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## Visual Journalism

December 2020

# We'll cover:

- What is a "Graphics Editor"
- My background
- Walkthrough of two projects:
  - "How a no-deal Brexit threatens your weekly food shop (The Guardian)"
  - "Where Americans Didn't Stay Home Even as the Virus Spread" (The New York Times)
- Q&A

# What is a "Graphics Editor"?

# What is a "Graphics Editor"?

Team member's skills often fall into 3 areas

Reporting

- Interviewing
- Writing
- Editing

Design

- Designing bespoke pages for the website, such as election live results trackers and special projects
- Designing graphics in Adobe Illustrator
- Designing print pages
- Illustrating

Data and software development

- HTML/CSS/Javascript expertise to build interactive data visualisations
- Data analysis skills in R/Python
- Building virtual reality experiences

# Types of projects we do:

How The Virus Won
https://www.nytimes.com/interactive/2020/us/coronavirus-spread.html

Election results 2020:
https://www.nytimes.com/interactive/2020/11/03/us/elections/results-president.html

What Happens When the Election Results Are Contested:
https://www.nytimes.com/interactive/2020/11/03/us/politics/election-results-contested-disputed.html

The New York Times

# My background

- Don't have a degree in journalism – I studied Mechanical Engineering

- Editor of my university's student newspaper

- Joined The Guardian as a Software Engineer on a graduate program

- Moved into the newsroom as an Interactive Developer

- Progressed to become a Visual Projects Editor

- Moved to the New York Times to be a Graphics Editor in February 2020

# How a no-deal Brexit threatens your weekly food shop

https://www.theguardian.com/politics/ng-interactive/2019/aug/13/how-a-no-deal-brexit-threatens-your-weekly-food-shop

# How the project was created

- **Started with a question**
  - "How dependent is the UK on EU food imports?"
- **Initial reporting and research**
  - Ongoing campaigns for the UK to become more self-sufficient in food
  - UK's self-sufficiency has been declining over the last few decades
- **Sourced a dataset**
  - UN's 'Food and Agriculture Organisation' tracks food trade between all countries, and releases public datasets each year

The New York Times

## Production

Crops
Crops processed
Live Animals
Livestock Primary
Livestock Processed
Production Indices
Value of Agricultural Production

## Trade

Crops and livestock products
Live animals
Detailed trade matrix
Trade Indices

## Food Balance

New Food Balances
Food Balances (old methodology and population)
Commodity Balances - Crops Primary Equivalent
Commodity Balances - Livestock and Fish Primary Equivalent
Food Supply - Crops Primary Equivalent
Food Supply - Livestock and Fish Primary Equivalent

## Food Security

Indicators from Household Surveys (gender, area, socioeconomics)
Suite of Food Security Indicators

## Prices

Producer Prices
Producer Prices (old series)
Consumer Price Indices
Deflators
Exchange rates - Annual

## Inputs

Fertilizers by Nutrient
Fertilizers by Product
Fertilizers archive
Pesticides Use
Pesticides Trade
Land Use
Employment Indicators

## Population

Annual population

## Investment

Machinery
Machinery Archive
Government Expenditure
Credit to Agriculture
Development Flows to Agriculture
Foreign Direct Investment (FDI)
Country Investment Statistics Profile

## Macro-Statistics

Capital Stock
Macro Indicators

## Agri-Environmental Indicators

Fertilizers indicators
Land use indicators
Land Cover
Livestock Patterns
Livestock Manure
Pesticides indicators
Emissions shares
Emissions intensities
Temperature change

## Emissions - Agriculture

Agriculture Total
Enteric Fermentation
Manure Management
Rice Cultivation
Synthetic Fertilizers
Manure applied to Soils
Manure left on Pasture
Crop Residues
Cultivation of Organic Soils
Burning - Savanna
Burning - Crop Residues
Energy Use

## Emissions - Land Use

Land Use Total
Forest Land
Cropland
Grassland
Burning - Biomass

## Forestry

Forestry Production and Trade
Forestry Trade Flows

## ASTI R&D Indicators

ASTI-Researchers
ASTI-Expenditures

## Emergency Response

Food Aid Shipments (WFP)

The New York Times

- **Explore the dataset**
  - For each pair of countries, we have the import quantity and import value for each year

| Reporter Countries | Partner Countries | Item Code | Item | Element Code | Element | Unit | Y2016 | Y2017 | Y2018 |
|---|---|---|---|---|---|---|---|---|---|
| Afghanistan | Argentina | 1058 | Meat, chicken | 5610 | Import Quantity | tonnes | 1792 | 1750 | 935 |
| Afghanistan | Argentina | 1058 | Meat, chicken | 5622 | Import Value | 1000 US$ | 1653 | 1761 | 854 |

