



Northwestern
University

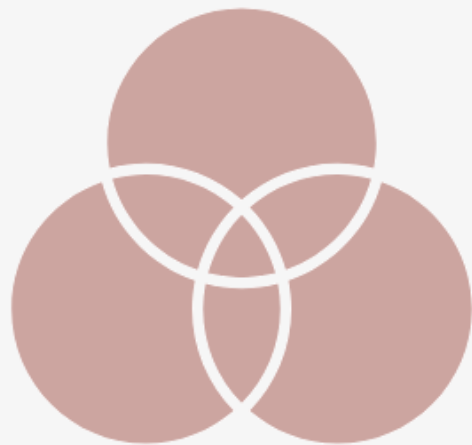
Exploring Different Chart Types – Part 1

Week 6

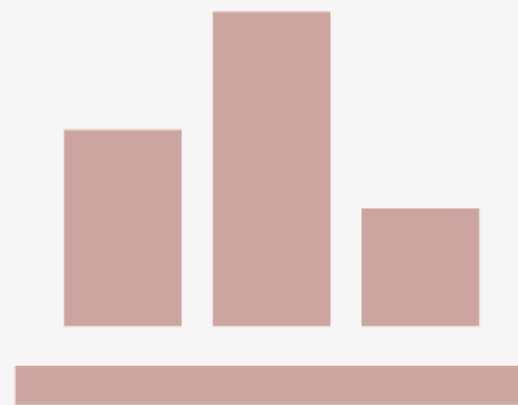


Exploring Different Chart Types

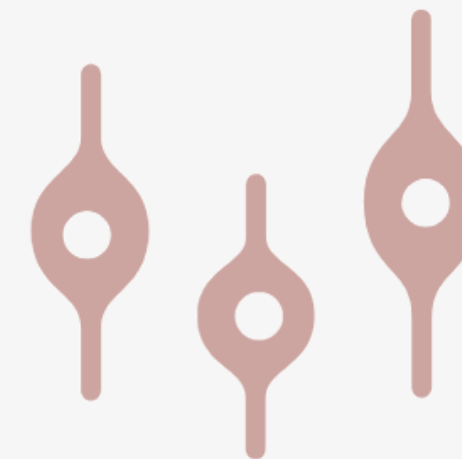




RELATIONSHIP



COMPARING CATEGORIES



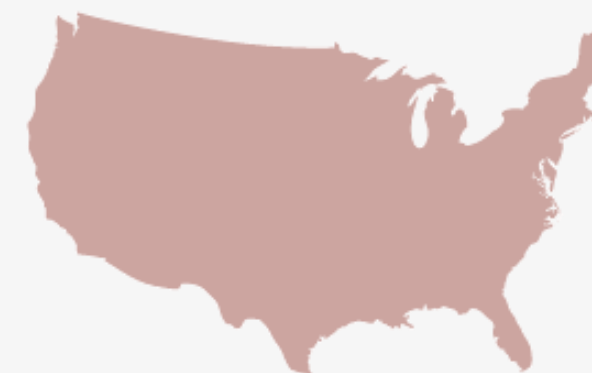
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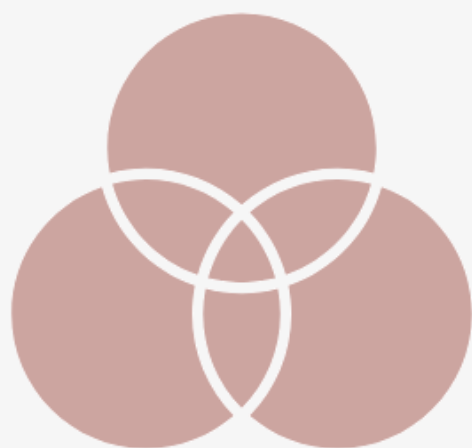
TIME



PART-TO-WHOLE



GEOSPATIAL



RELATIONSHIP



COMPARING CATEGORIES



DISTRIBUTION



TIME

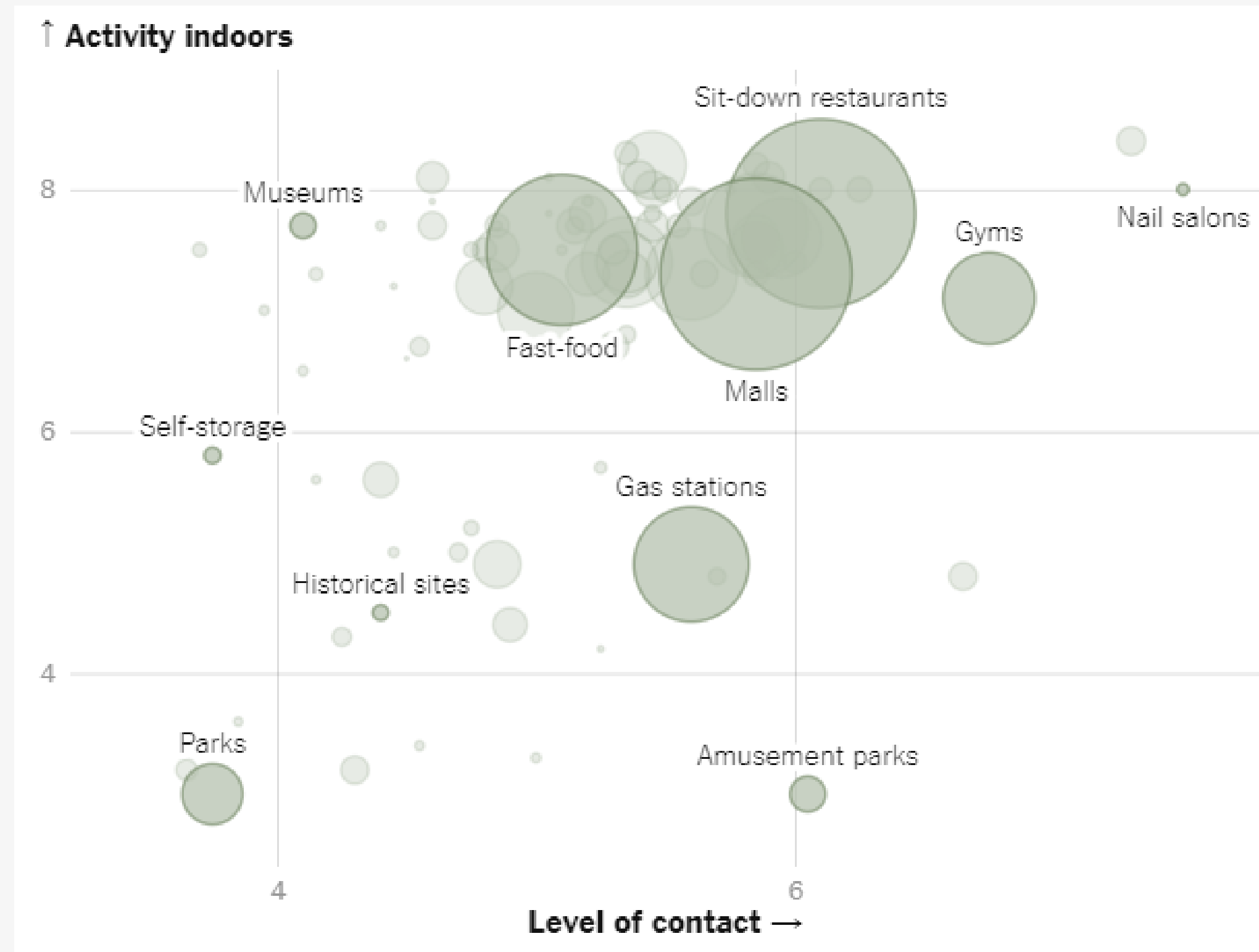


PART-TO-WHOLE



GEOSPATIAL

Scatterplot/Bubble Scatterplot

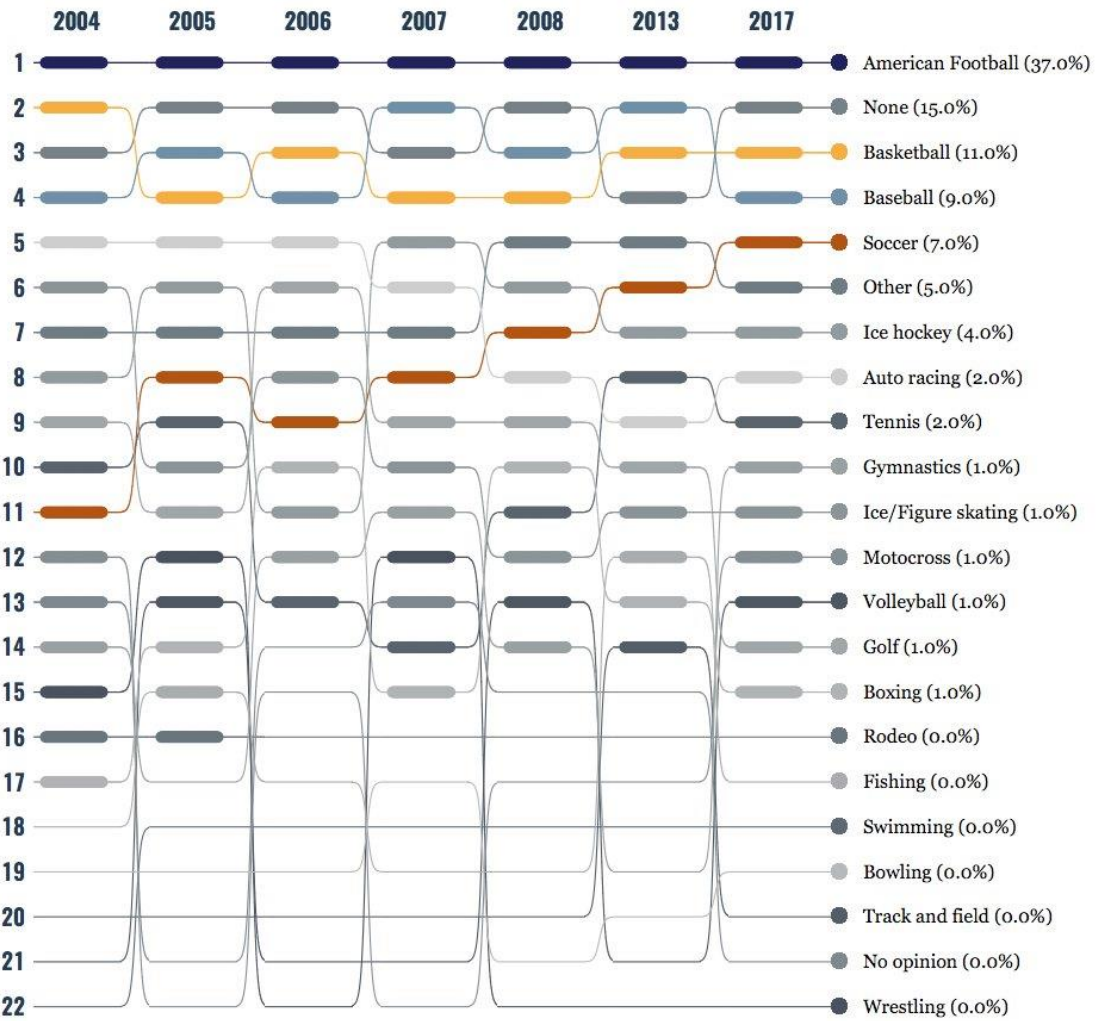


Source: <https://www.nytimes.com/2020/05/14/learning/whats-going-on-in-this-graph-easing-lockdowns.html>

Bump Chart

GAINING GROUND: Soccer grows in the U.S.

Major League Soccer (MLS) has come a long way over the past decade. While “football” continues to dominate as the most popular sport globally, soccer has been fighting an uphill battle to match the interest of American football in the U.S. becoming the fifth most viwed sport in 2017.

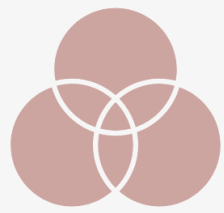


Data source: Gallup | Data Visualisation: @PabloLGomez | Graphic Design: I FOR IDEAS | #MakeoverMonday 2020 Week 1

What is America’s most popular sport since 2004?

For many years, **Gallup has regularly asked** Americans which sport is their favorite to watch. The ranking chart above shows the most profound shift that’s occurred in the US sporting landscape so far when the United States was a baseball country. Now, Americans are a football country — a place where **nearly two thirds** of all Americans

say they regularly watch football, and regular season games get bigger TV ratings than Game 7 of the Baseball World Series. Basketball, in fact, has entered a tie with baseball for third and fourth place since the early 2000’s. Gallup data also shows the growth os Soccer to become the fifth favourite sport in the United States.



