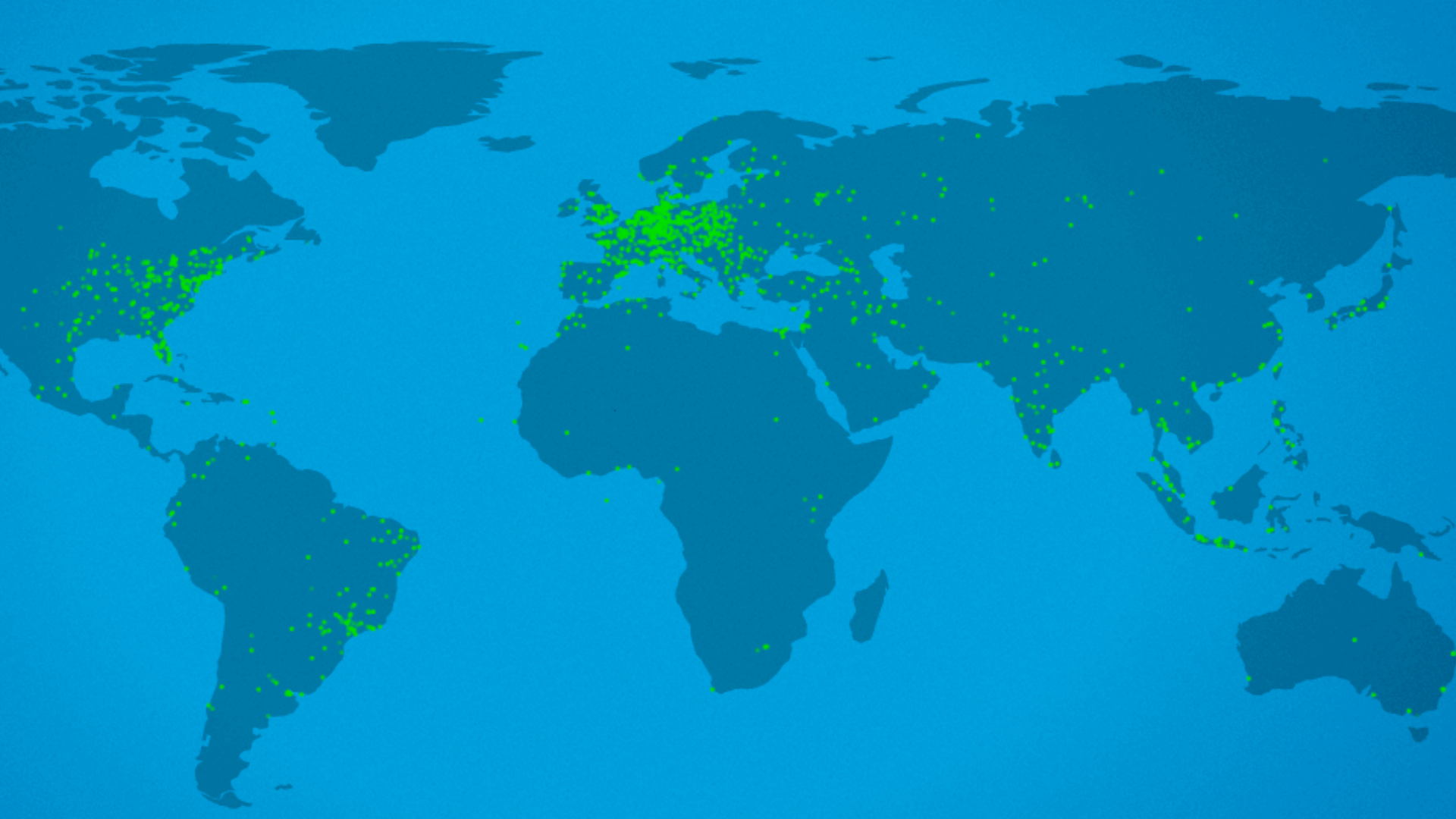
ALL CAUSES OF DEATH

ALL HOMETOWNS



Clarity  
Interaction  
Abstraction

Abstraction hides detail, good abstraction hides the right detail





Firefox

Thanks for helping to shape the future of the Web.

► The Web we want

Get Firefox  
Free Download

▼ Back to map

☰ What matters to you?

