

# Guide the View

Design that makes data easier  
to read and communicate

Dr Cédric Scherer

April 27<sup>th</sup>, 2026





# Hi, I am Cédric

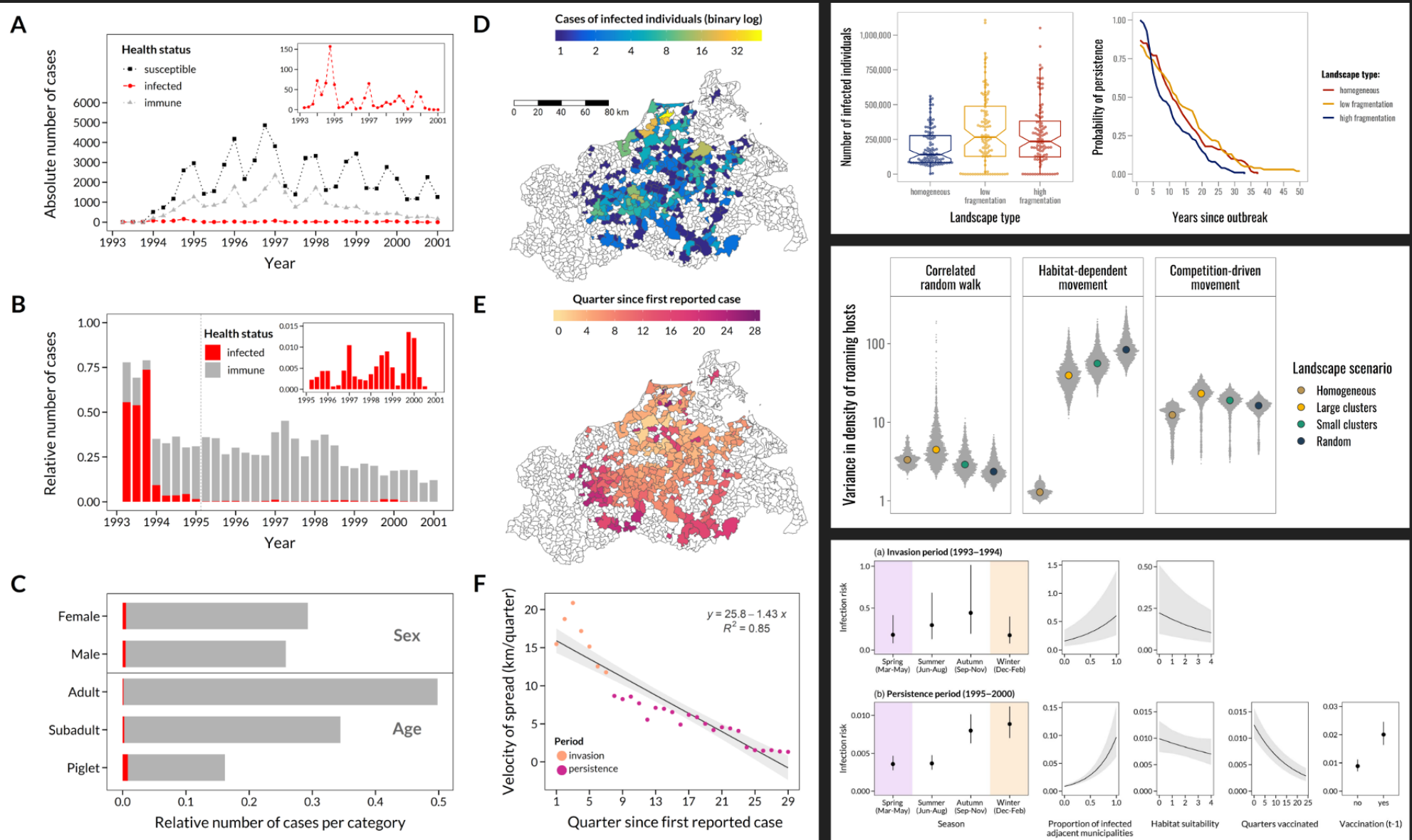
hello@cedricscherer.com

As a freelance consultant and developer in the field of **Information Design & Data Visualization** I support the entire process of data communication.

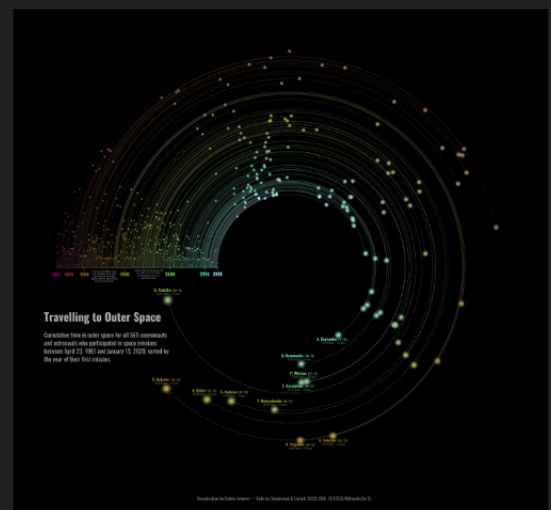
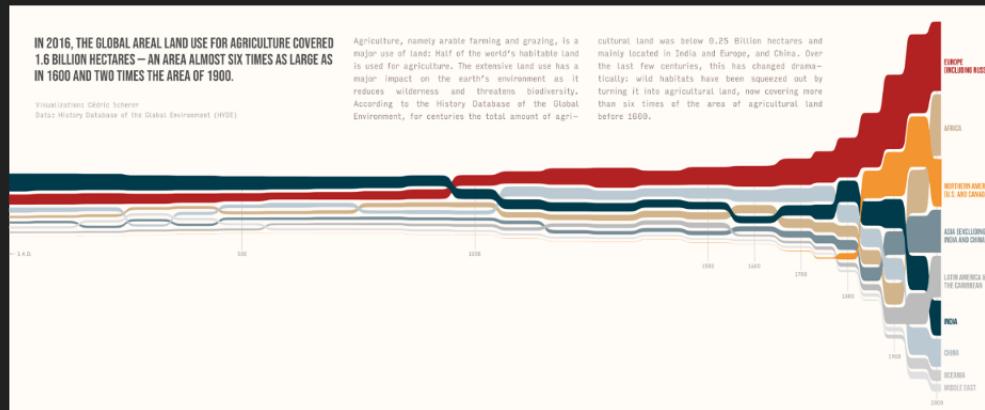
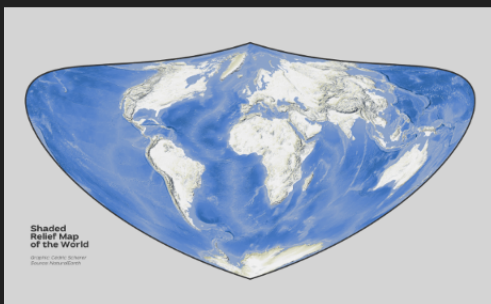
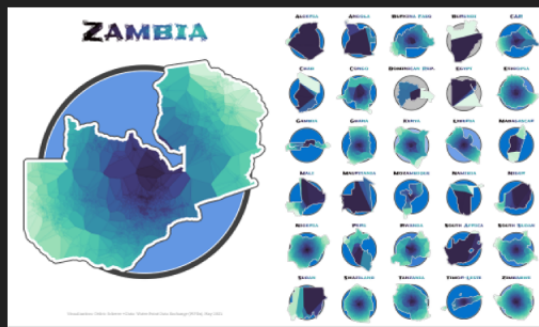
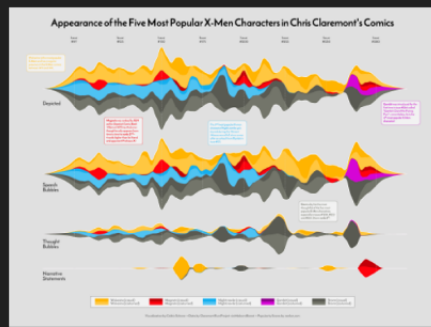
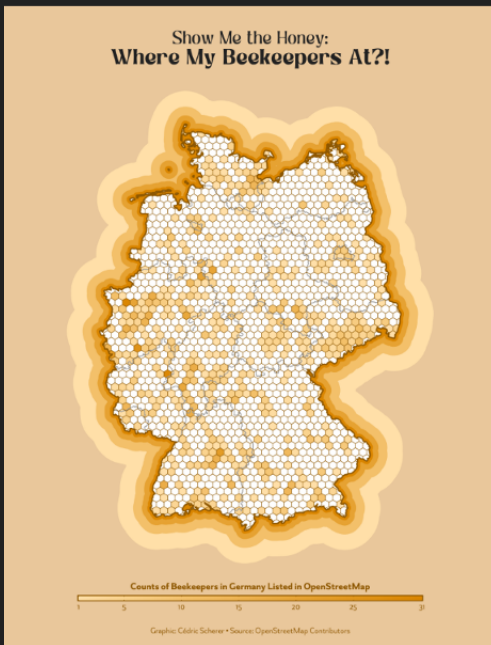
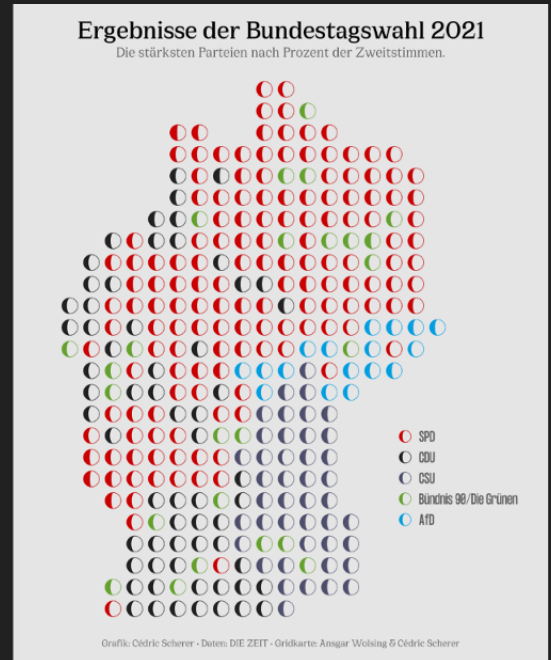
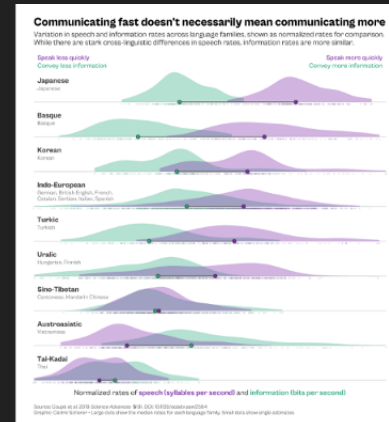
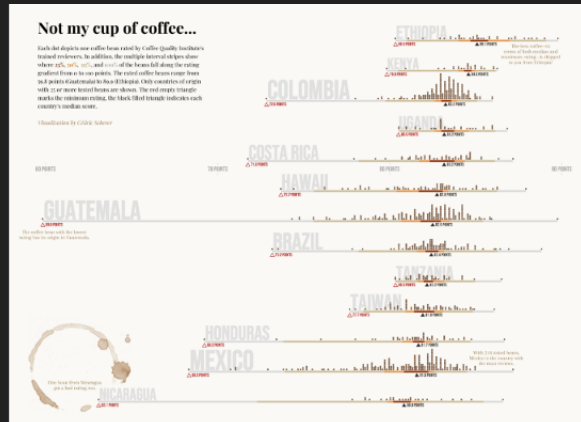
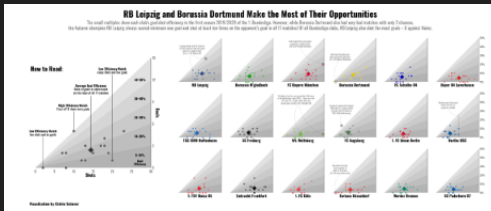
- **Analysis & Workflows** — Optimizing data processes through efficient and reproducible pipelines.
- **Design & Communication** — Strategic guidance and creation of impactful graphics and interactive content.
- **Consulting & Training** — Teaching effective data communication, from theory and design to “code-first” implementation.