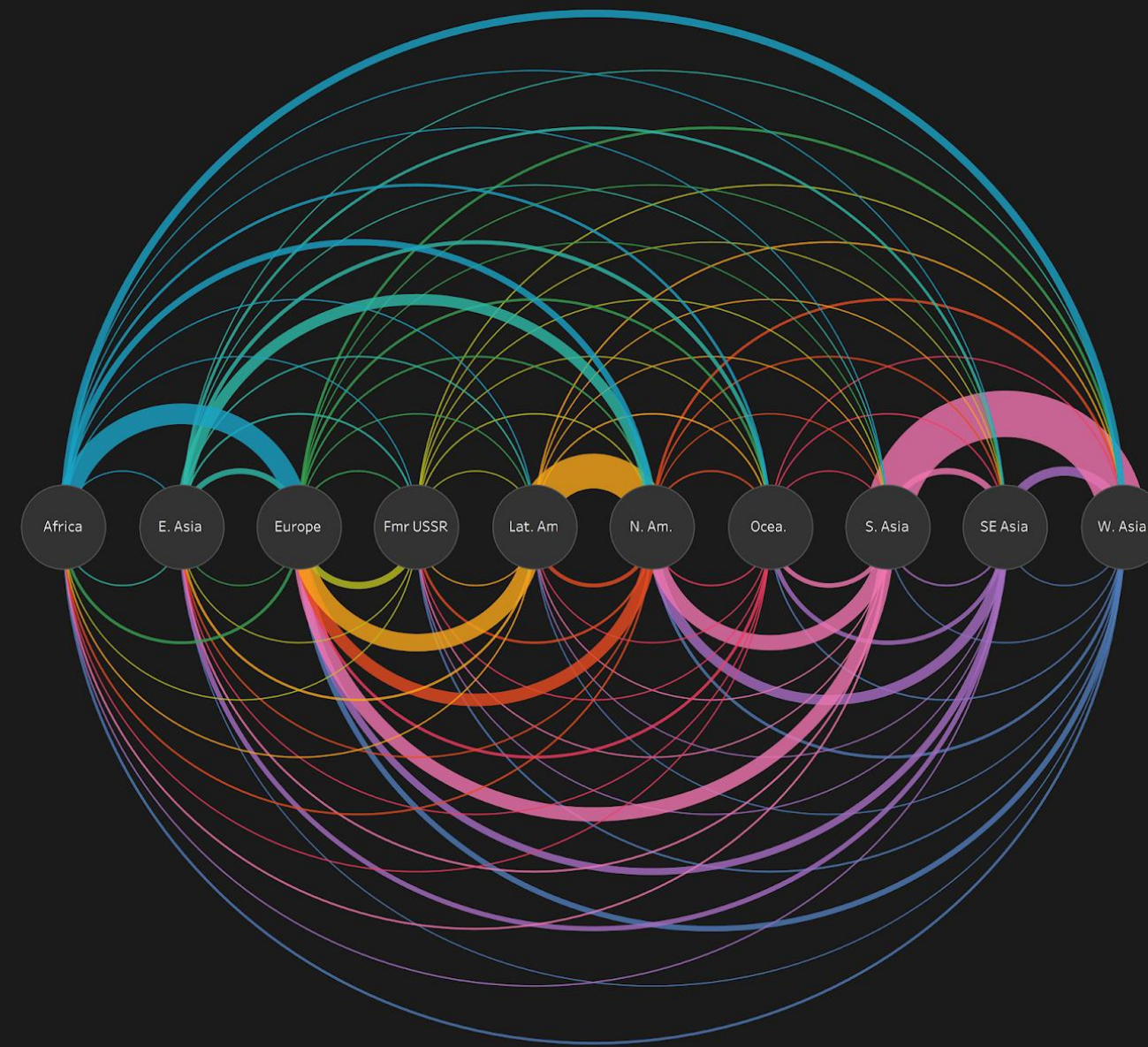
RELATIONSHIP



Arc Chart

GLOBAL MIGRATION

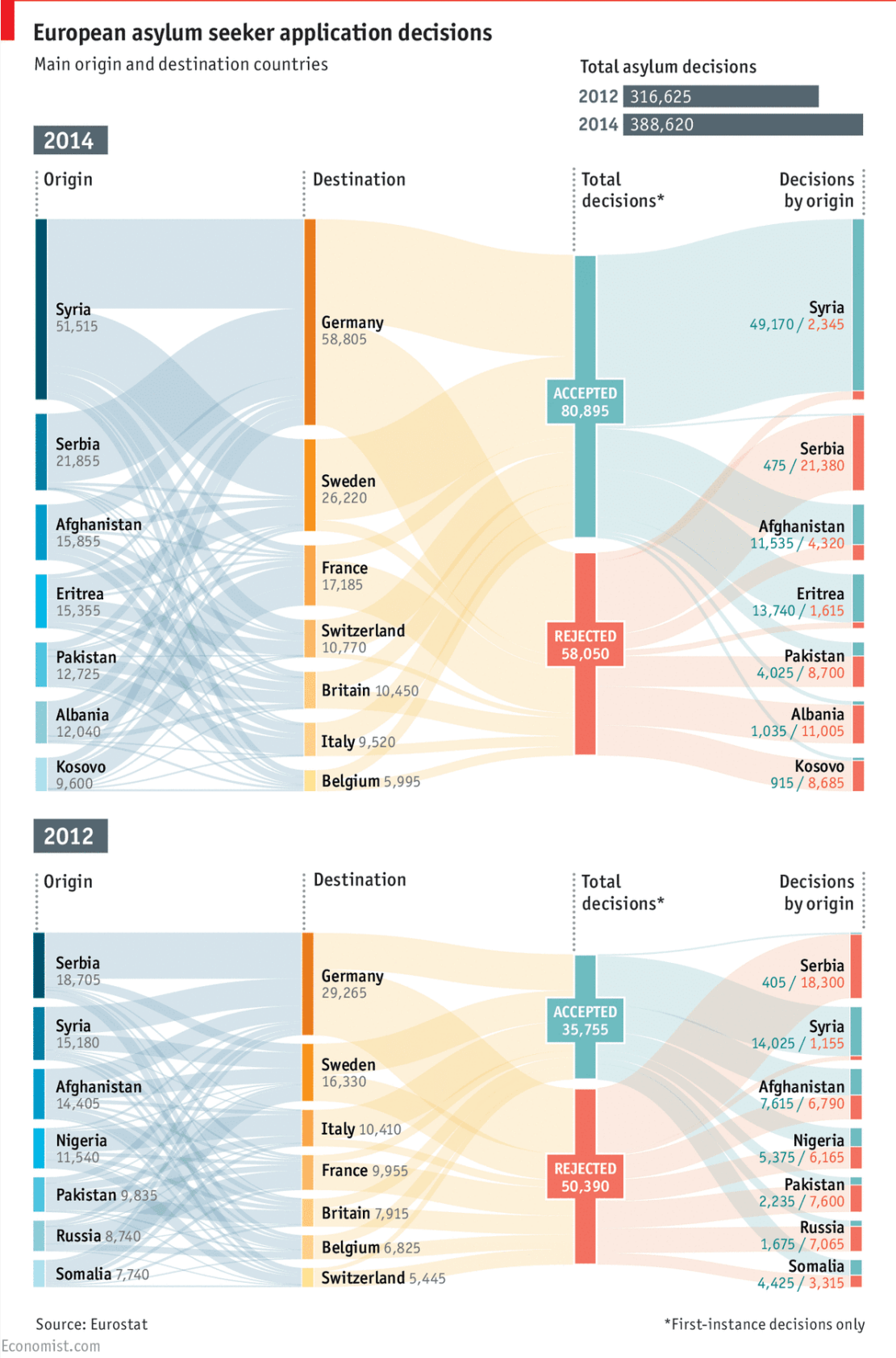
2005-2010



Data: Guy J. Abel and Nikola Sander (2014). Quantifying Global International Migration Flows. Science, 343 (6178)

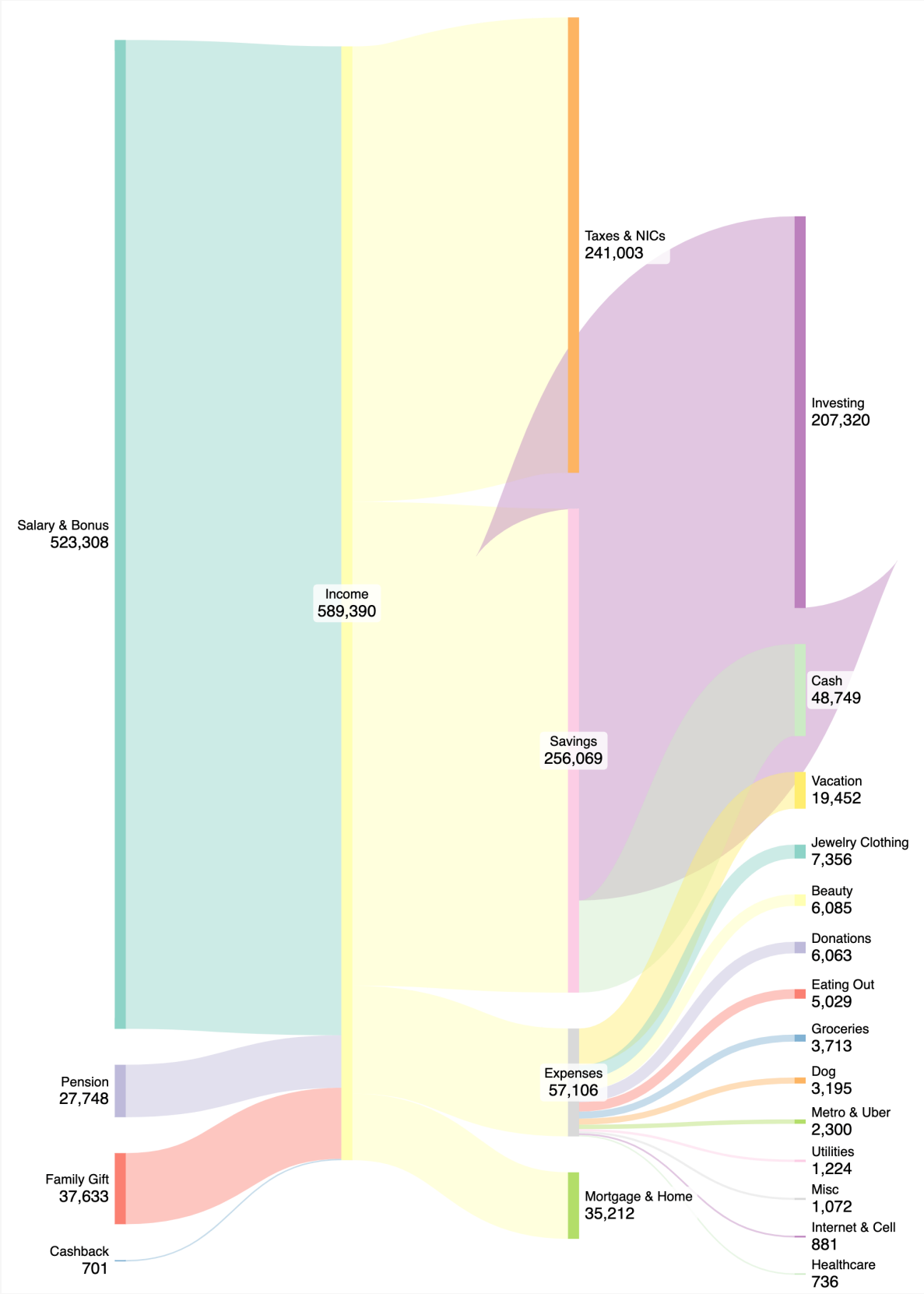
Source: <https://www.flerlagetwins.com/2019/10/arc-sankey.html>

Sankey Diagram



Source: The Economist

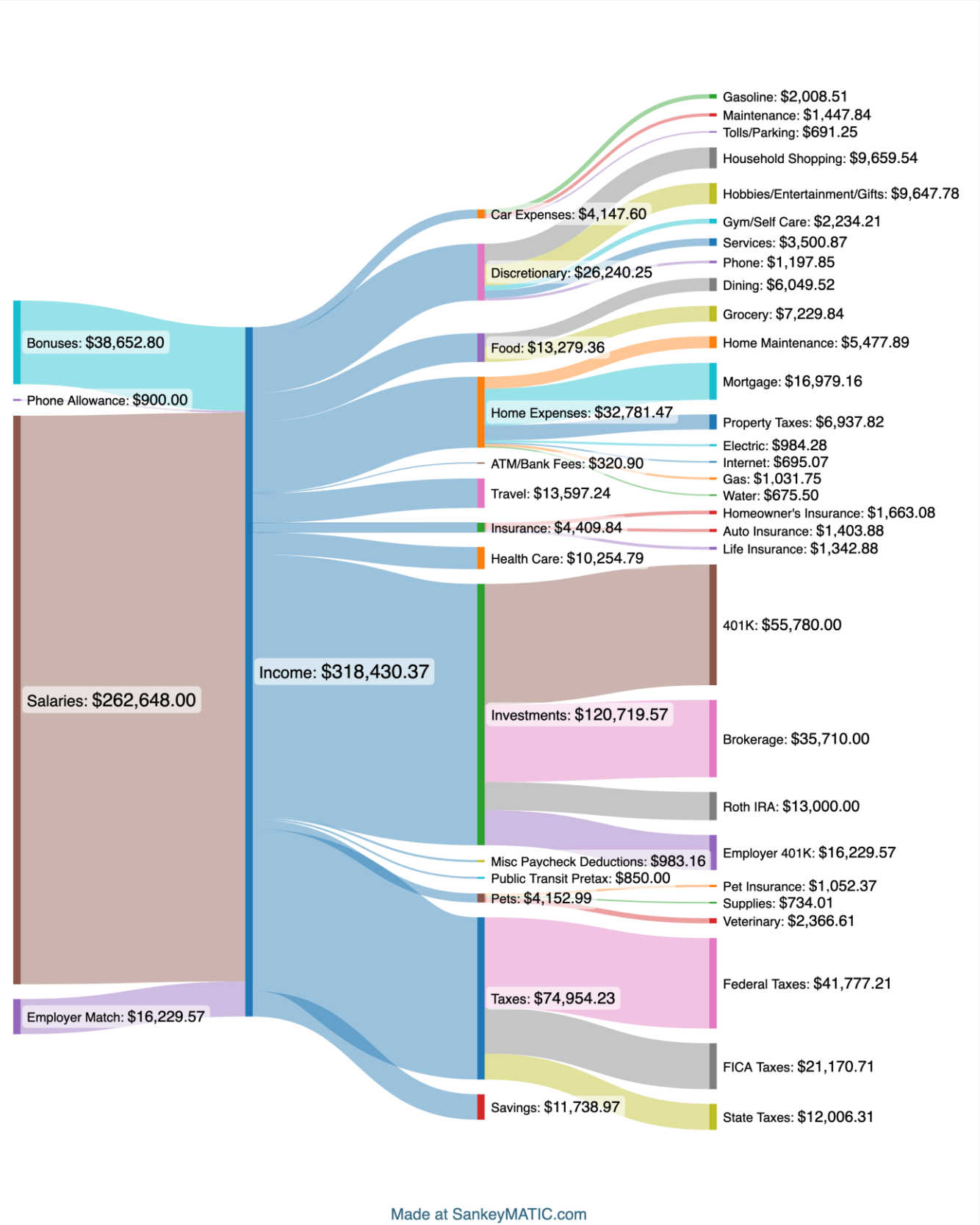
Sankey Diagram



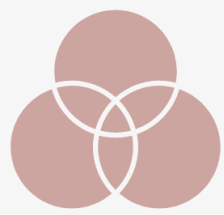
Source: https://www.reddit.com/r/MoneyDiariesACTIVE/comments/19f9zhc/year_in_sankey_review_mid30s_highearner_unmarried/




Sankey Diagram



Source: https://www.reddit.com/r/MoneyDiariesACTIVE/comments/1952isz/i_tracked_all_our_mid30s_dinks_spending_for_2023/