- **Analyse the data**
  - Used R to collate data for total imports to the UK from all EU countries

# R script

```r
library(dplyr)

data <- read.csv("Trade_DetailedTradeMatrix_E_All_Data.csv")

eu_countries <-  c("Austria", "Belgium", "Bulgaria", "Croatia", "Cyprus",
"Czechia", "Denmark", "Estonia", "Finland", "France", "Germany",
"Greece", "Hungary", "Ireland", "Italy", "Latvia", "Lithuania",
"Luxembourg", "Malta", "Netherlands", "Poland", "Portugal", "Romania",
"Slovakia", "Slovenia", "Spain","Sweden")

data_filtered <- data %>%
    filter(Element == "Import Value") %>%
    filter(Reporter.Countries == "United Kingdom of Great Britain and
Northern Ireland") %>%
    filter(Partner.Countries %in% eu_countries)

top_imports <- data_filtered %>%
  filter(!is.na(Y2016)) %>%
  group_by(Item) %>%
  summarize(total_import_value_2016 = sum(Y2016)) %>%
  arrange(desc(total_import_value_2016))
```

# UK's top food imports from the EU

| | Item | total_import_value_2016 |
|---|---|---|
| 1 | Food prep nes | 2724376 |
| 2 | Wine | 2540285 |
| 3 | Pastry | 1910958 |
| 4 | Chocolate products nes | 1794622 |
| 5 | Cheese, whole cow milk | 1474259 |
| 6 | Crude materials | 1293199 |
| 7 | Meat, chicken | 1162685 |
| 8 | Beverages, non alcoholic | 1073182 |
| 9 | Meat, cattle, boneless (beef & veal) | 872460 |
| 10 | Bacon and ham | 717064 |
| 11 | Meat, pig, preparations | 649251 |
| 12 | Beverages, distilled alcoholic | 645615 |
| 13 | Pet food | 599895 |
| 14 | Meat, chicken, canned | 568771 |
| 15 | Meat, pig | 559455 |

- **Calculate some data leads for your story**
  - Need to find simple, summary values that can be used in your copy
  - For example: from which country does the UK import the most cheese?

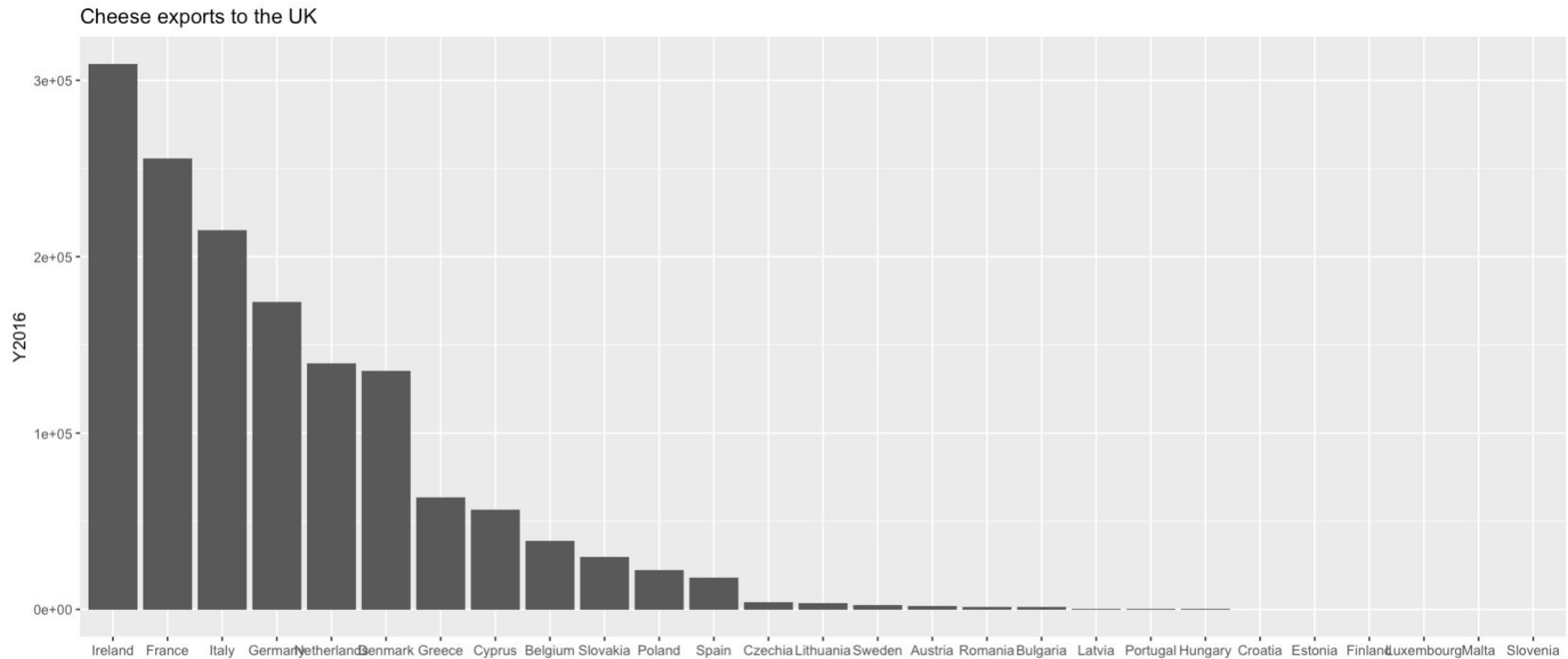data_filtered %>%
 filter(Item == "Cheese, whole cow milk") %>%
 arrange(desc(Y2016))