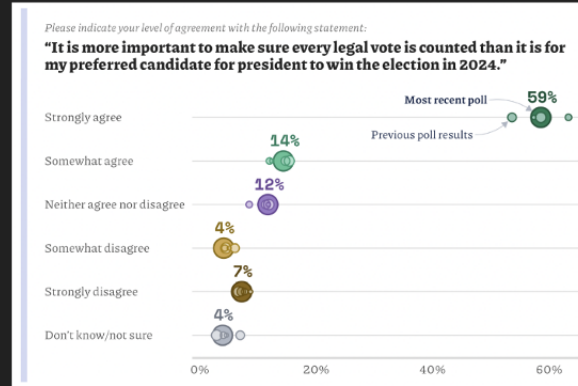
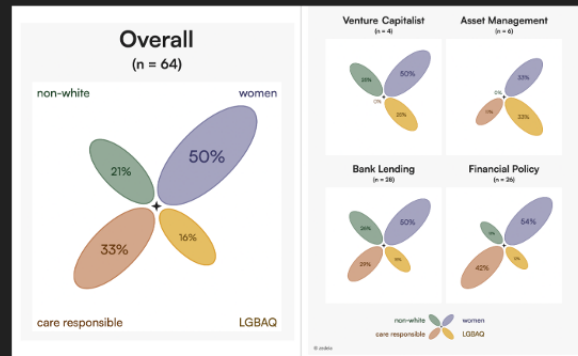
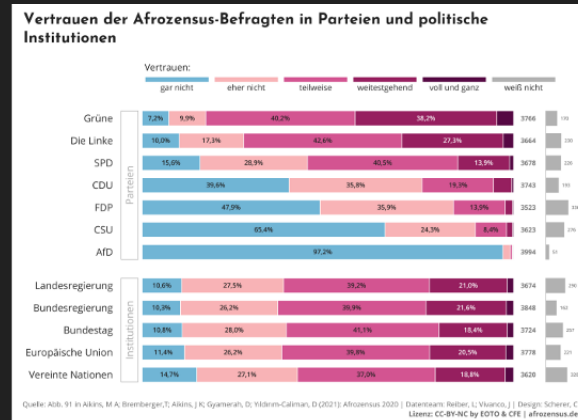
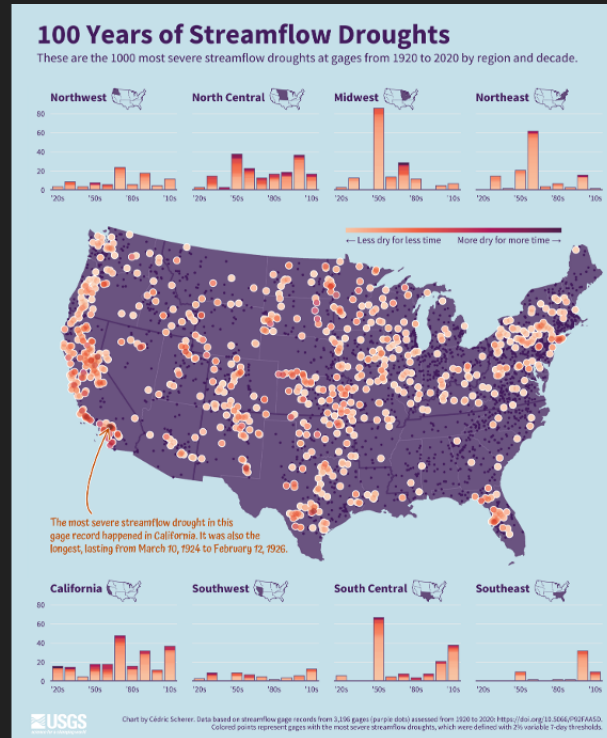
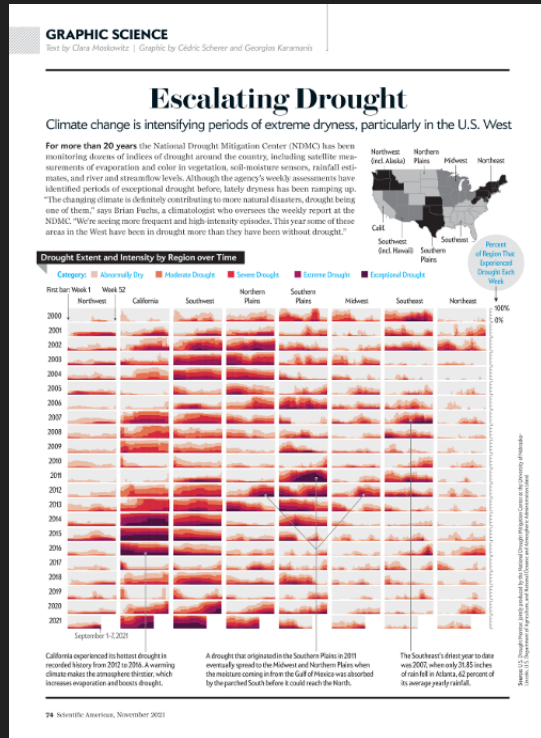
# How it all started...