 **SankeyMATIC**

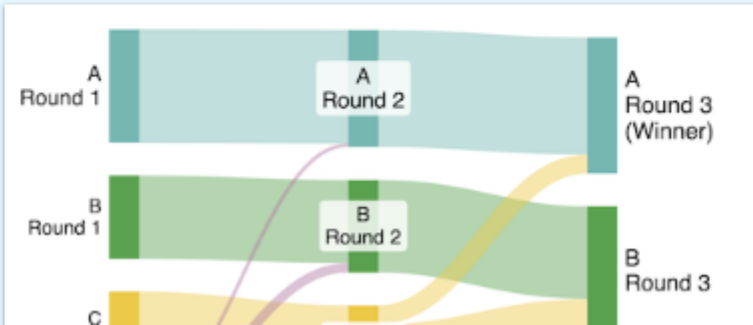

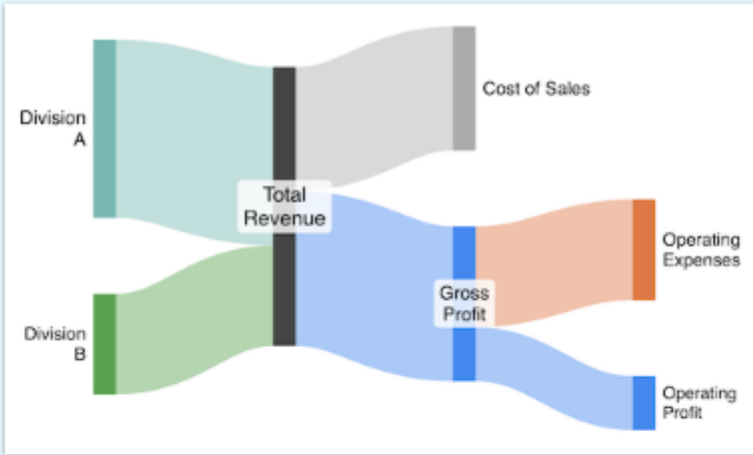
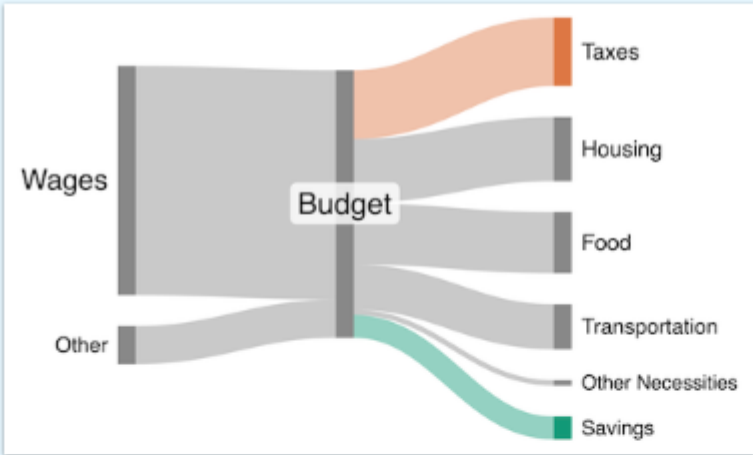
NewsGalleryManualAboutTry it →

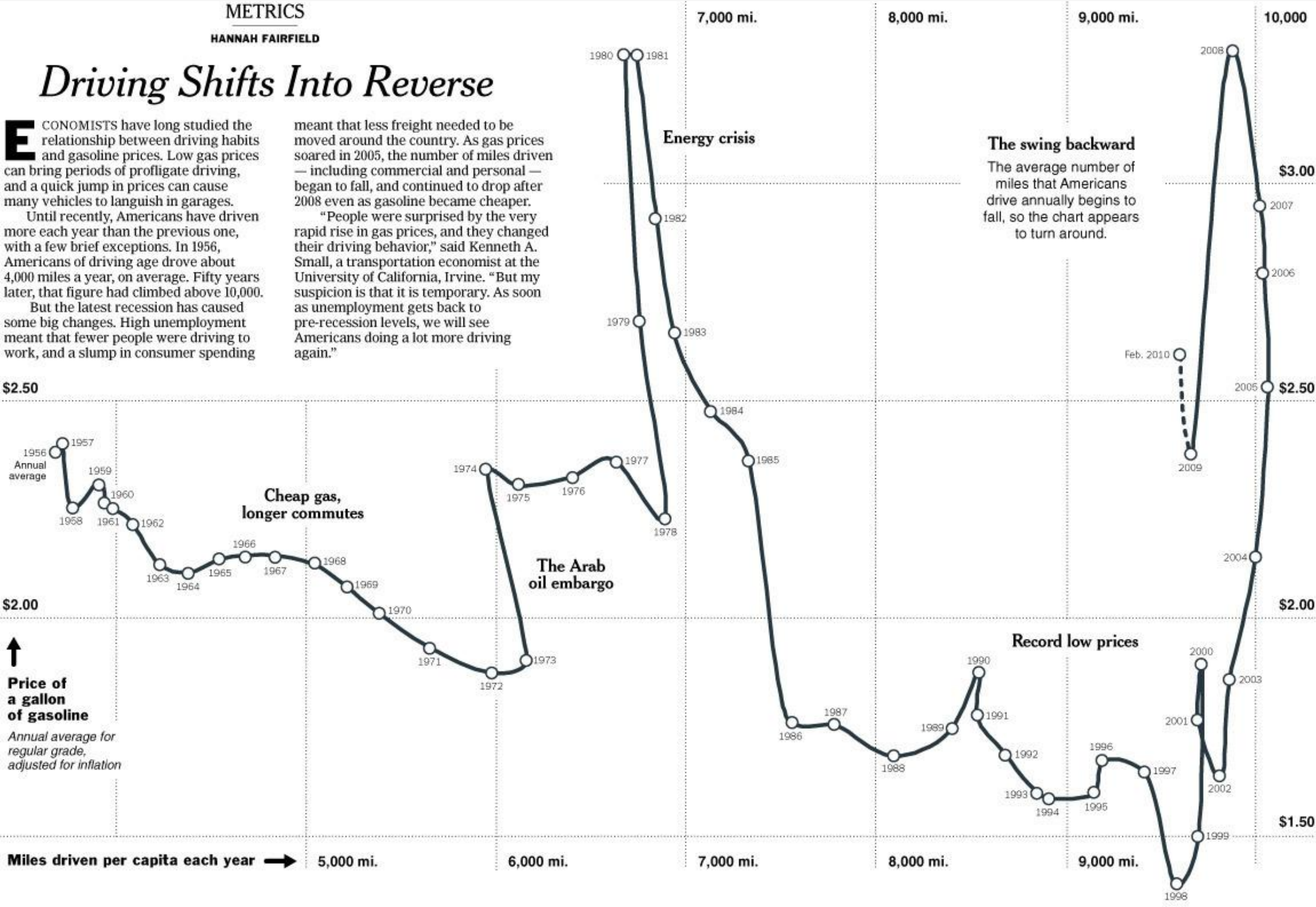
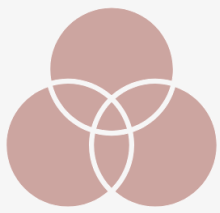
SankeyMATIC

Make beautiful flow diagrams

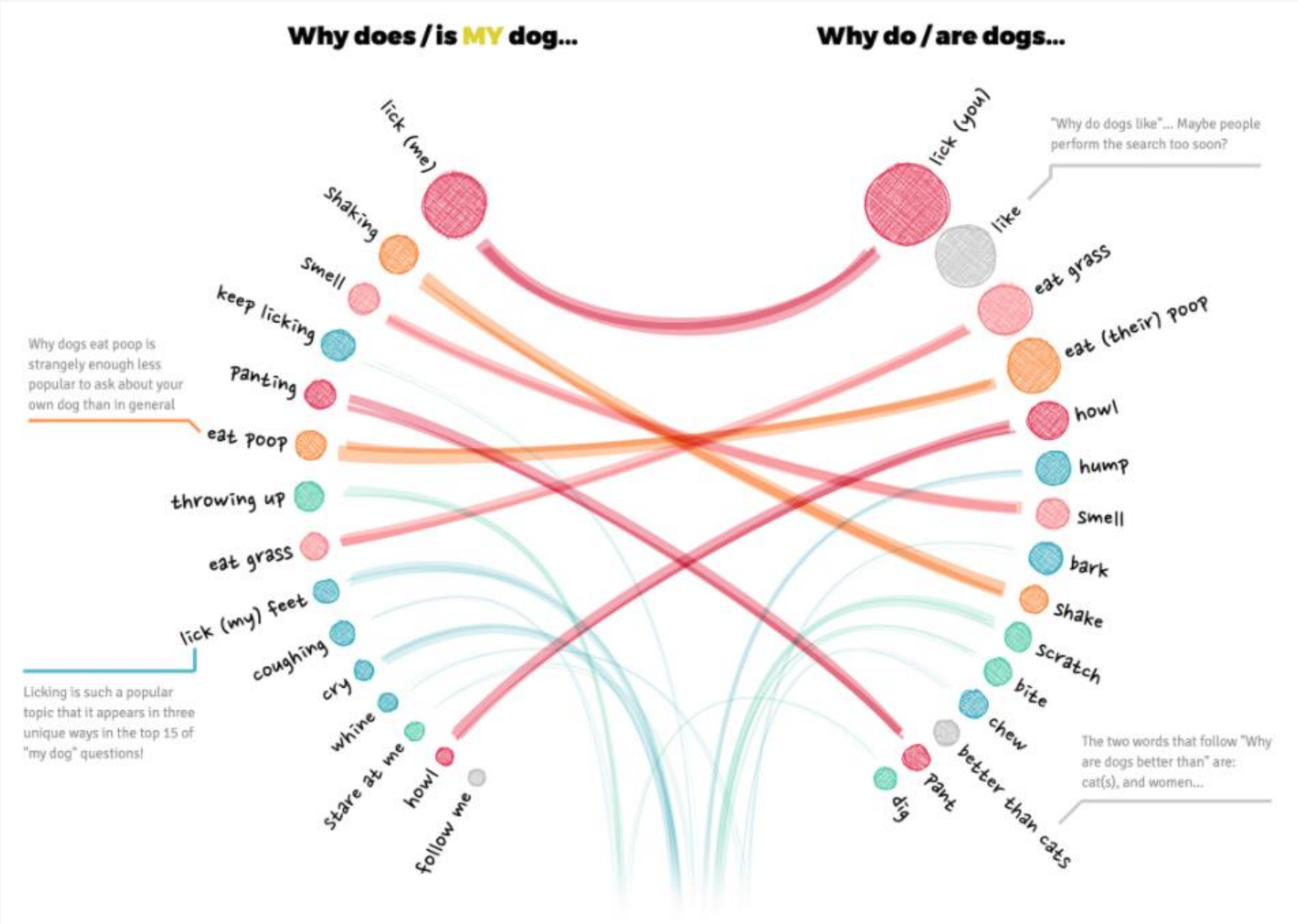
Sankey diagrams are used to **compare amounts** through different **stages**.

They can visualize: budgets, financial results, the story of an application process, elections with multiple rounds, and more.