📄 Share the map

View by:

- 👁 Privacy
- ♥ Opportunity
- 👤 Accessibility
- 🌱 Freedom
- 📖 Learning
- ⚙ User control



36% want a Web that keeps their information safe and private.

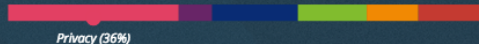
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## Firefox & privacy

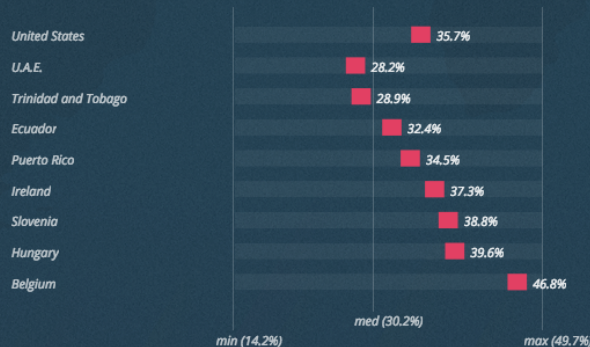
Firefox is made under the principle that security and privacy are fundamental and must not be treated as optional.

What matters most by country?

🌐 United States



How does that compare globally?



View by:



Privacy



Opportunity



Accessibility



Freedom



Learning



User control

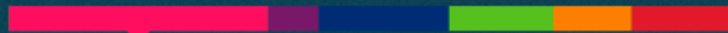


*36% want a Web that keeps  
their information safe and  
private.*



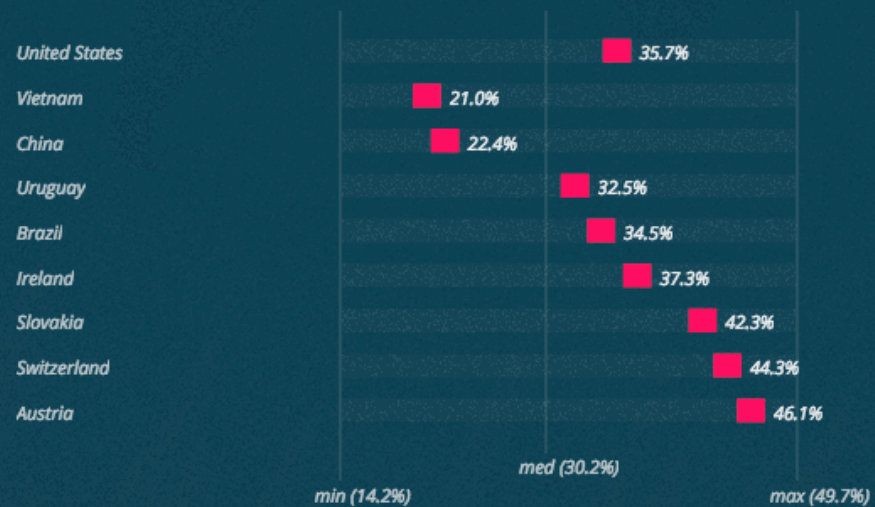
*What matters most by country?*

 *United States*



*Privacy (36%)*

### *How does that compare globally?*





Firefox

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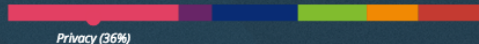
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## Firefox & privacy

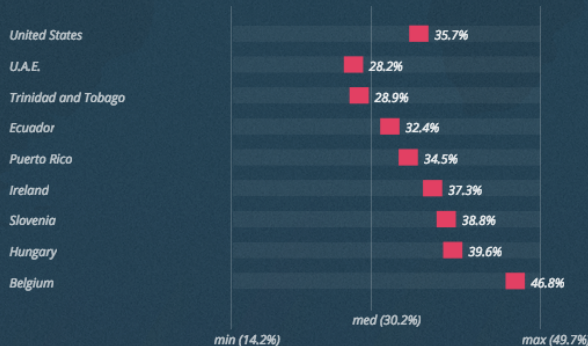
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What matters most by country?

🌐 United States



How does that compare globally?





Final thought

“We make to ourselves pictures of facts.”

Ludwig Wittgenstein, Notebooks, 1914-1916

IF YOU LET A BULLY COME IN  
YOUR FRONT YARD. HE WILL BE  
ON YOUR PORCH THE NEXT DAY  
AND THE DAY AFTER  
THAT HE WILL EAT YOUR BABIES!



THAT ESCALATED  
QUICKLY.









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