# ... and how it continued



# ... and how it continued



# Why Charts Fail to Communicate Clearly



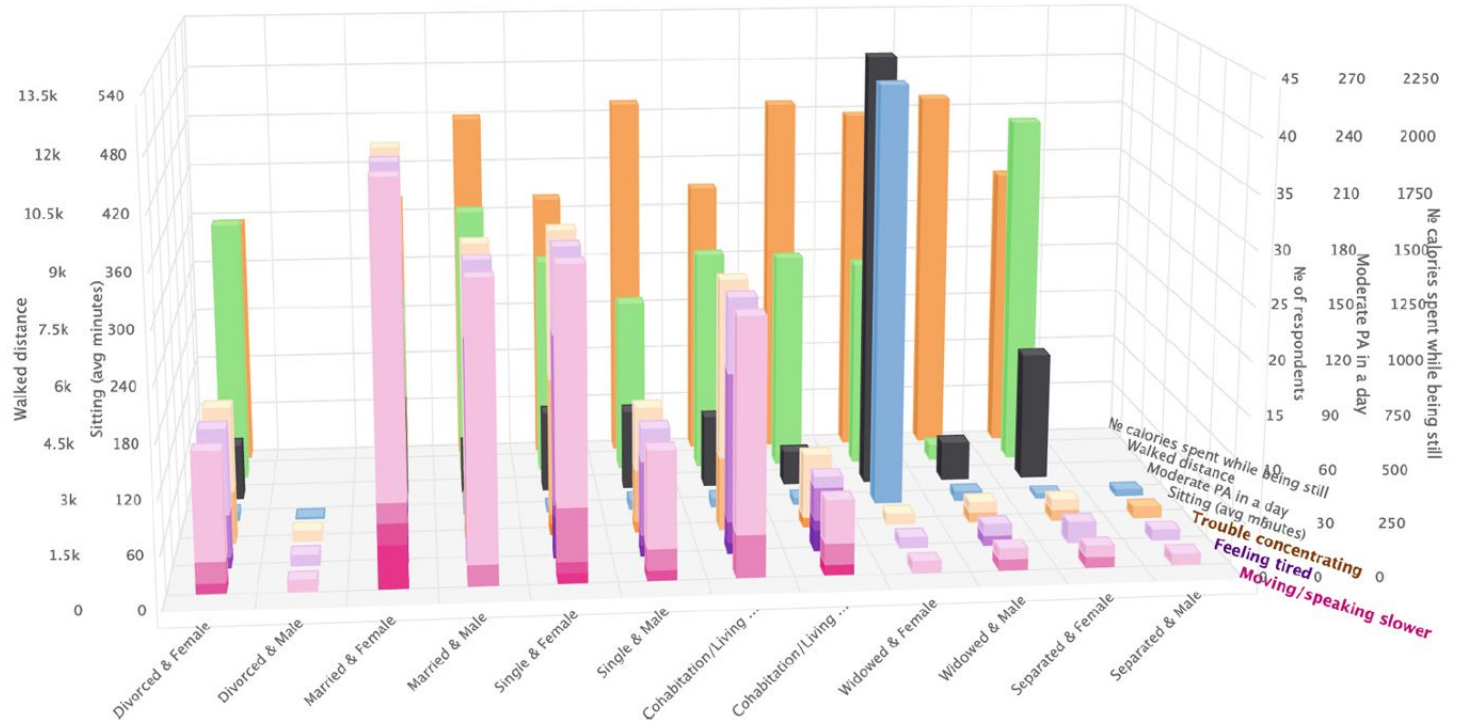
They **hide the message** under clutter, weak hierarchy, and default choices.



Questionnaire variables

Moving/speaking slower  
 Feeling tired  
 Trouble concentrating

- No
  - Several Days
  - Over Half Days
  - Nearly Every Day
- 
- No
  - Several Days
  - Over Half Days
  - Nearly Every Day
- 
- No
  - Several Days
  - Over Half Days
  - Nearly Every Day
- 
- Sitting (avg minutes)
  - Moderate PA in a day
  - Walked distance
  - No calories spent while being still



# Chart junk

## Ticket Sales On The Web Take Off

Total dollars spent on the Web for travel reservations



Average amount spent by consumers on tickets for travel in 1997: \$872

SOURCE: FORRESTER RESEARCH INC.

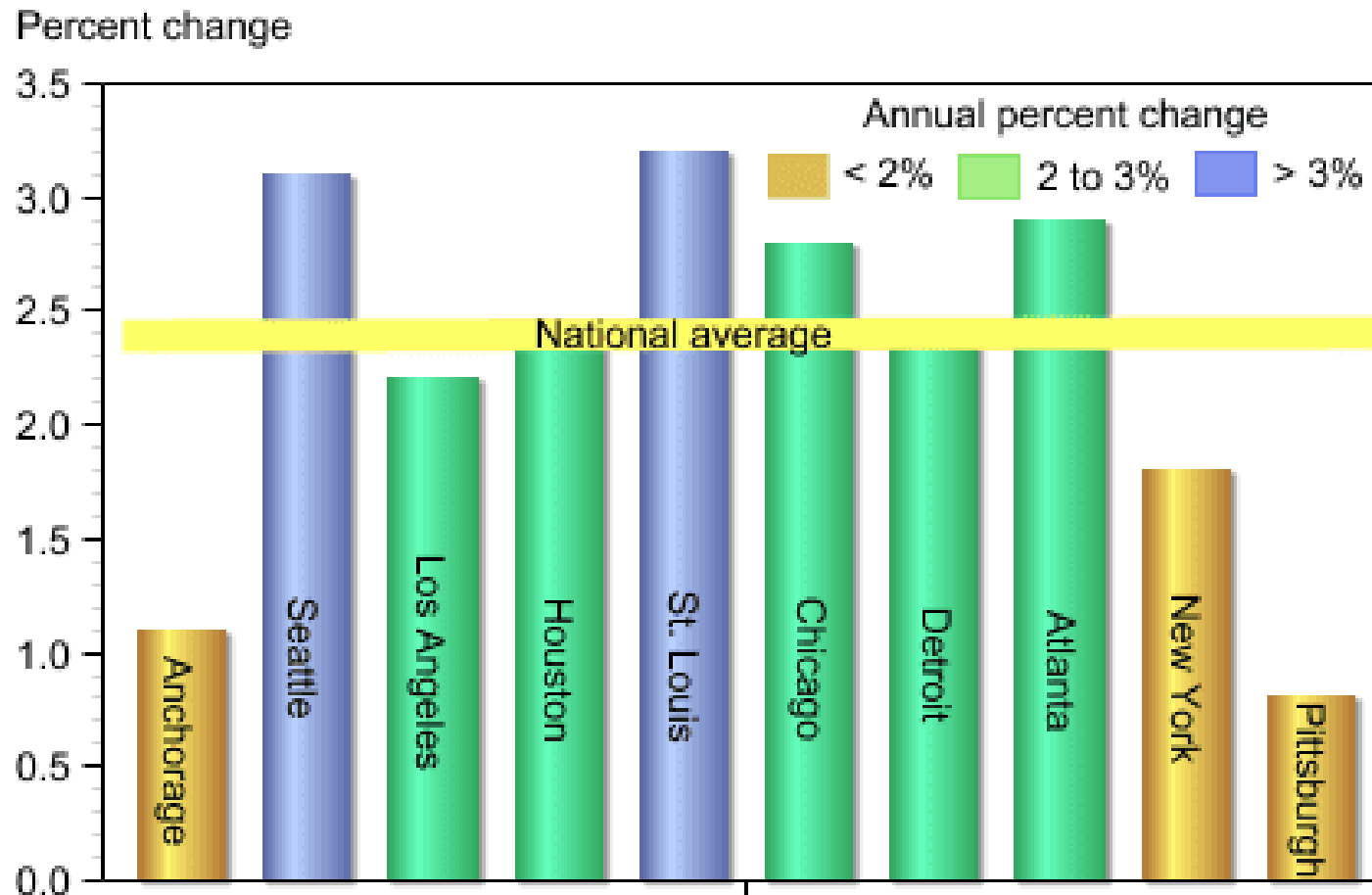
Found in "News that fit to print" by Arturo Perez-Reyes

Cédric Scherer Data Visualization & Information Design



## Annual grocery store inflation by city, 2014

*In 2014, food price inflation was higher in Seattle, St. Louis, Chicago, and Atlanta than in other metropolitan areas*



Source: Calculated by ERS, USDA, using Bureau of Labor Statistics (BLS) data.