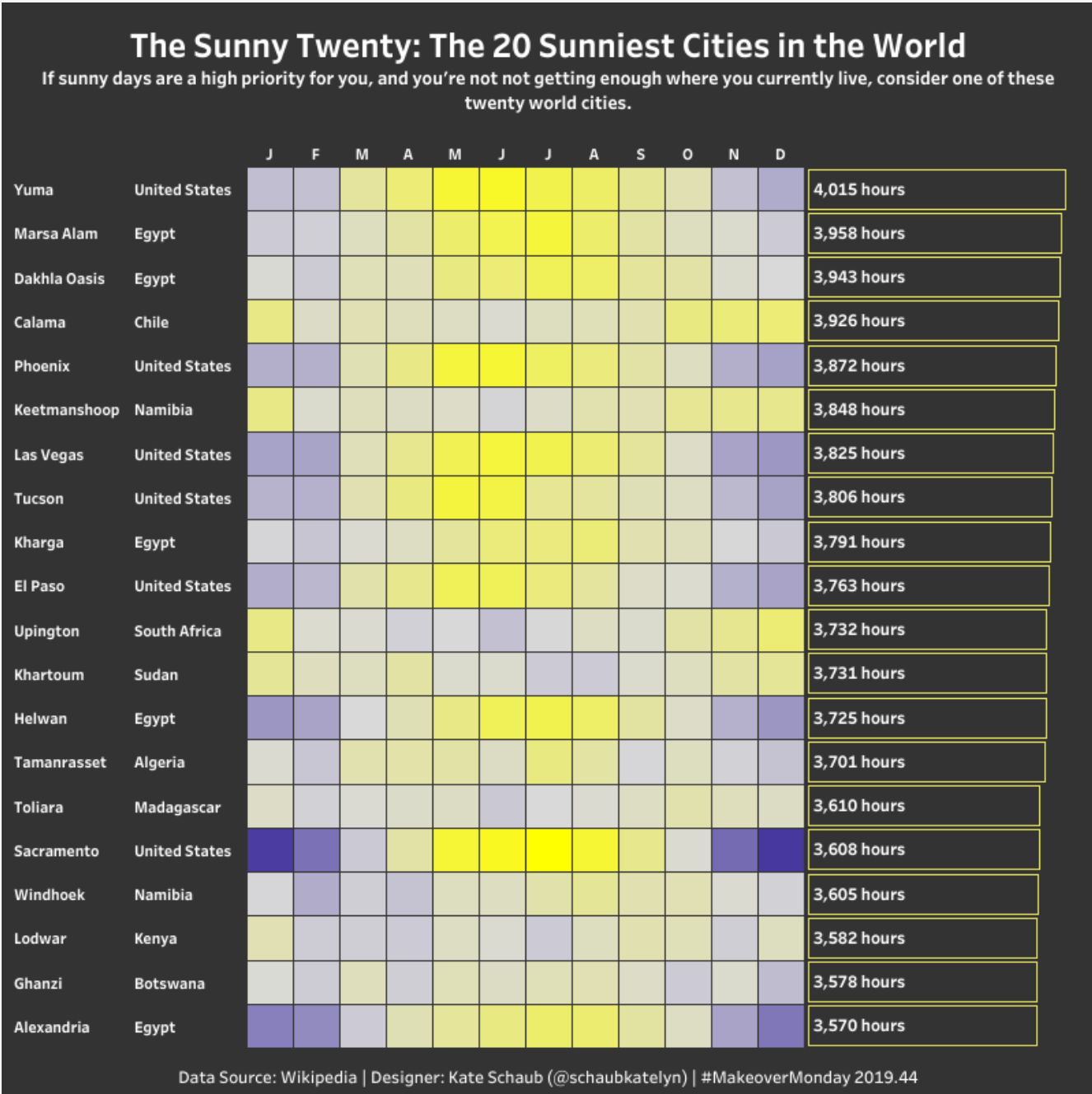


Chord Diagram



Source: <https://www.visualcinnamon.com/portfolio/why-do-cats-and-dogs/>

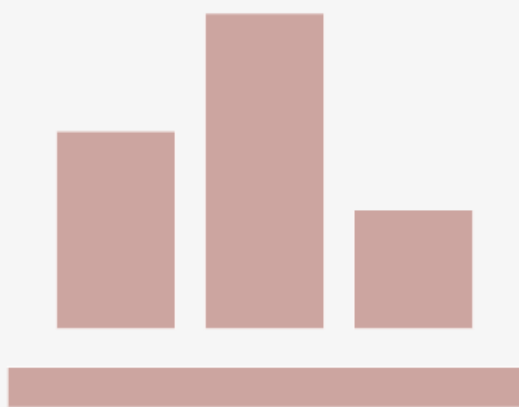
Heatmap



Source: MakeoverMonday



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DISTRIBUTION



TIME



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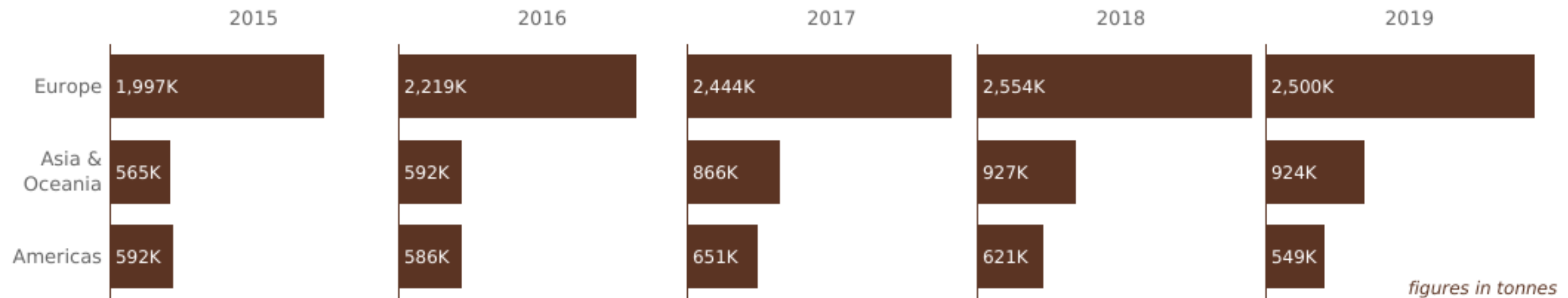
Bar Charts



EUROPE REMAINS BIGGEST IMPORTER OF COCOA BEANS

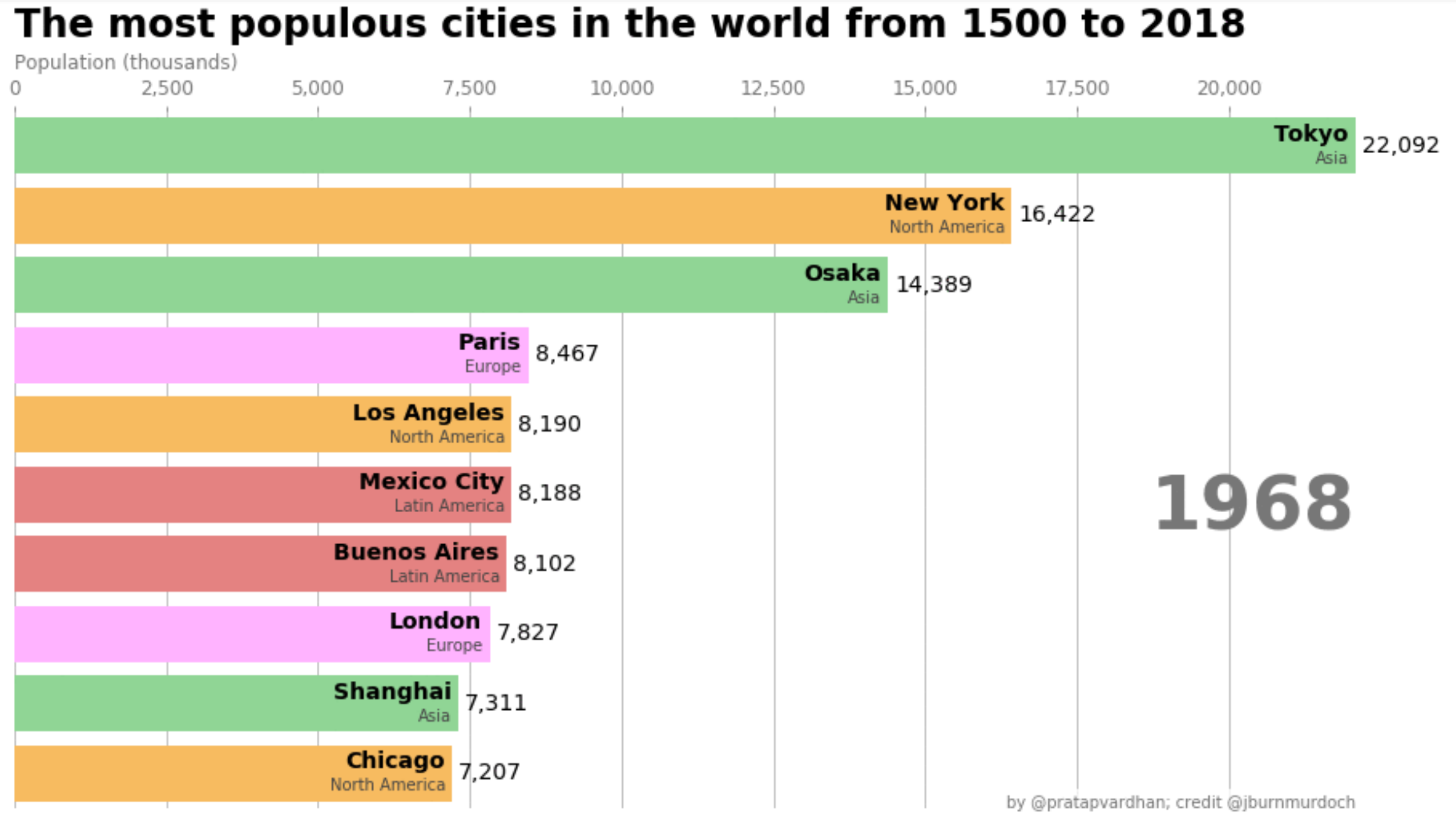
Between 2015 and 2019, Europe continuously imported more cocoa beans than Asia, Oceania and the Americas combined. Imports by European countries grew by 25% over the five year period. Asia & Oceania imported over 63% more, while imports from the Americas fell by 7% in the same period.

Data: CBI (Centre for the Promotion of Imports)
Analysis & Design: Eva Murray | @TriMyData



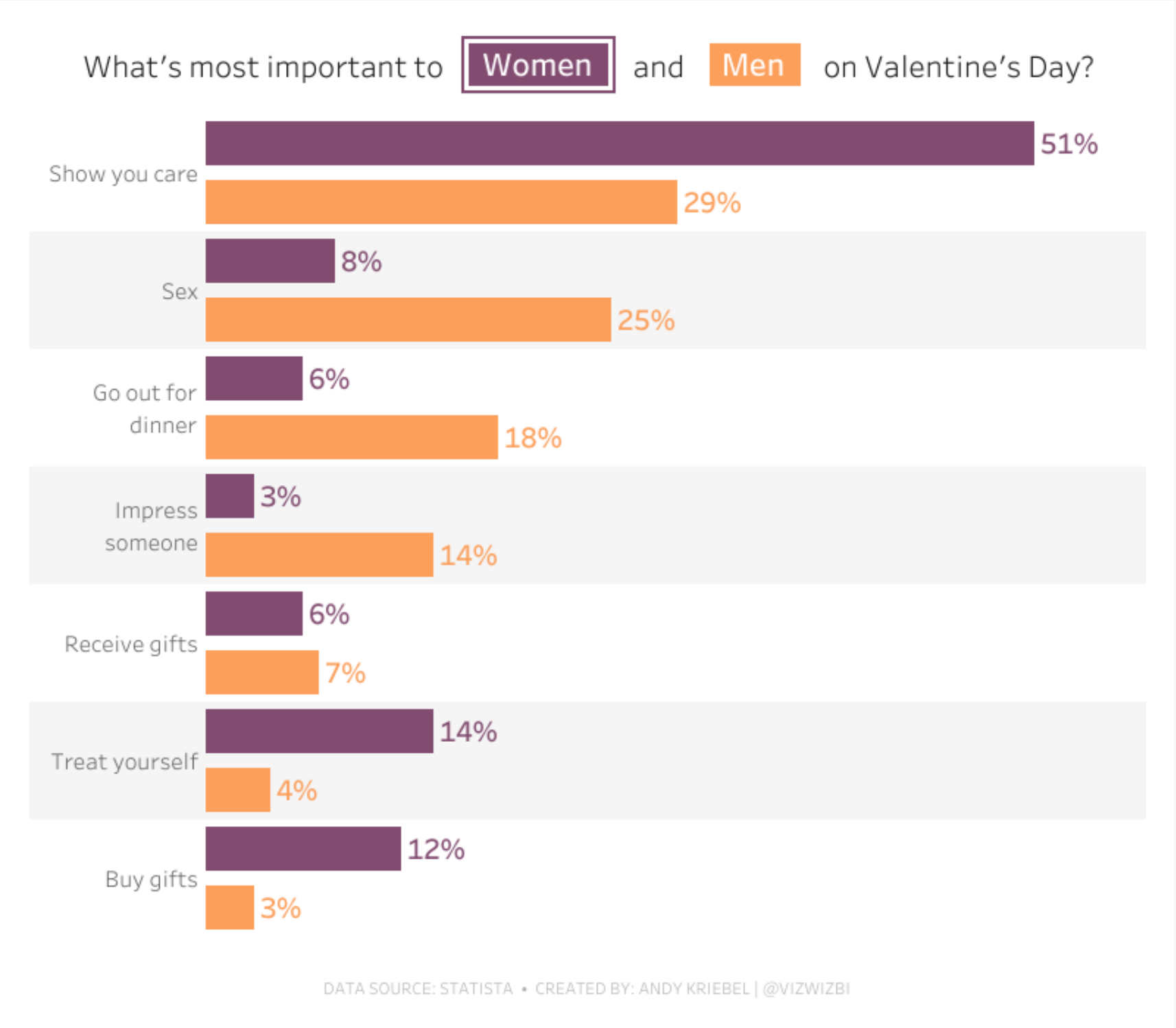
Source: <https://public.tableau.com/profile/eva.murray#!/vizhome/MakeoverMondayWeek522020-CocoaImports/CocoaImports>

Bar Chart Race



Source: <https://towardsdatascience.com/bar-chart-race-in-python-with-matplotlib-8e687a5c8a41>

Paired Bar Charts



Stacked Bar Charts



THE TRUMP DIARIES

A breakdown of how the US president spent his time between 7 November 2018 and 1 February 2019, according to schedules leaked by a White House source...

63

Working Days

479 hours

Total Time

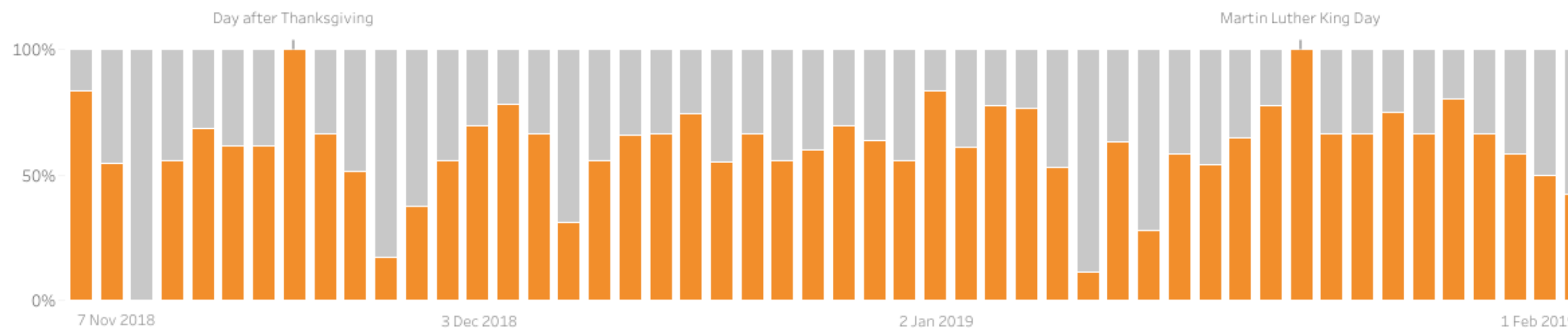
297 hrs

Executive Time

182 hours

Other Time

How much of Trump's time is taken up by **Executive time**?



Data Source: Axios ● ● ● Design: Eva Murray ● @TriMyData

Diverging Bar Charts

JAMES BOND CANNOT BE...

Non-British James Bond is opposed by both sides

REMAIN
voters

LEAVE
voters



Source: YouGov
% of respondents to polls say it is unacceptable for the chracter James Bond to be...

#MakeoverMonday 2020W5
@YanningWang

Diverging Bar Charts

typical choice: stacked bar chart

Current coronavirus worries higher among those who say they know people it infected or killed

How worried are you about COVID-19? (% of US adults)

Very worried Somewhat worried Not very worried Not worried at all

Among those who know someone that died



Among those who were personally infected or know someone who was (but don't know anyone who died)



Among those who don't know anyone who died or was infected



YouGov

Yahoo News / YouGov Poll | March 4-9, 2021 | [Get the data](#)

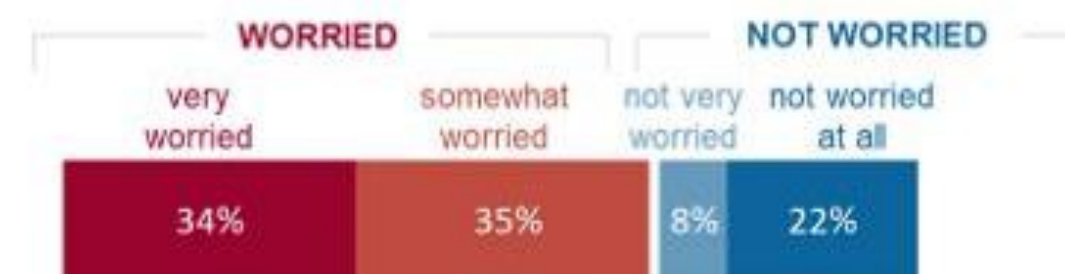
alternative: diverging bar chart

Current coronavirus worries higher among those who say they **know people it infected or killed**

Q: How worried are you about COVID-19?