Answer: $309 million dollars of
cheese imports from Ireland

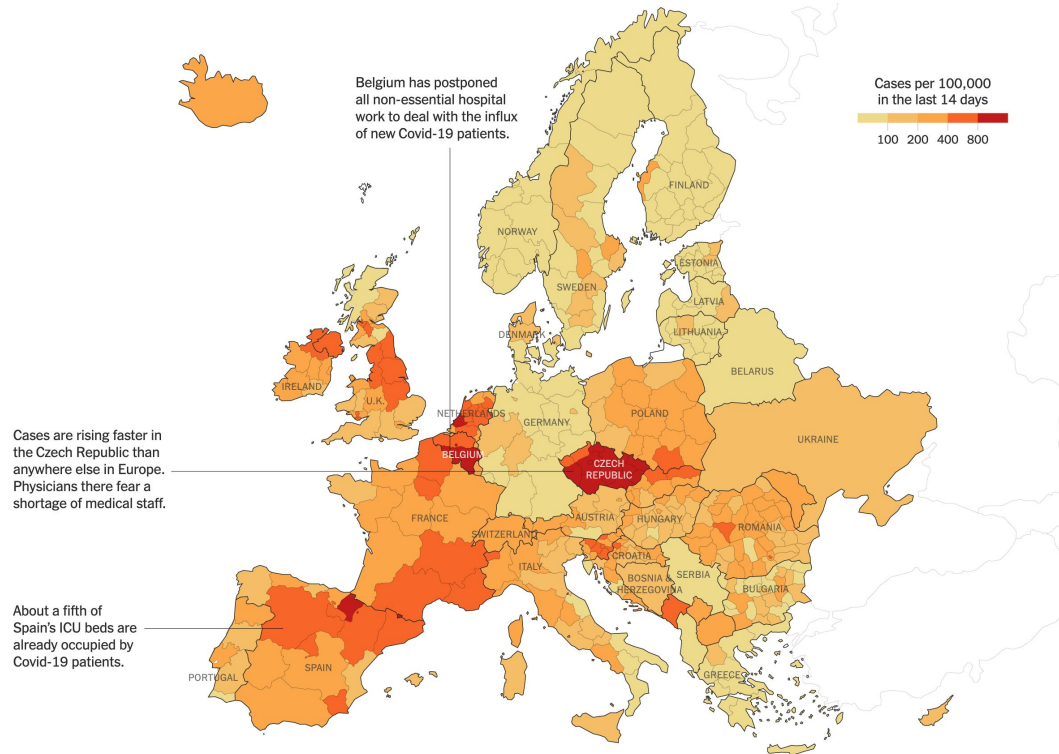| | Partner.Countries | Y2016 |
|---|---|---|
| 1 | Ireland | 309519 |
| 2 | France | 255658 |
| 3 | Italy | 215210 |
| 4 | Germany | 174223 |
| 5 | Netherlands | 139767 |
| 6 | Denmark | 135410 |
| 7 | Greece | 63259 |
| 8 | Cyprus | 56329 |
| 9 | Belgium | 39093 |
| 10 | Slovakia | 29649 |

The New York Times

How can we visualize this dataset?

# Bar chart?



Cheese exports to the UK

# Choropleth map?



Belgium has postponed all non-essential hospital work to deal with the influx of new Covid-19 patients.