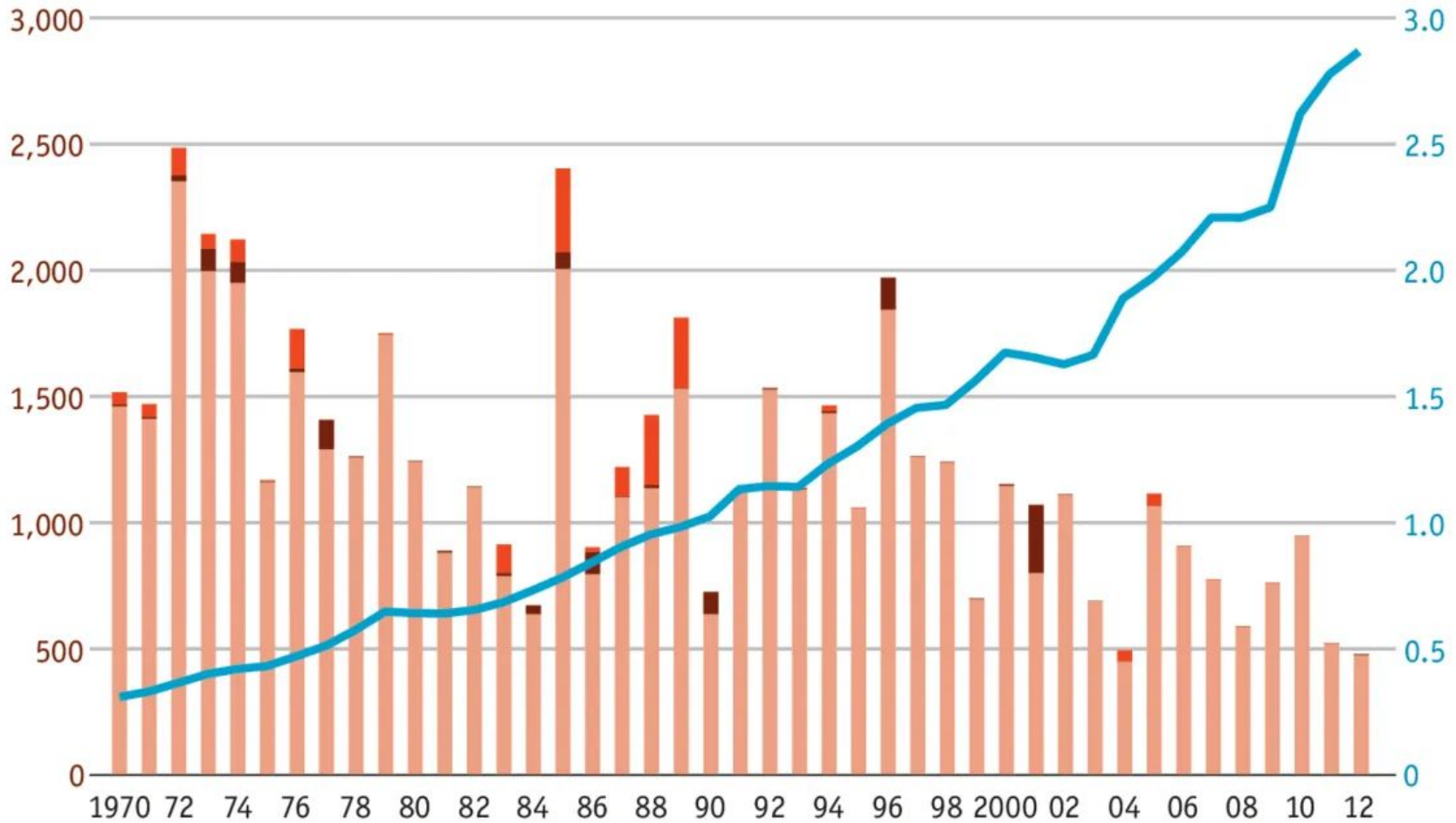


# Aircraft safety

Worldwide

Casualties\* due to: ■ accident ■ hijacking ■ bombing

Aircraft passengers carried, bn



Sources: World Bank; Aviation Safety Network

\*Excluding ground casualties

Economist.com/graphicdetail



# Why Charts Fail

- **Missing context.**
- **Legend hunting.**
- **Bad color encoding.**
- **Hard comparisons.**



Good chart design **highlights what matters**  
by reducing decoding effort and guiding attention.



# Color with Purpose



# Same Data, Different Shades

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To decode your data with a suitable set of colors — and communicate your data effectively! — it helps to clarify **what you want color to do**.

In data visualization, the **main purposes of color use** typically are:

1. **Represent values**

Decode the data in a perceptually linear way with the goal to emphasize one end of the range (sequential palette) or both ends (diverging palette).

2. **Distinguish groups**

Separate distinct categories with colors of similar perceptual weight with the goal to show all groups equally (qualitative palette).

3. **Emphasize information**

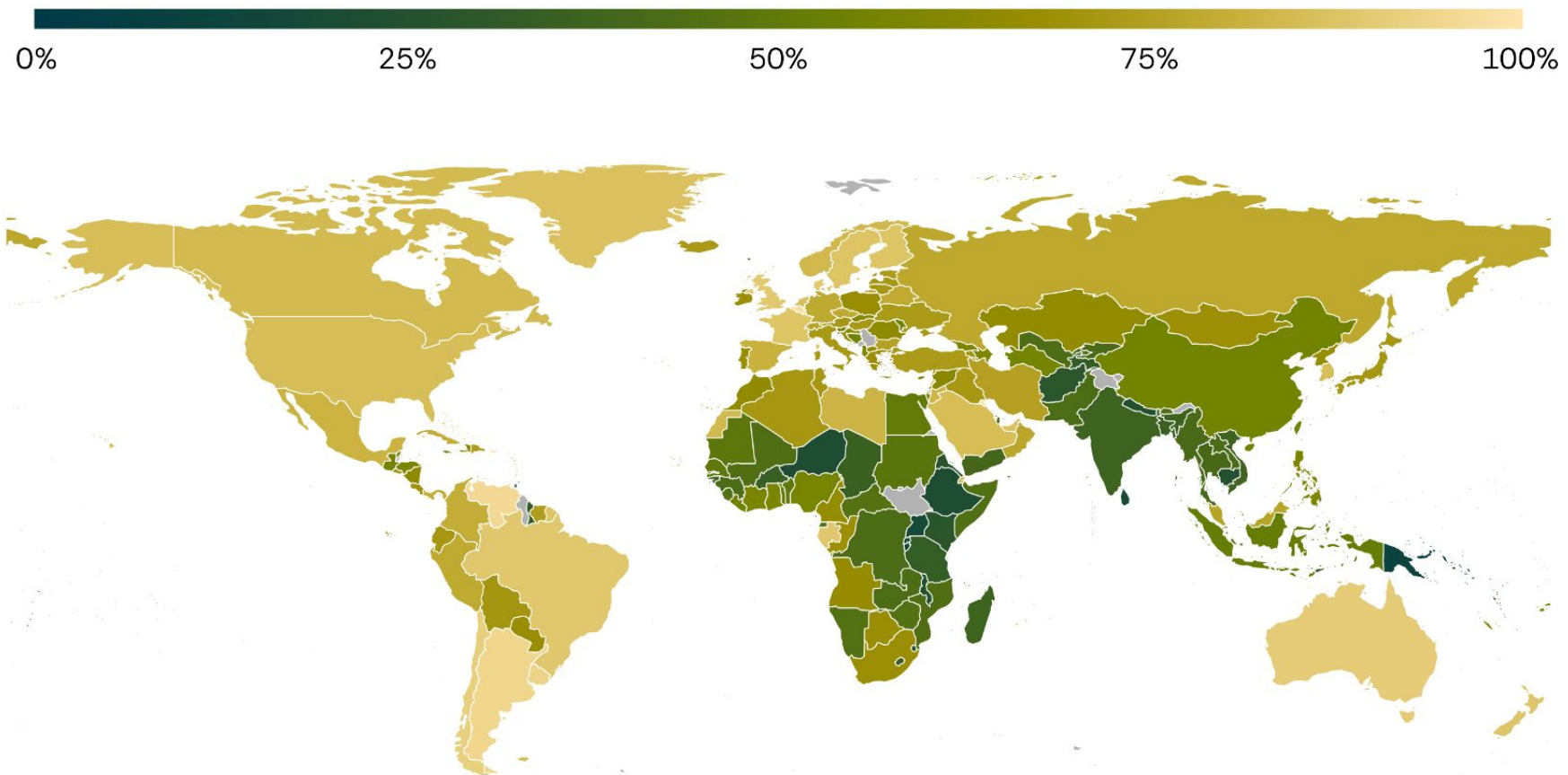
Draw attention to specific categories, ranges, or thresholds in your data by using highlight colors in combination with reduced, desaturated shades.



# Represent Values: Sequential

Use perceptually linear gradients to emphasize one end of the range.