Among those who ...

...know someone that died



...were personally infected or know someone who was (but don't know anyone who died)



...don't know anyone who died or was infected

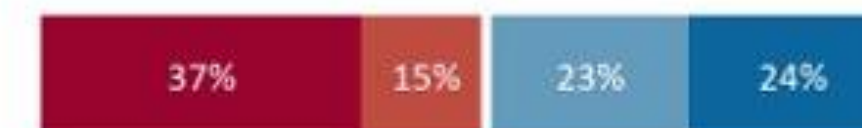
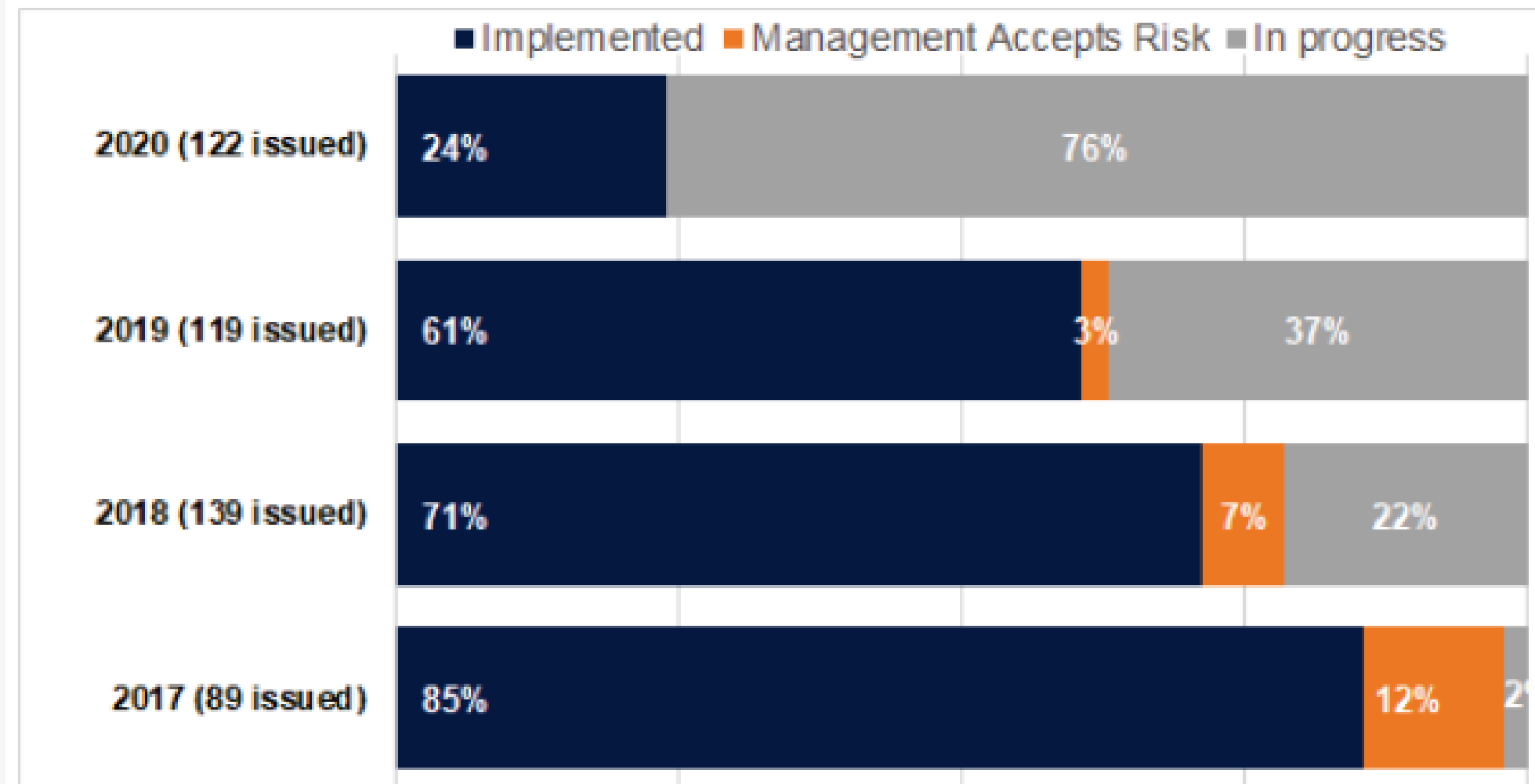


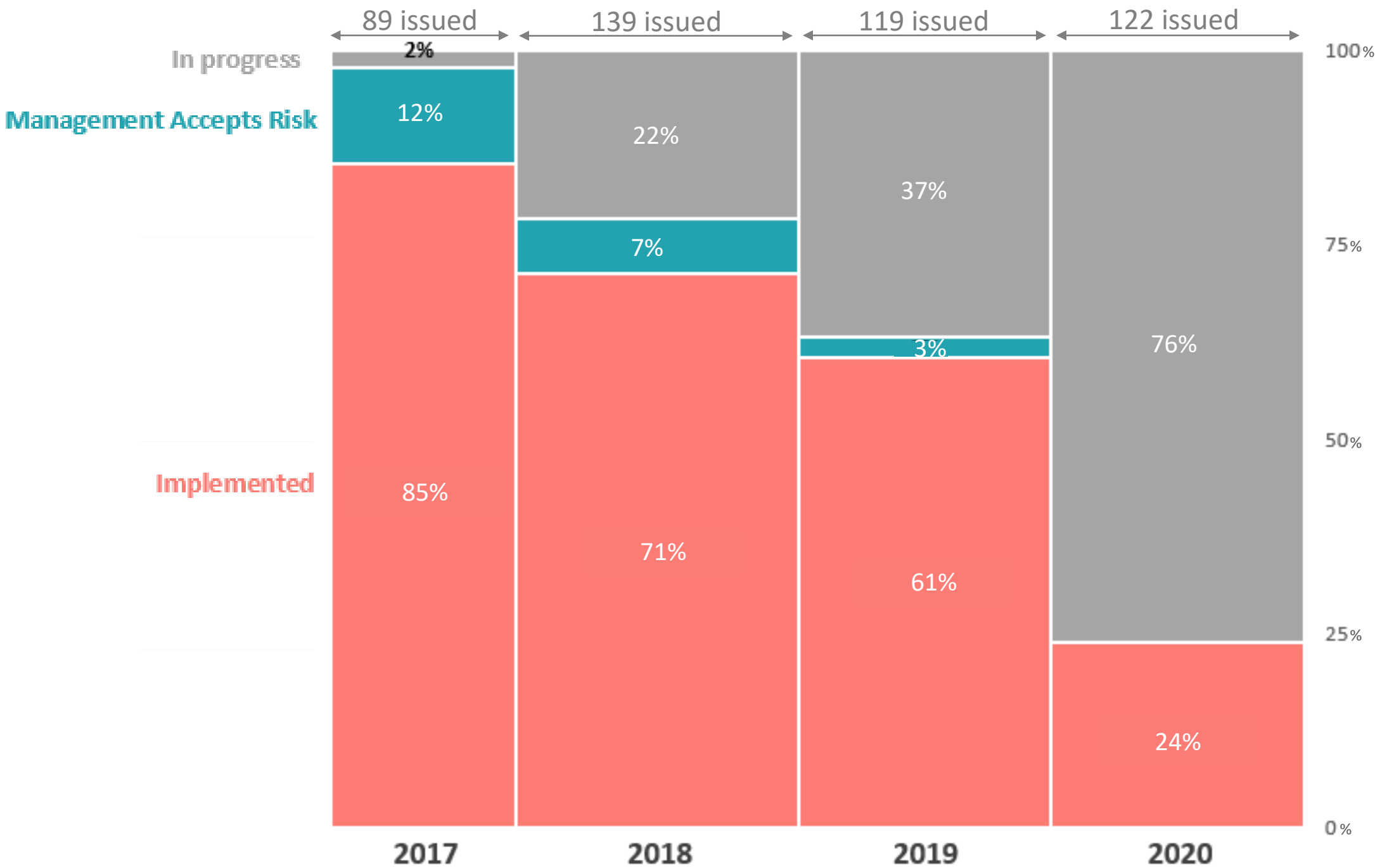
Figure 5: Overall status of Internal Audit Recommendations by year as of 31 December 2020¹⁰



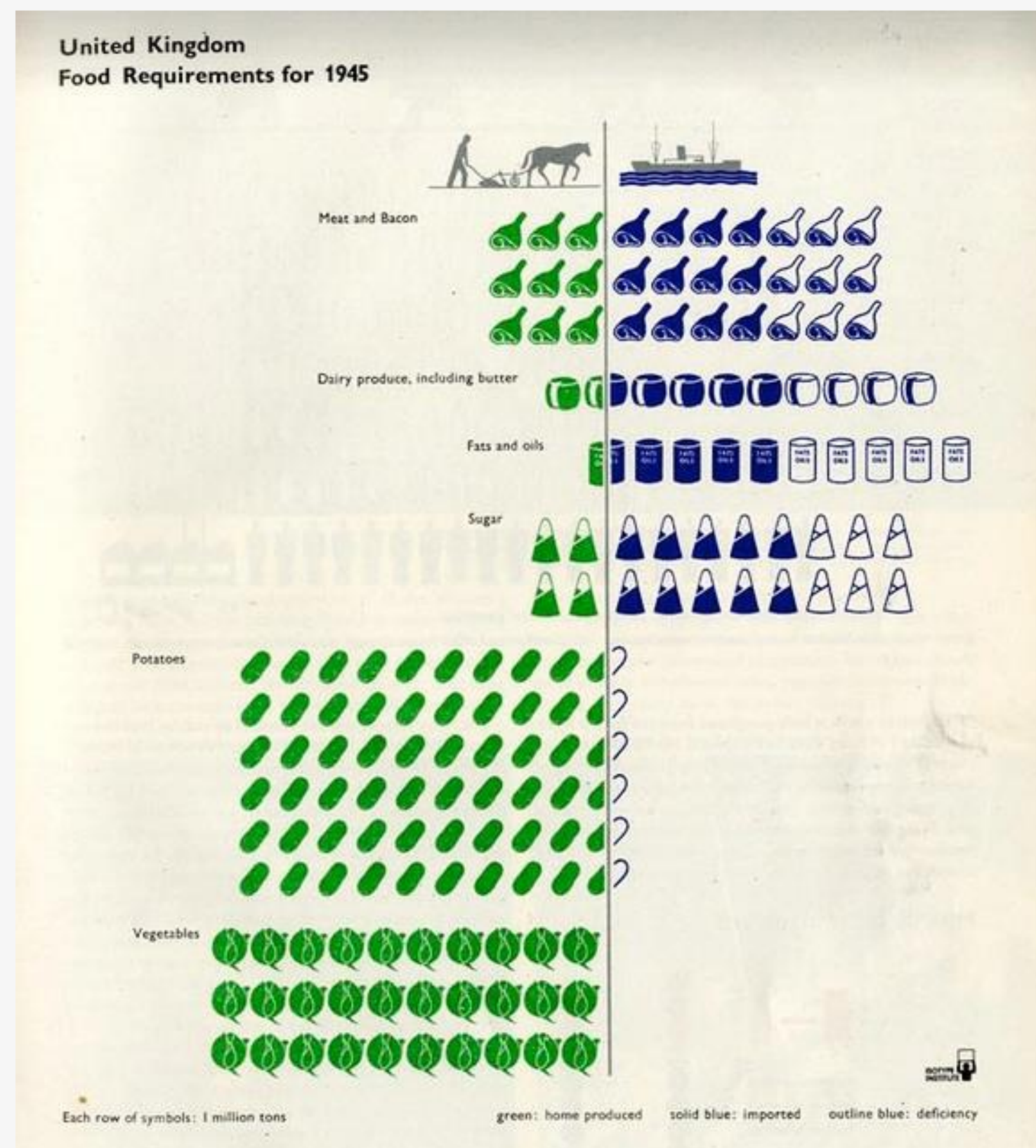
Marimekko

Internal audit recommendations present high implementation rates

Overall status of Internal Audit Recommendations by year as of 31 December 2010



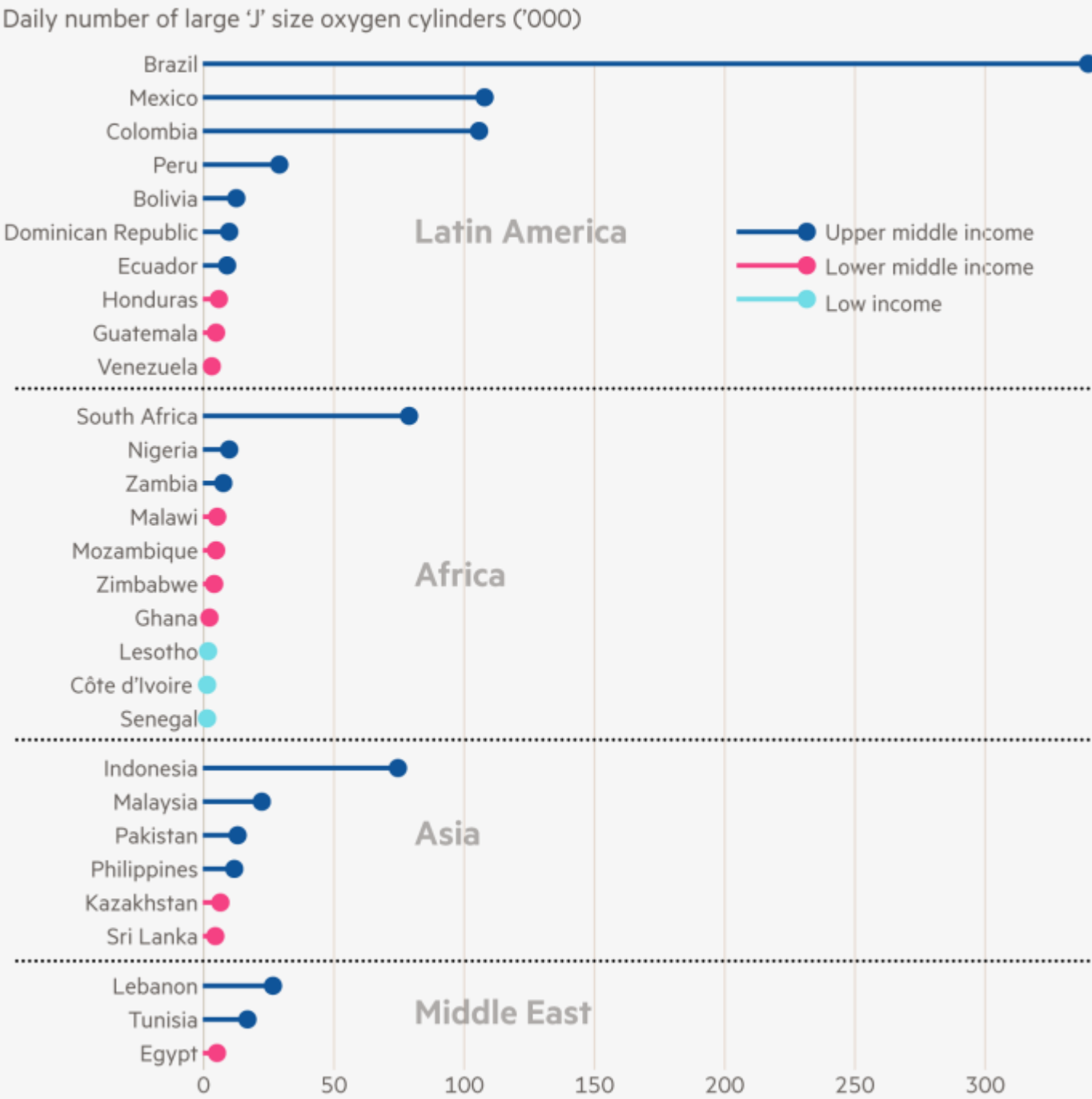
Isotype



Author: Otto Neurath

Lollipop

Low and middle-income countries with high and rapidly rising needs for oxygen to treat Covid-19 patients