Cases are rising faster in the Czech Republic than anywhere else in Europe. Physicians there fear a shortage of medical staff.

About a fifth of Spain's ICU beds are already occupied by Covid-19 patients.

Cases per 100,000 in the last 14 days

100  200  400  800

ICELAND
NORWAY
FINLAND
SWEDEN
ESTONIA
LATVIA
LITHUANIA
DENMARK
IRELAND
U.K.
NETHERLANDS
BELGIUM
GERMANY
POLAND
BELARUS
UKRAINE
CZECH REPUBLIC
FRANCE
SWITZERLAND
AUSTRIA
HUNGARY
ROMANIA
ITALY
CROATIA
BOSNIA & HERZEGOVINA
SERBIA
BULGARIA
SPAIN
PORTUGAL
GREECE

# Bubble map?

# The solution: the flow map

# How to build this in D3

- Base map
- Lines connecting EU countries to the UK
- Flowing circles from EU countries to the UK, sized by the total export of an item

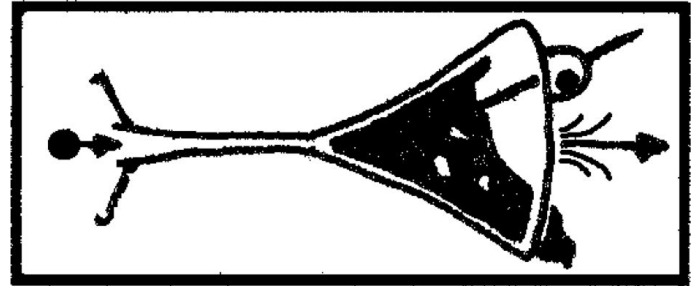https://observablehq.com/d/4a7b89db3aa11048

- **Two options for how to use this visualisation**
  - An exploratory data visualisation – let readers select the foods they are interested in
  - Story-driven visualisation. We find the most interesting stories in the dataset and present them to the reader with annotations and context

# You can do both! Follow the "martini glass structure"

"The martini glass structure refers to putting the user on a narrow path (the stem of the glass) where they follow the author's introduction, observations and questions regarding the story, and then moving the user to a more open area (the mouth of the glass) that allows for more independent, user-driven exploration of the story."
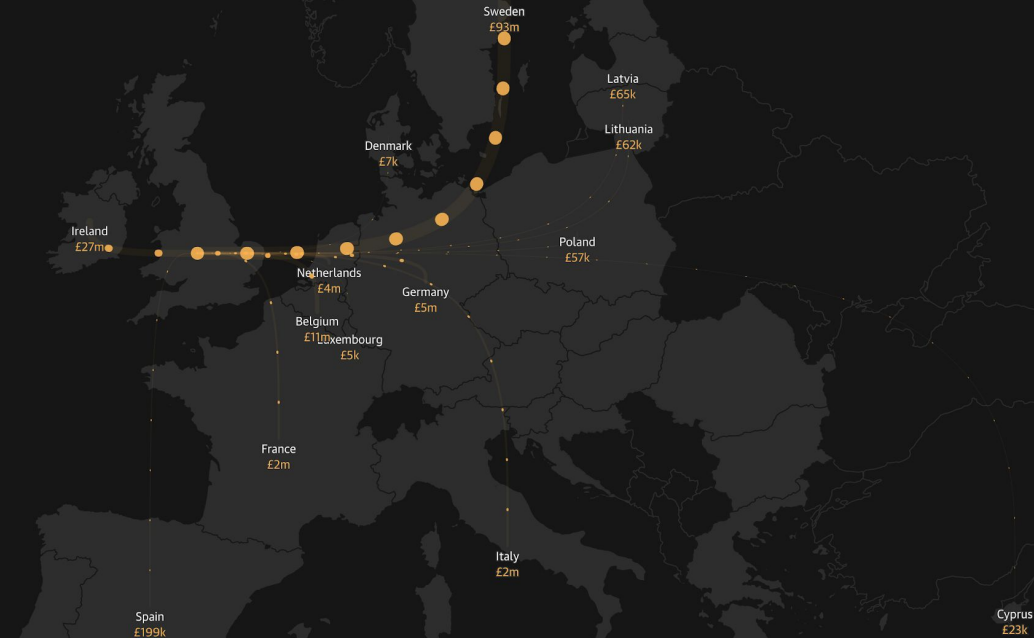
http://visualizingrights.org/tldr/narrative-storytelling.html

https://www.theguardian.com/politics/ng-interactive/2019/aug/13/how-a-no-deal-brexit-threatens-your-weekly-food-shop

# Where America Didn't Stay Home Even as the Virus Spread

[https://www.nytimes.com/interactive/2020/04/02/us/coronavirus-social-distancing.html](https://www.nytimes.com/interactive/2020/04/02/us/coronavirus-social-distancing.html)

- **The question**
  - Are people reducing their travel due to the stay-at-home orders that states have put in place?