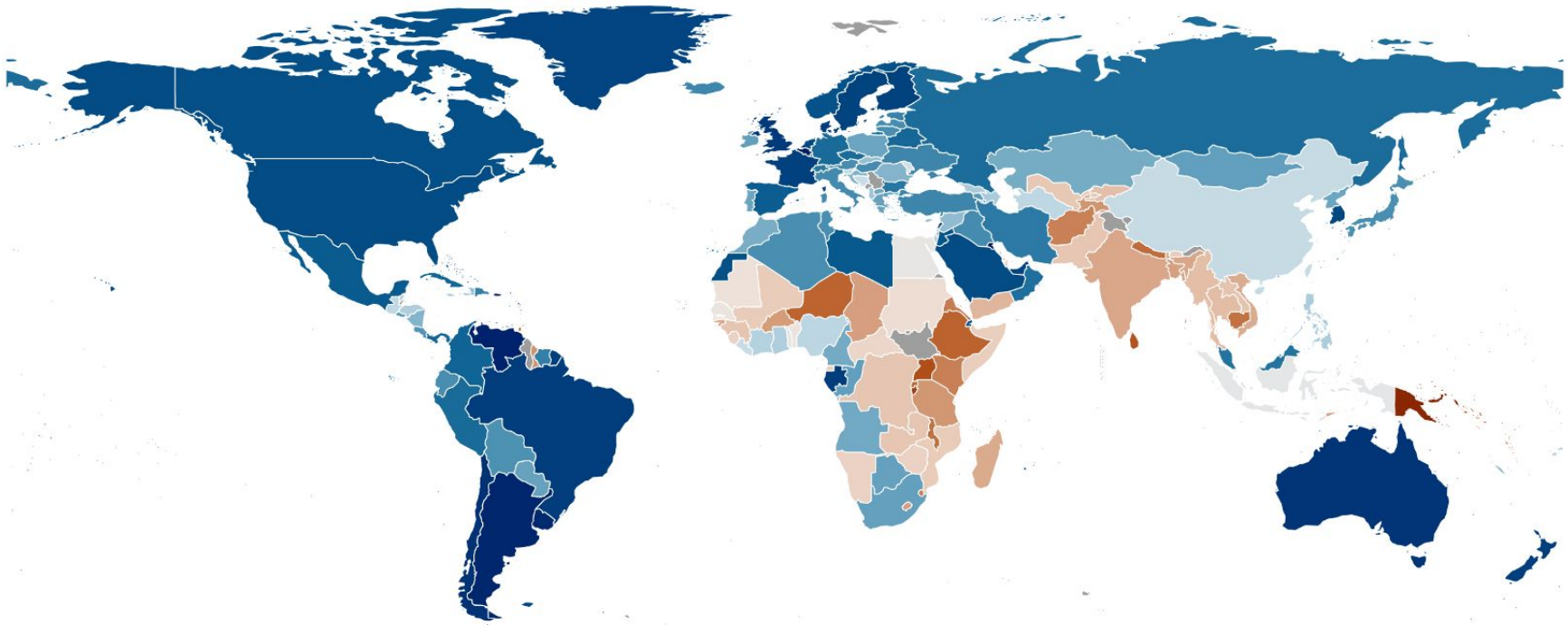
## Share of Urban Population



# Represent Values: Diverging

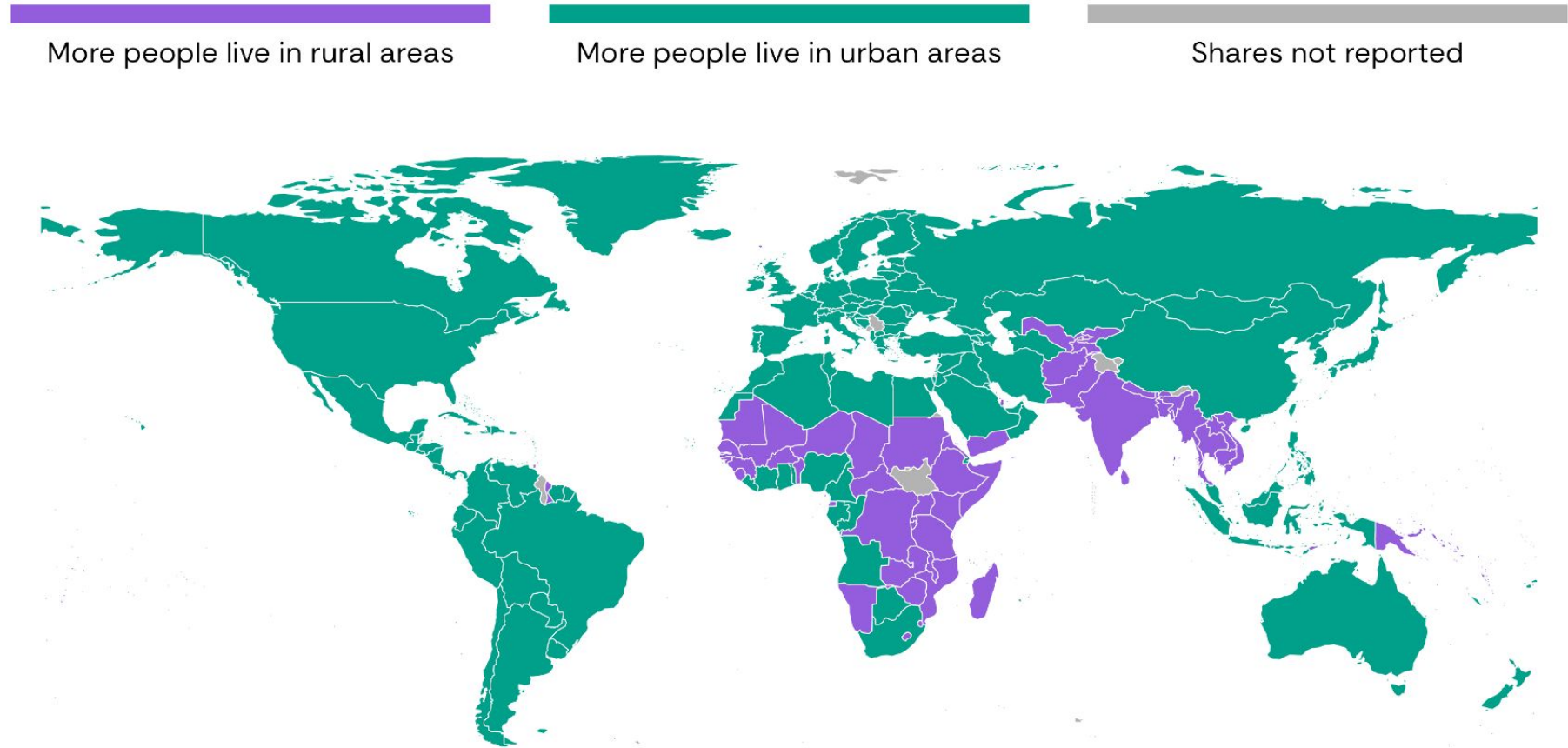
Use balanced gradients with a neutral midpoint to highlight both extremes.

## Share of Urban Population



# Distinguish Groups

Pick category colors of similar perceptual weight for equal comparison.



# Distinguish Groups

Pick category colors of similar perceptual weight for equal comparison.

More people live in rural areas

More people live in urban areas

Shares not reported



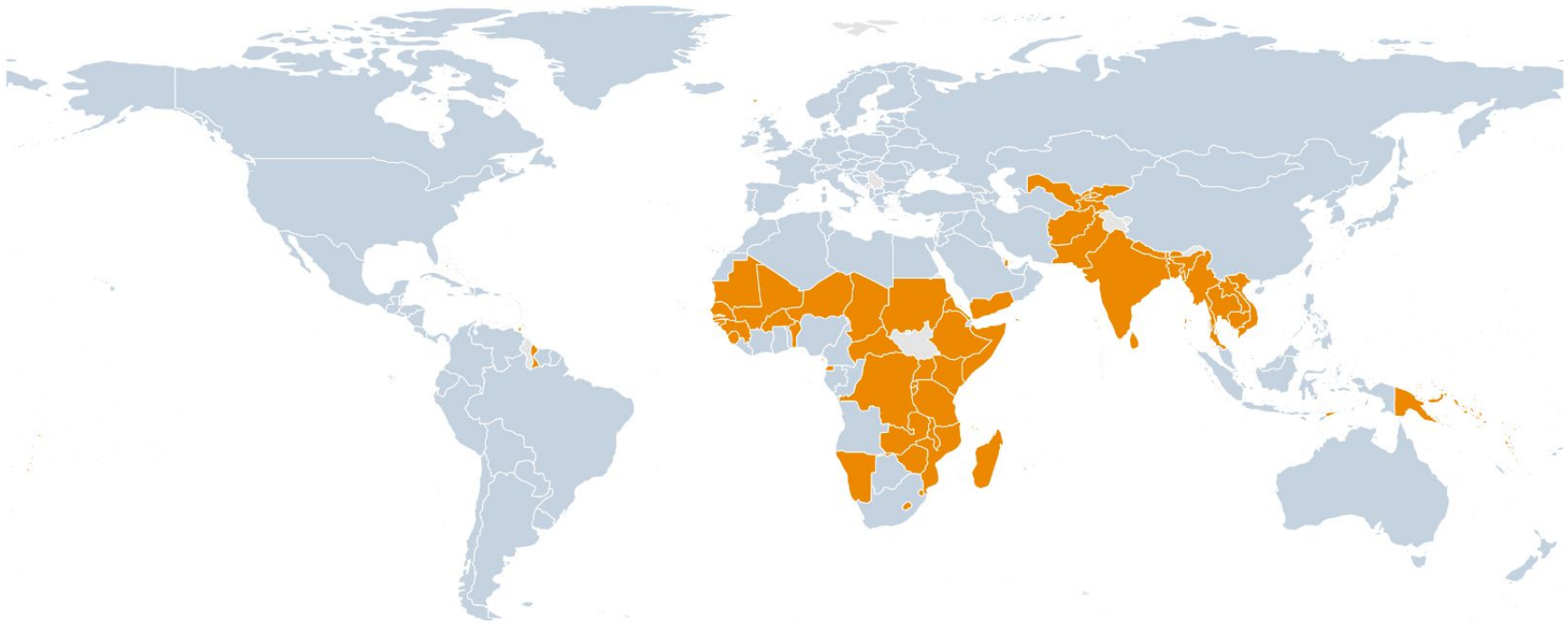
# Emphasize Information

Combine highlight colors with reduced shades to draw attention.