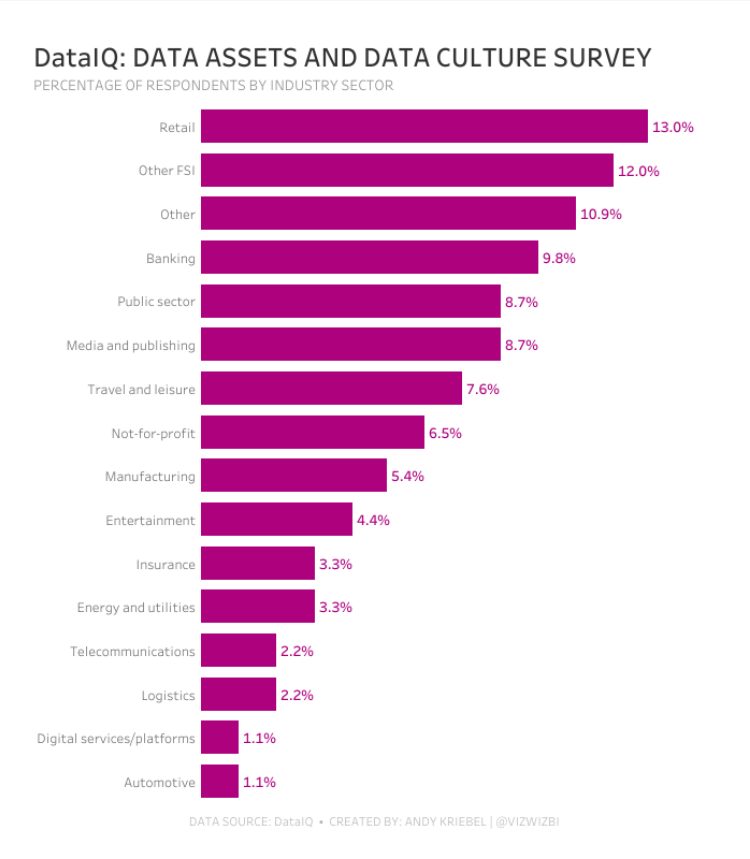
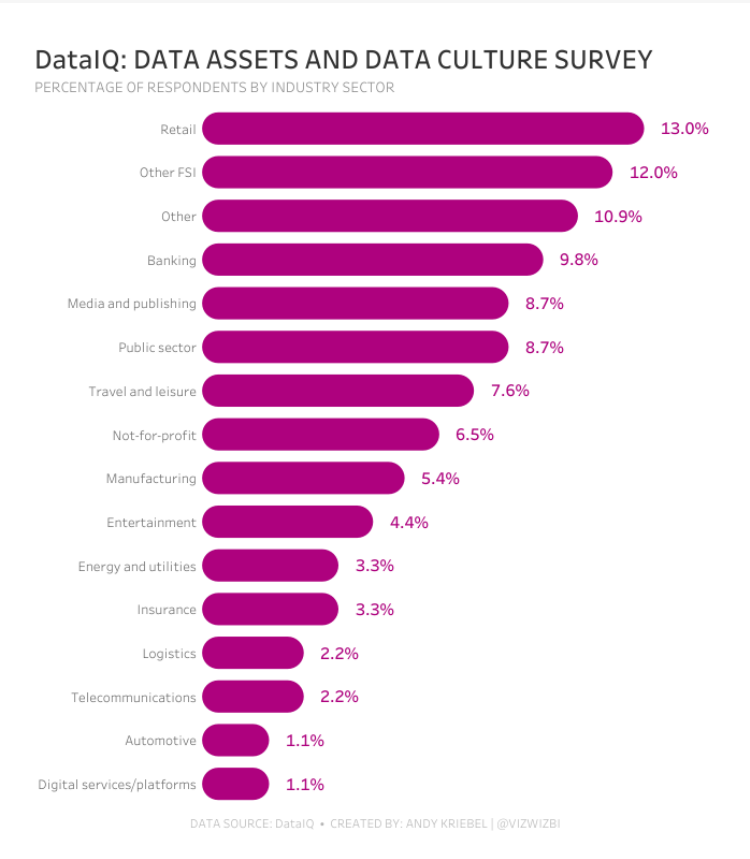
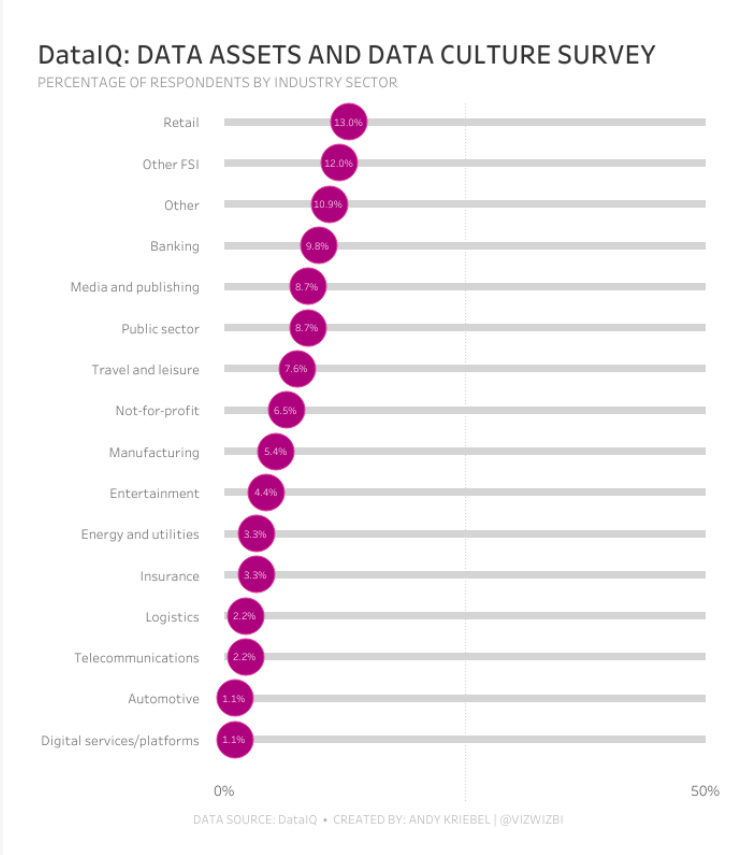
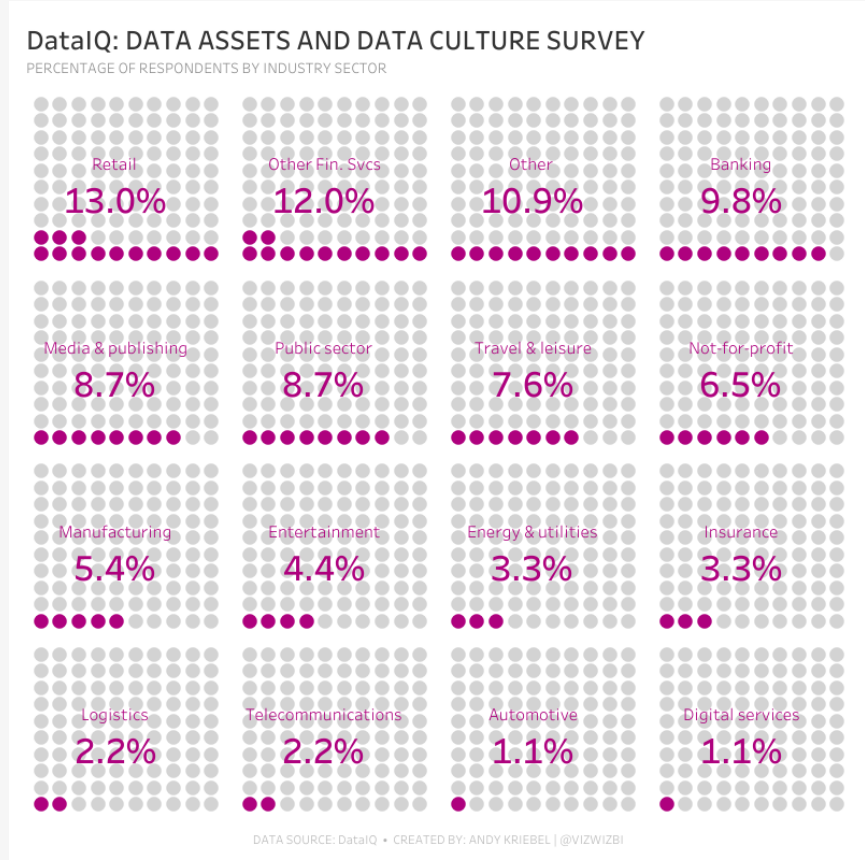
Source: COVID-19 Oxygen Needs Tracker, Jan 25 2021
© FT

Waffle Chart

Dot Plot

Rounded Bar Chart

Bar Chart



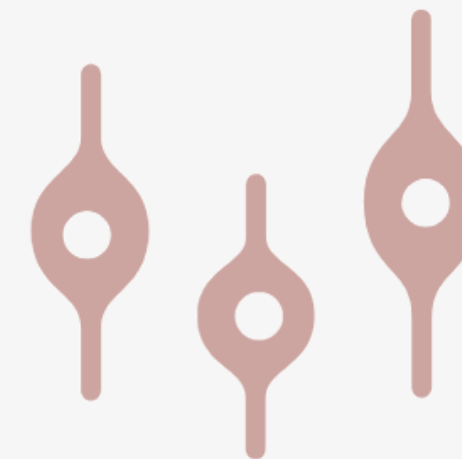
Source: <https://public.tableau.com/profile/andy.kriebel#!/vizhome/MakeoverMondayWeek41-DataAssetsandDataCultureSurvey/BarChart>



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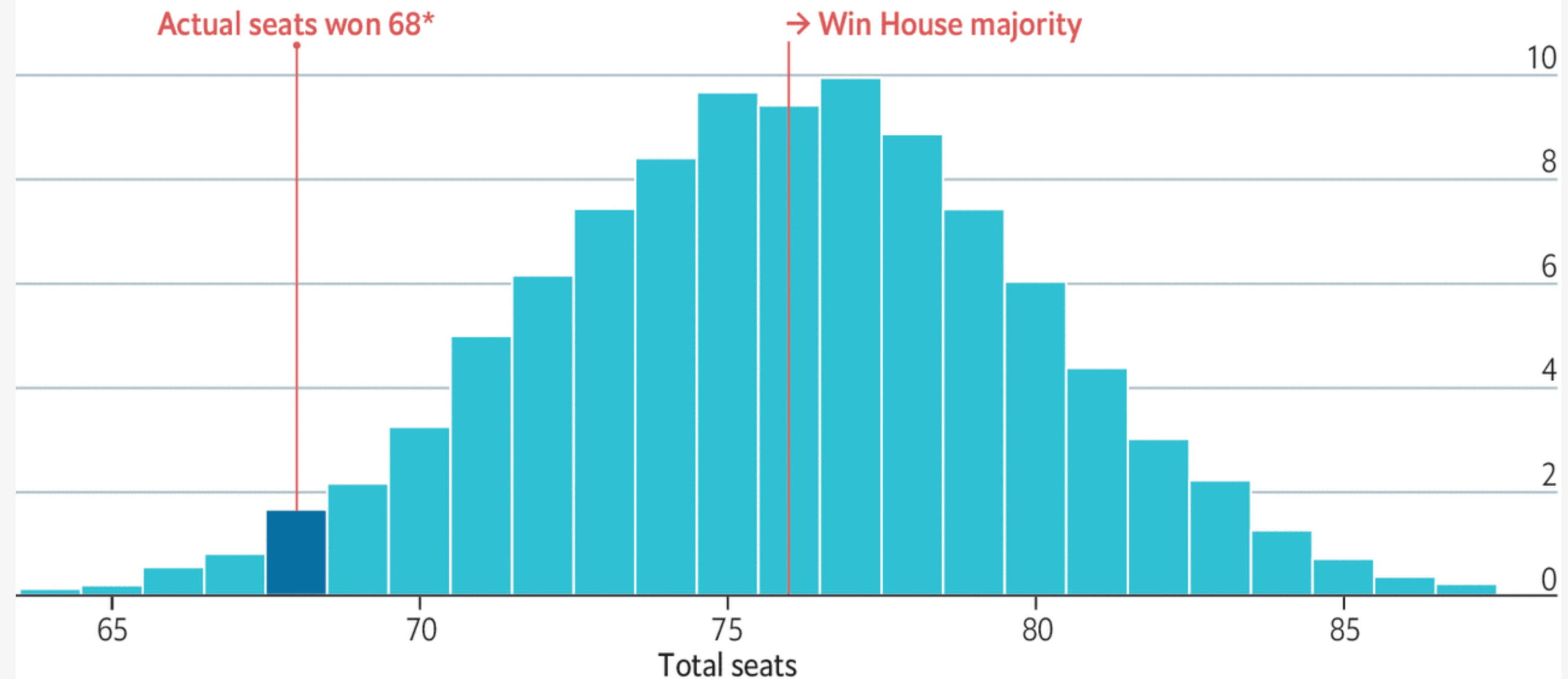