- **Sourcing the data**
  - No public dataset
  - Used "mobility" data from a private company called Cuebiq
    - A measure of how many meters the average person moved each day in each county in the US
  - Collected data on which states and counties had stay-at-home orders in place

# Which counties reduced travel the most

Change in distance traveled (Feb. 28 to Mar. 27)
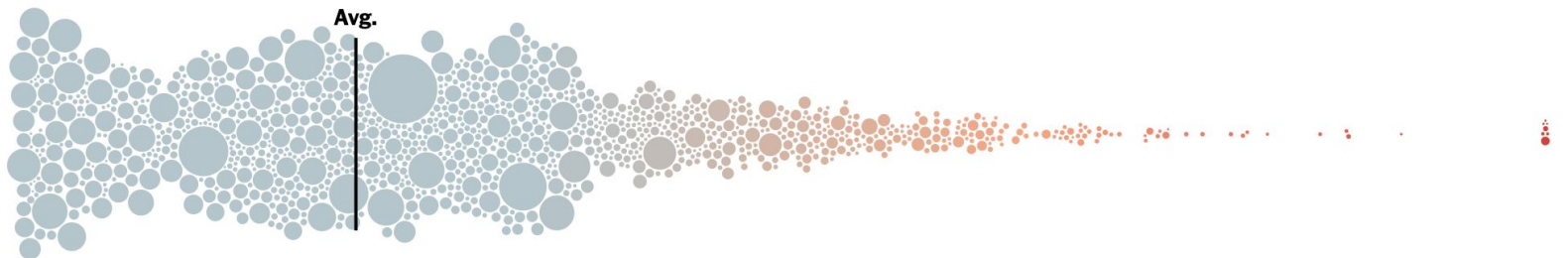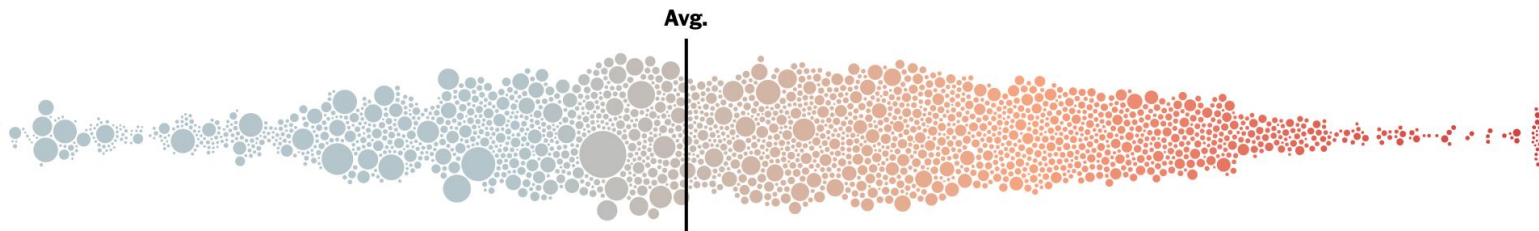
← Less travel    More travel →

−100%     −75%     −50%     −25%

**Counties
with stay-at-
home orders**
by March 27

Avg.

**Counties
without stay-at-
home orders**
by March 27

Avg.

# The data used to build this visualisation

| county_fips_code | in_lockdown | pct_change | pop | label |
|---|---|---|---|---|
| 1001 | FALSE | -0.616 | 55869 | Autauga, AL |
| 1003 | FALSE | -0.544 | 223234 | Baldwin, AL |
| 1005 | FALSE | -0.51 | 24686 | Barbour, AL |
| 1007 | FALSE | -0.615 | 22394 | Bibb, AL |
| 1009 | FALSE | -0.574 | 57826 | Blount, AL |
| 1011 | FALSE | -0.353 | 10101 | Bullock, AL |
| 1013 | FALSE | -0.609 | 19448 | Butler, AL |
| 1015 | FALSE | -0.438 | 113605 | Calhoun, AL |
| 1017 | FALSE | -0.55 | 33254 | Chambers, AL |

[https://observablehq.com/d/66c52f48229a8252](https://observablehq.com/d/66c52f48229a8252)

# Q&A