More people live in rural areas

More people live in urban areas

Shares not reported

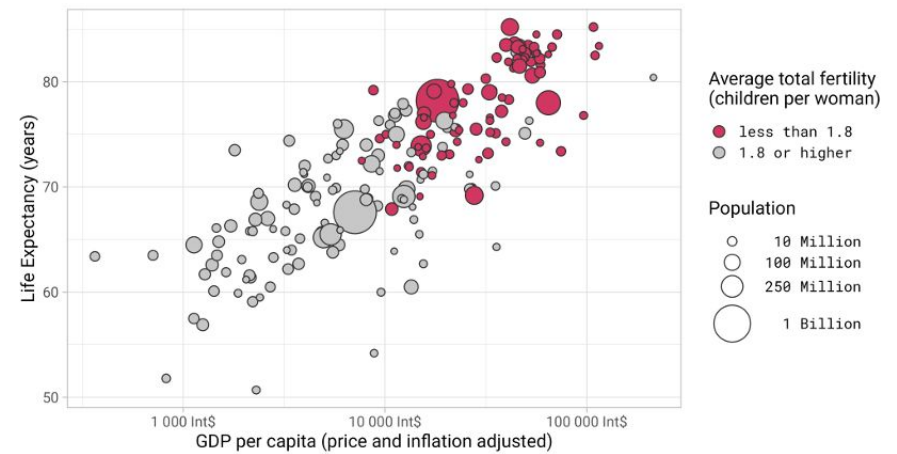
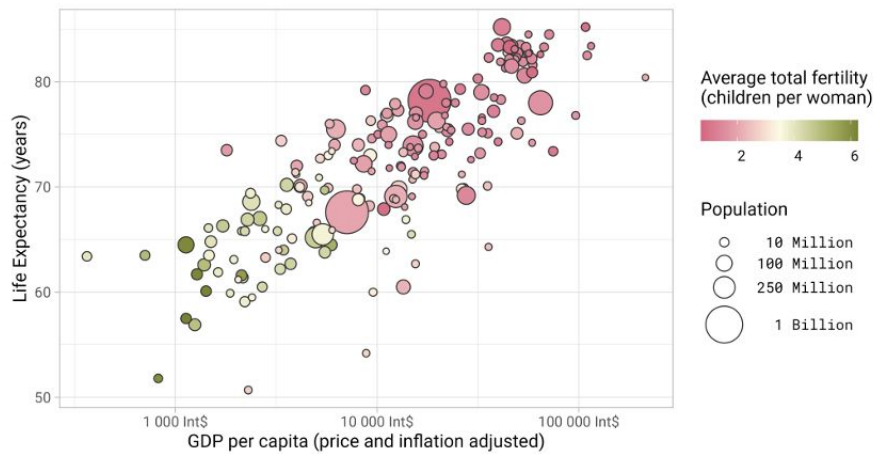
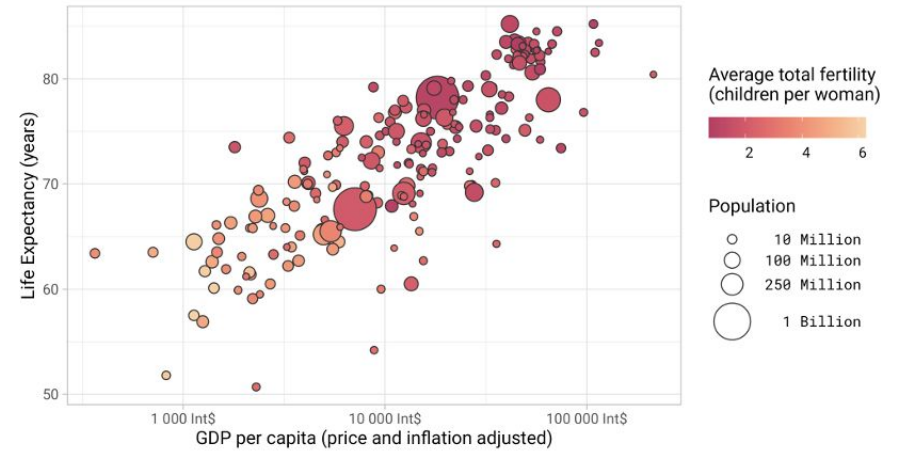
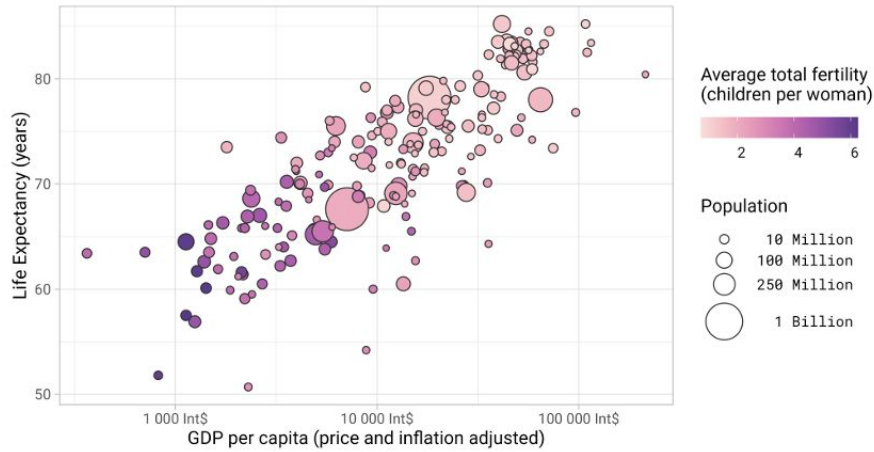


# Palette Pitfalls

Live Demo

[ggplot2-uncharted.com/module2/color-choice](https://ggplot2-uncharted.com/module2/color-choice)





⇒ ground your decision on the purpose of your visualization



# Guide the Eye



# Keep it simple

In his book [Information Visualization: Perception for Design](#), Colin Ware states:

“It is easy to spot a hawk in a sky full of pigeons, but as the variety of birds increases the hawk becomes harder to pick out.”

In other words, **the more things are made different, the less any of them stand out.**

So, it is *good practice* to start with figuring out an item of interest you want to emphasise, and then trying to make it the one thing that is different, thus leveraging your contrast strategically.

Source: Deya Milcheva (5rdata.com)



# Keep it simple

size, weight, type + spacing

color + added mark

In his book [Information Visualization: Perception for Design](#), Colin Ware states:

added mark

spacing

“It is easy to spot a hawk in a sky full of pigeons, but as the variety of birds increases the hawk becomes harder to pick out.”

position

spacing

type + style

In other words, **the more things are made different, the less any of them stand out.**