GEOSPATIAL

Histogram

Labor pains

Australian House of Representatives, probability of Labor and the Greens seat total, 2019, %



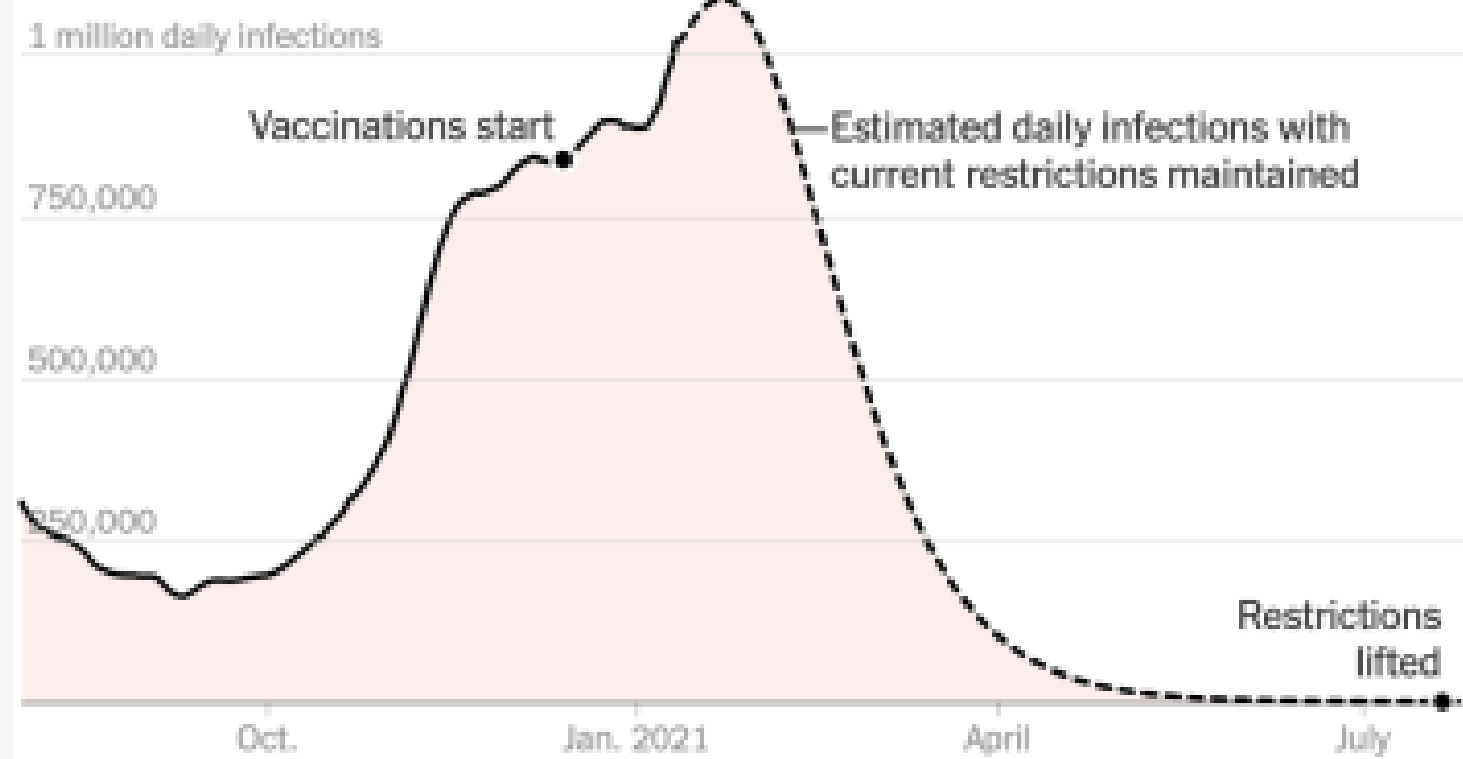
Source: Peter Ellis
The Economist

*According to ABC projections on May 21st 2019

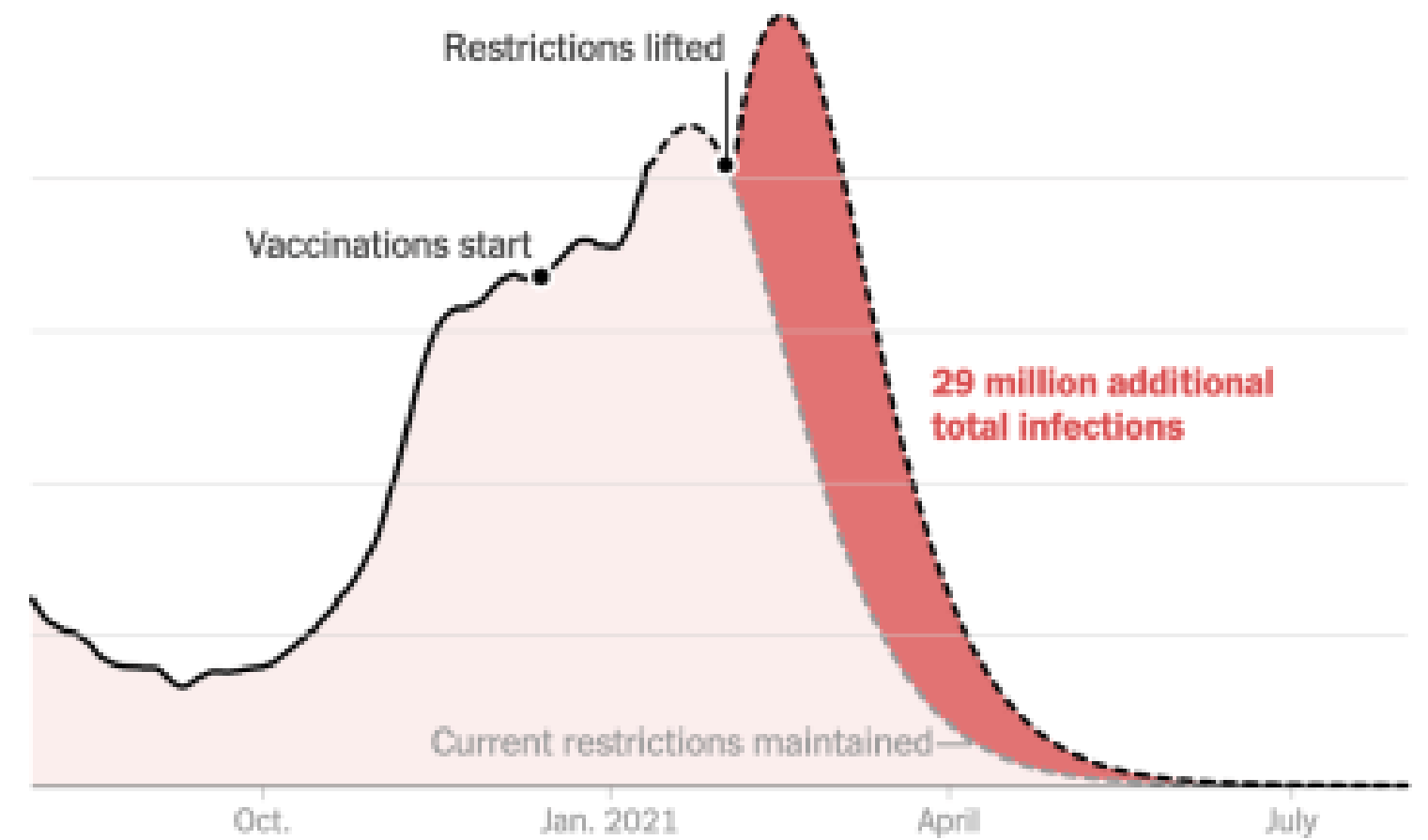
Density Plot



If current restrictions remain in place until late July

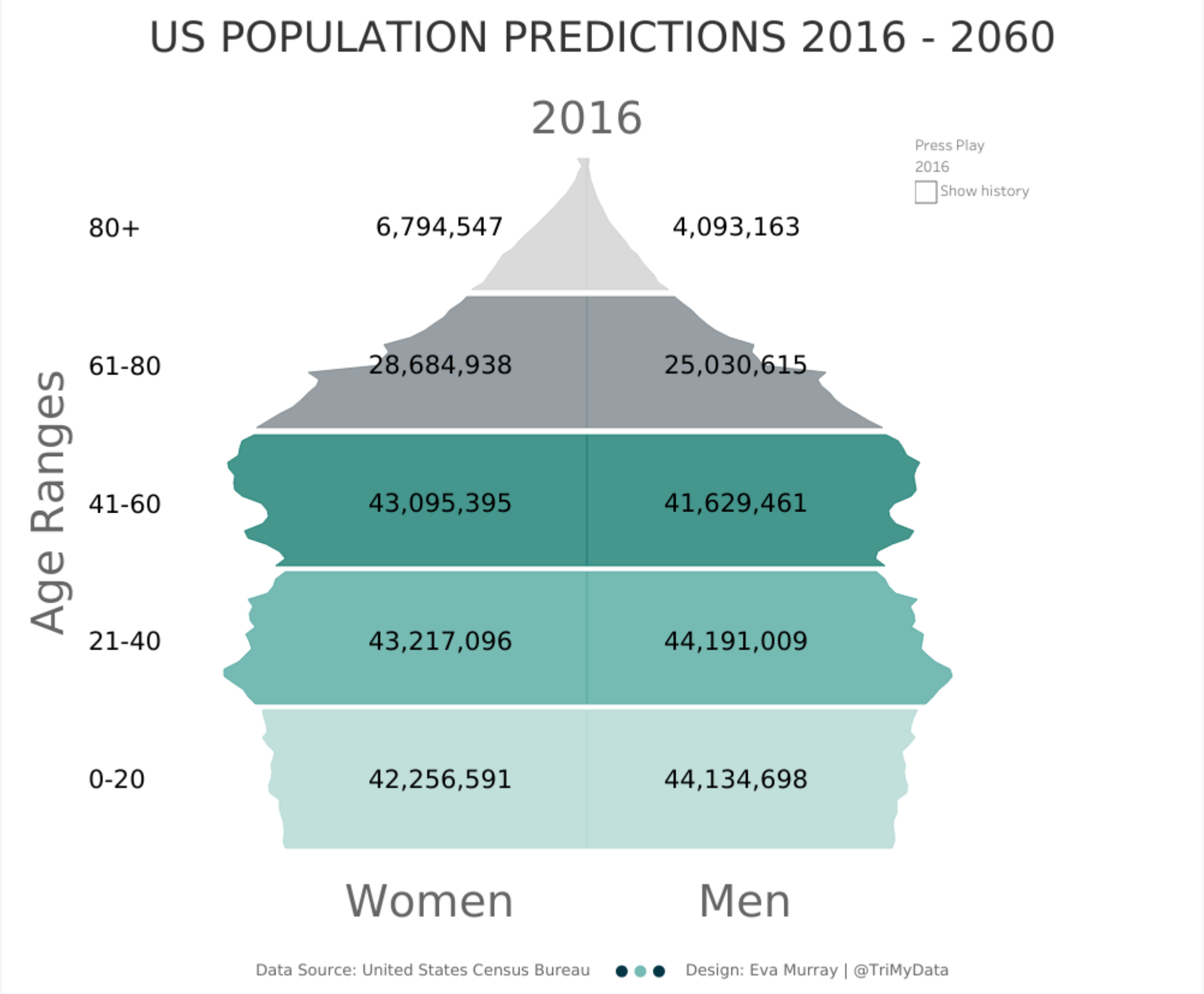


If restrictions are lifted in February



Source: <https://www.nytimes.com/interactive/2021/01/24/us/covid-vaccine-rollout.html>

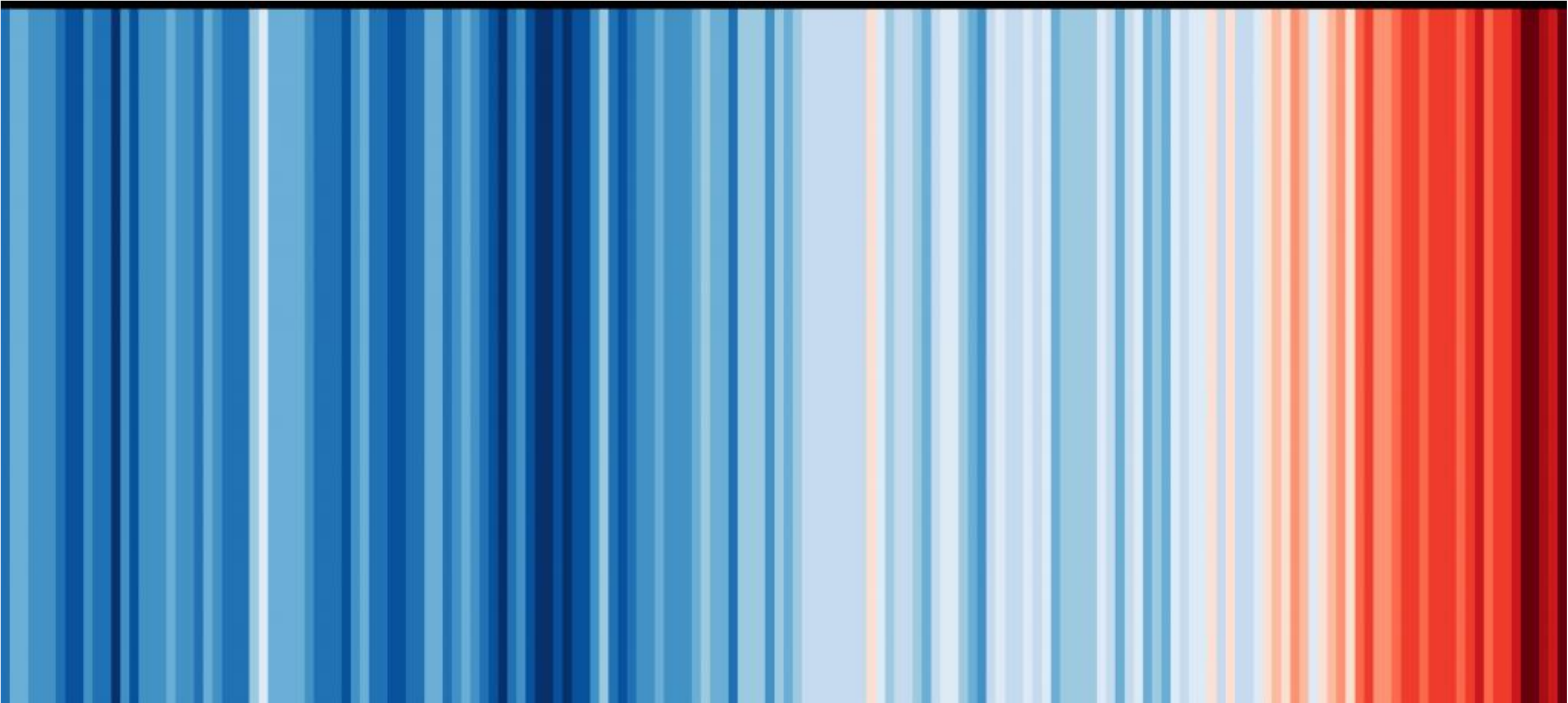
Pyramid Chart



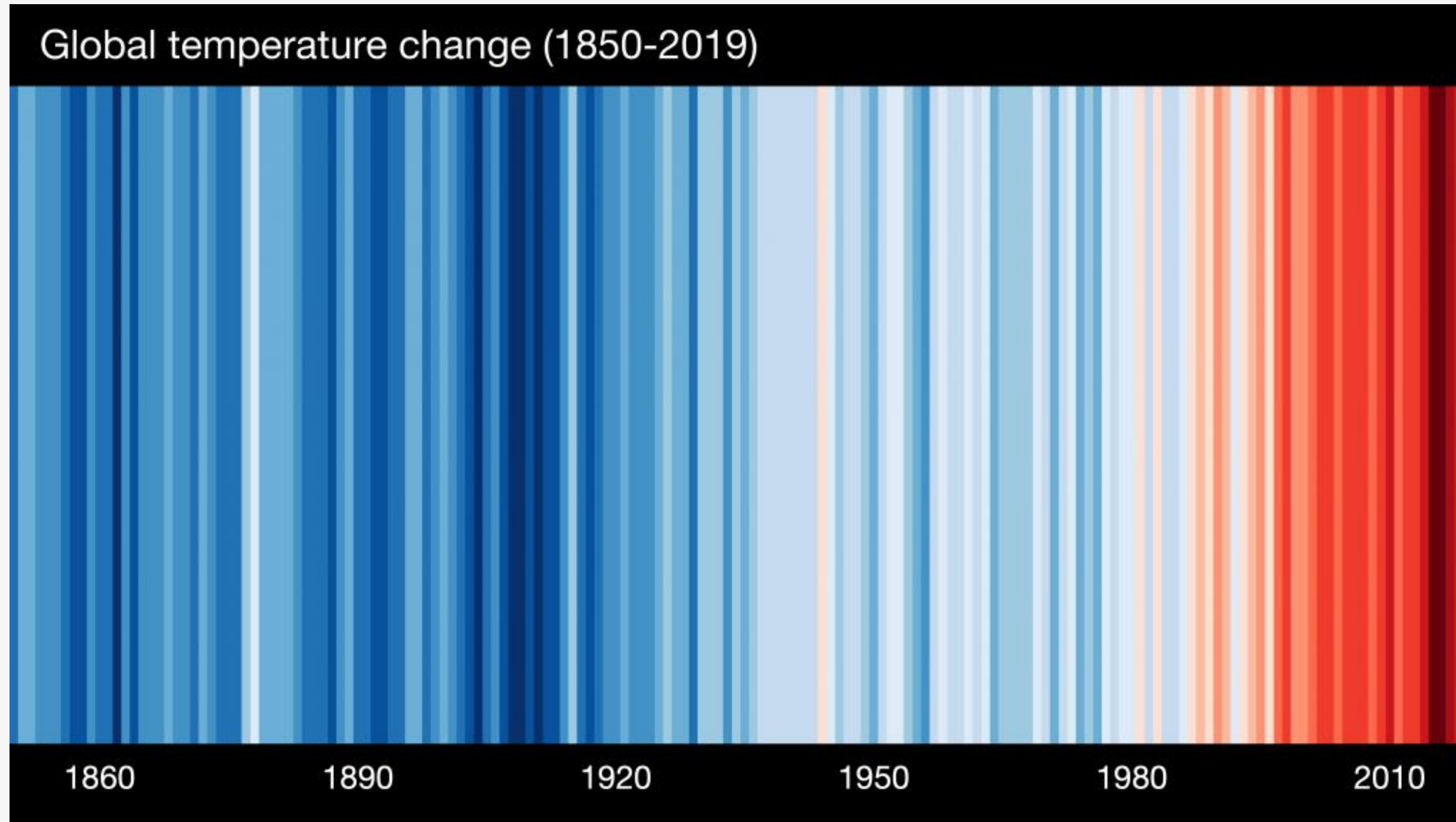
Source: https://public.tableau.com/profile/eva.murray#!/vizhome/PopulationEstimates_7/PopulationPredictions



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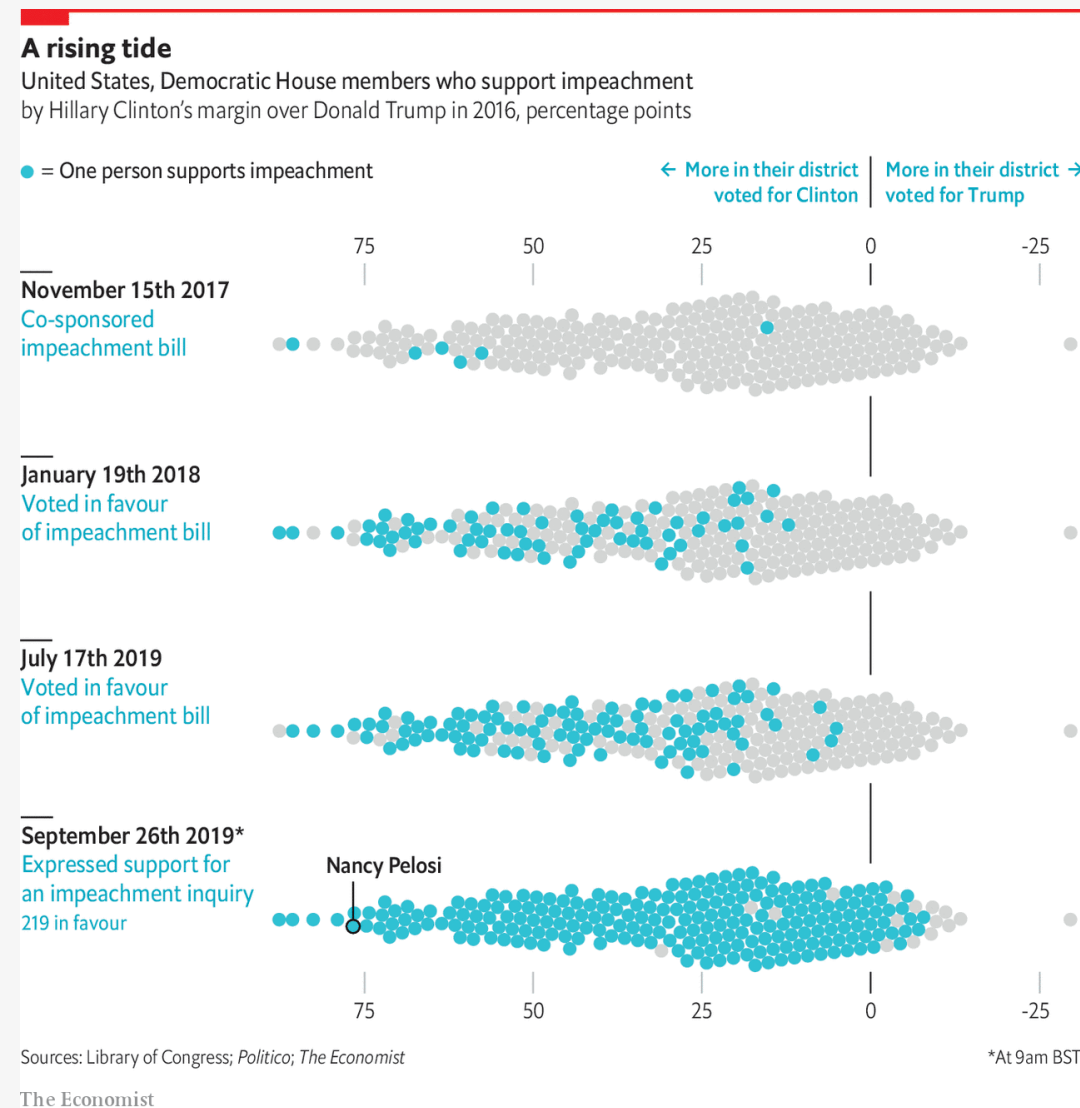


Barcode Plot



Source: <https://showyourstripes.info/>

Beeswarm Plot



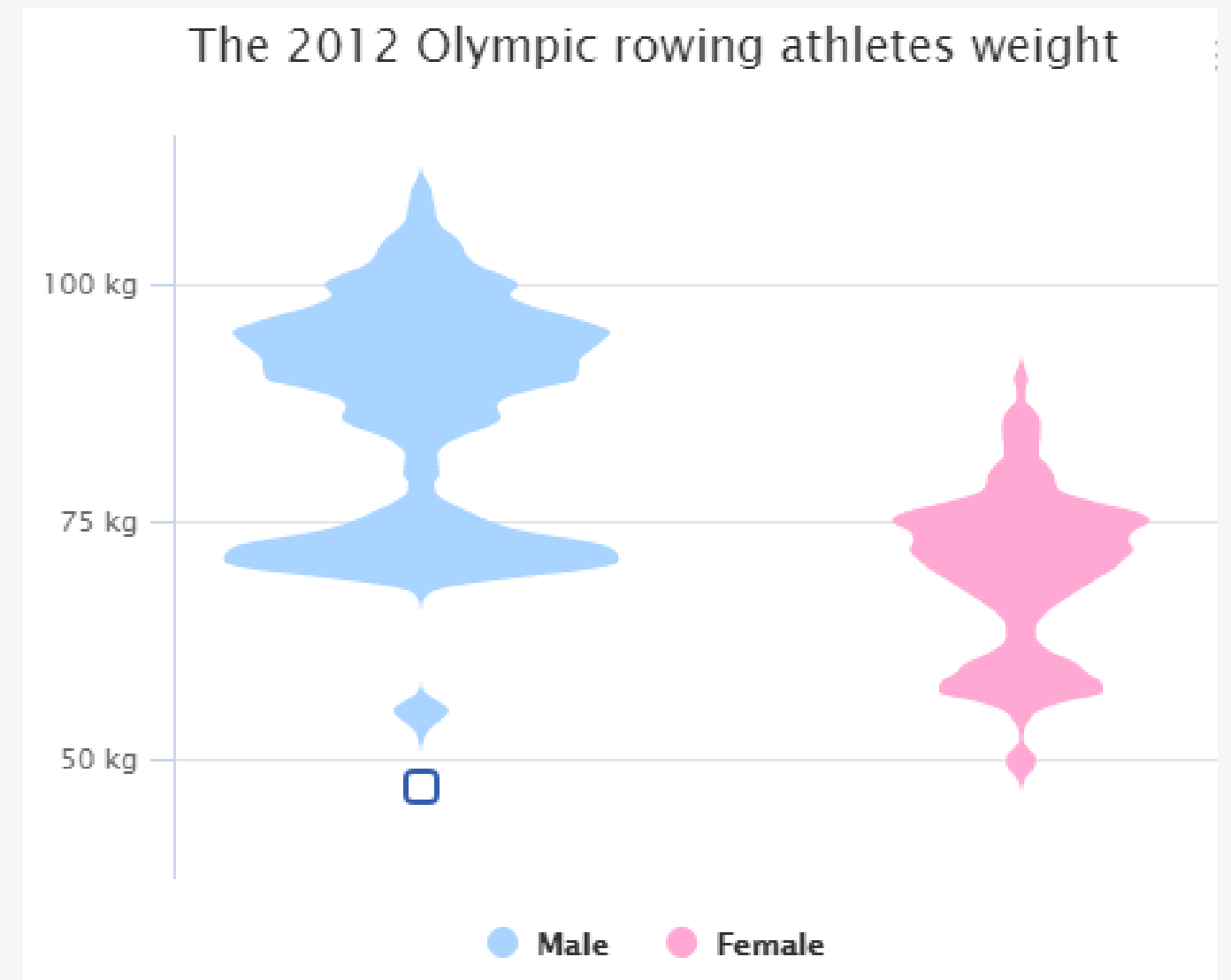
Source: The Economist

Box-and-Whisker Plot



Source: <https://flowingdata.com/2013/06/12/what-the-sexes-want-in-speed-dating/>

Violin Plot



Source: <https://www.highcharts.com/blog/tutorials/violin-plot-with-highcharts/>



EXERCISE

Use the Maven Family Leave Challenge and data set to:

- 1) select 3 chart types that you could use to visualize the data**
- 2) write down the pros and cons of each chart type (remember: all charts are a compromise!)**
- 3) after evaluating the pros and cons, visualize your top chart choice in Tableau.**

If you think it makes sense given the data and the specific challenge given, you're encouraged to explore more advanced graph types for this exercise.

Share your answers and your Tableau chart on Canvas.



Challenge Objective

For this challenge, you'll be working as a Data Visualization Specialist at an online business journal. Your role is to create charts, visuals, and infographics as supporting content for articles.

As part of Women's History Month in the United States, your company is writing a piece on parental leave policies across the business world and they need you to **create an impactful visual** using the data you collected.

About The Data Set

Crowdsourced parental leave data from 1,601 companies across different industries, including paid/unpaid maternity and paternity leave weeks.



Parental Leave Policies

Crowdsourced parental leave data from 1,601 companies.

Download



CSV

File type

Single table

Data structure

1601

of records

6

of fields

Source: <https://mavenanalytics.io/challenges/maven-family-leave-challenge/2>