style

spacing

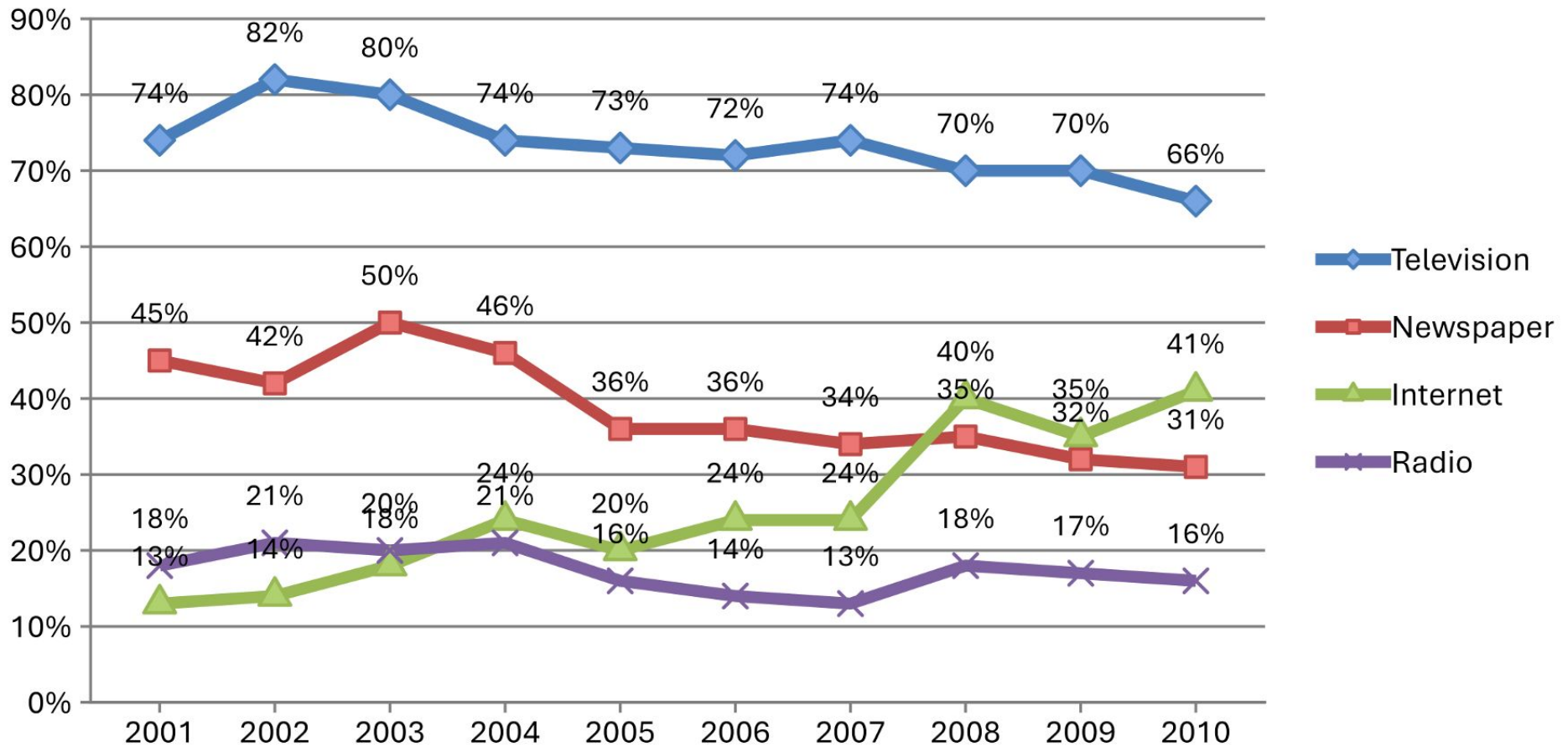
weight

So, it is good practice to start with figuring out an item of interest you want to emphasise, and then trying to make it the one thing that is different, thus leveraging your contrast strategically.

Source: Deya Milcheva (5rdata.com) size, color + spacing



# How People Get Their News

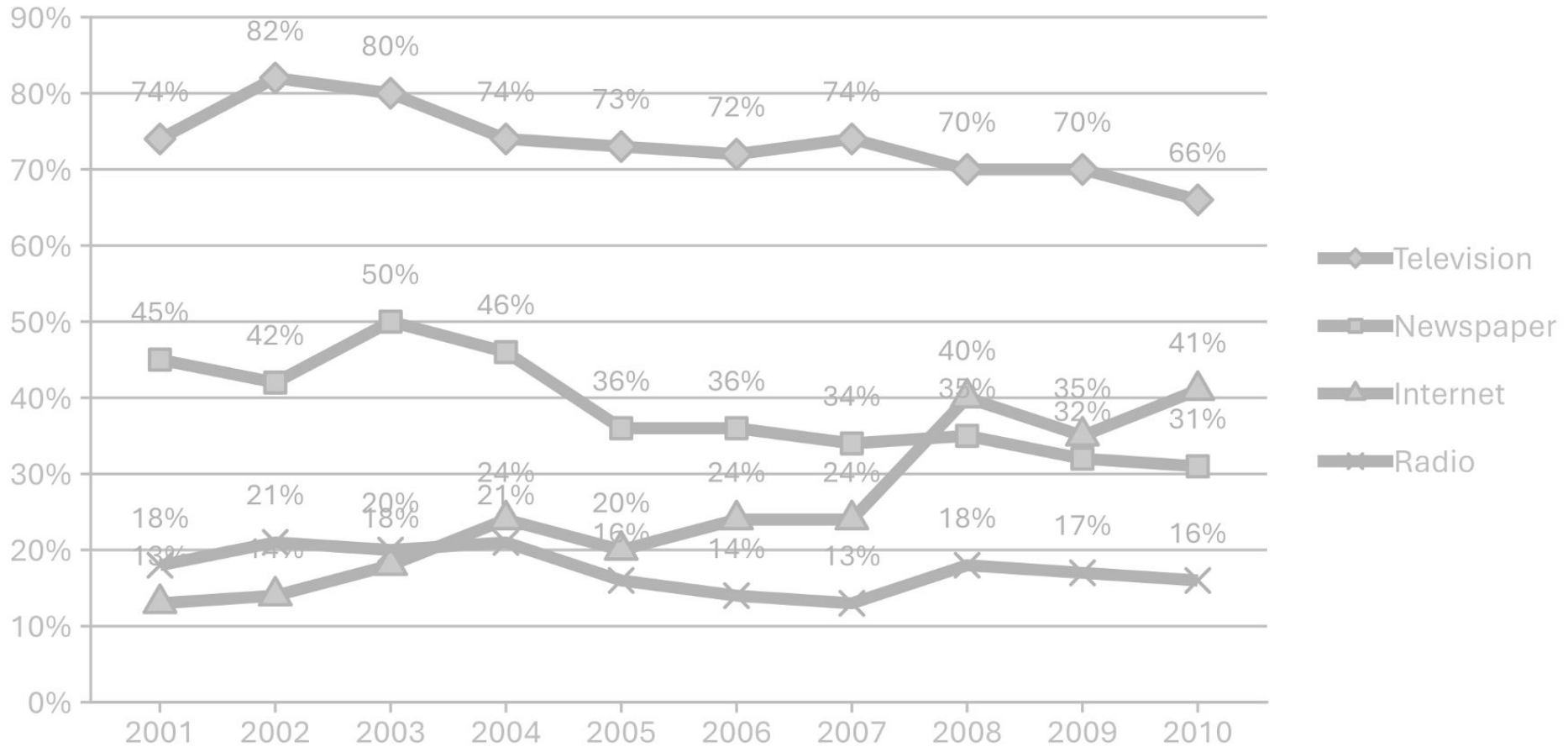


**AN INCREASING PROPORTION CITE THE INTERNET AS THEIR PRIMARY NEWS SOURCE.**

DATA SOURCE: PEW RESEARCH CENTER. REPRESENTS RESPONSES TO THE QUESTION "WHERE DO YOU GET MOST OF YOUR NEWS ABOUT NATIONAL AND INTERNATIONAL ISSUES? FIGURES SUM TO MORE THAN 100% BECAUSE RESPONDENTS COULD VOLUNTEER UP TO TWO MAIN SOURCES.



# How People Get Their News

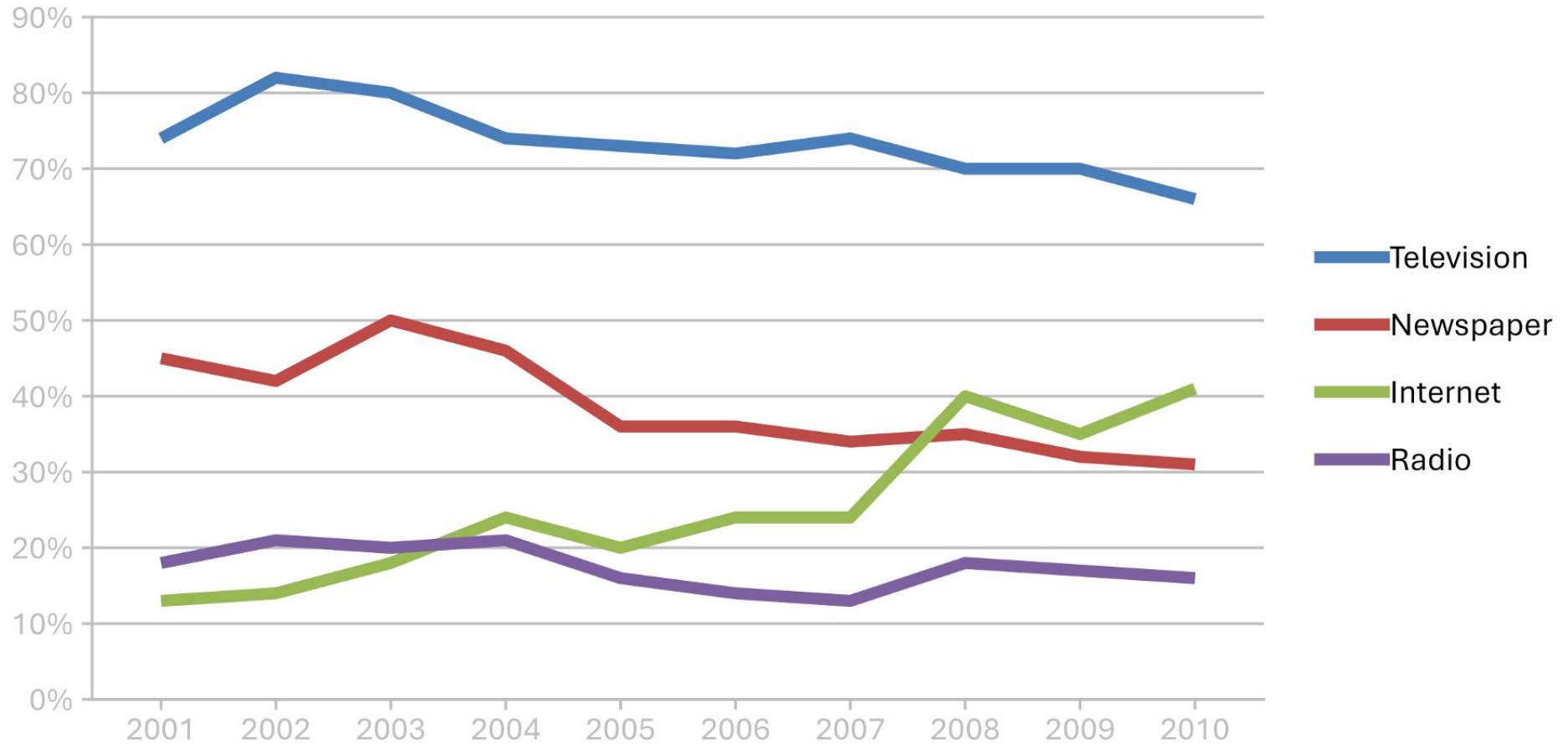


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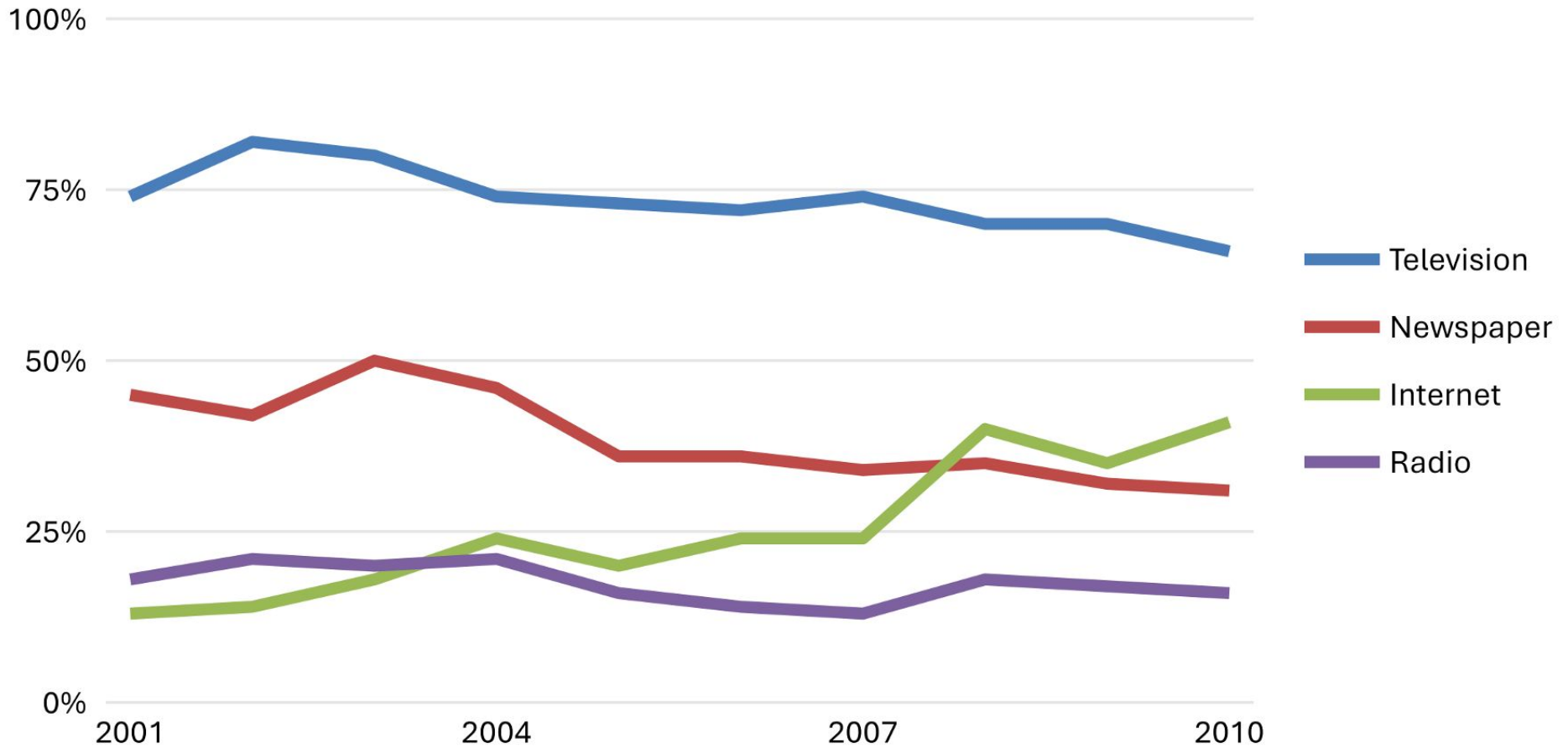


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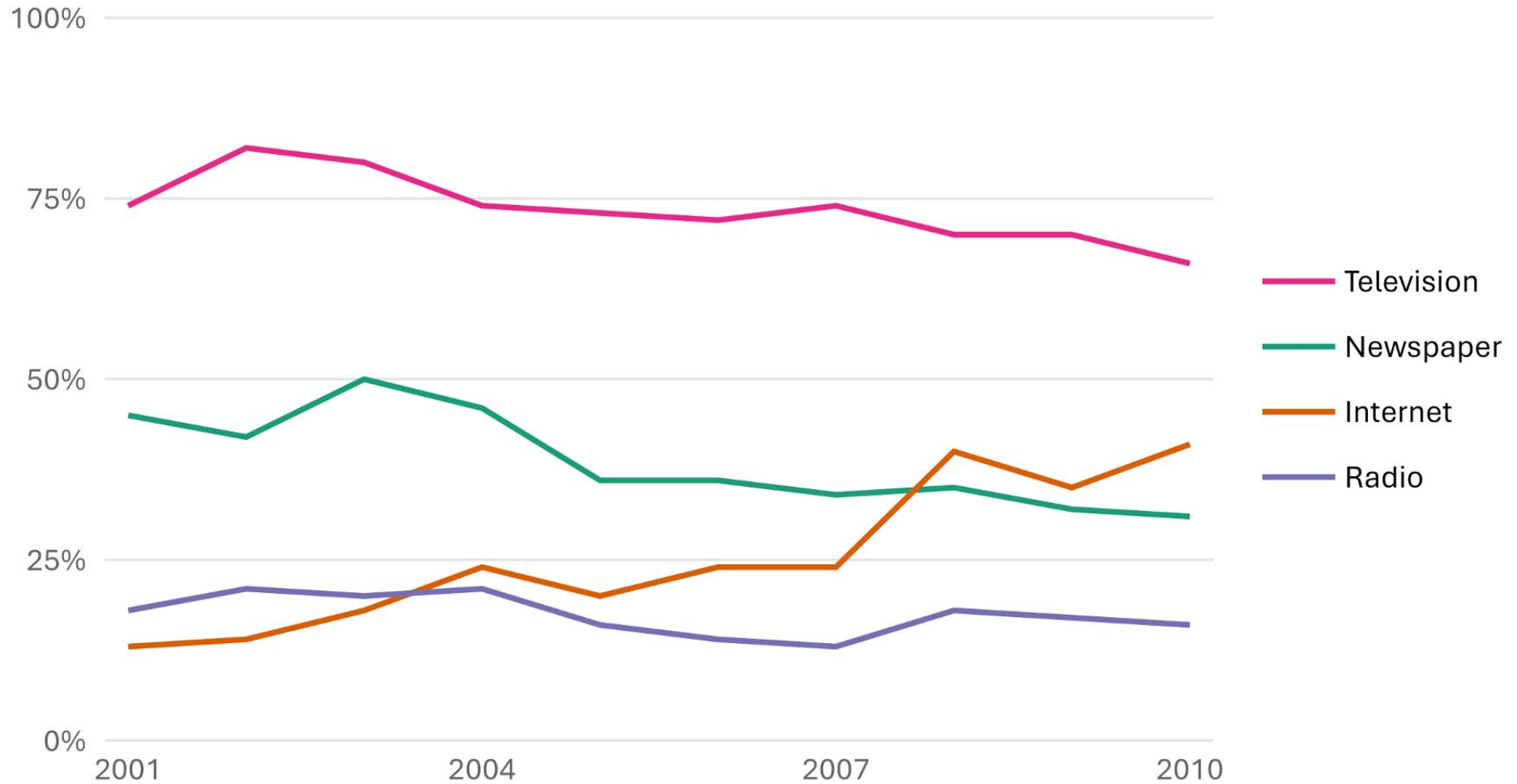


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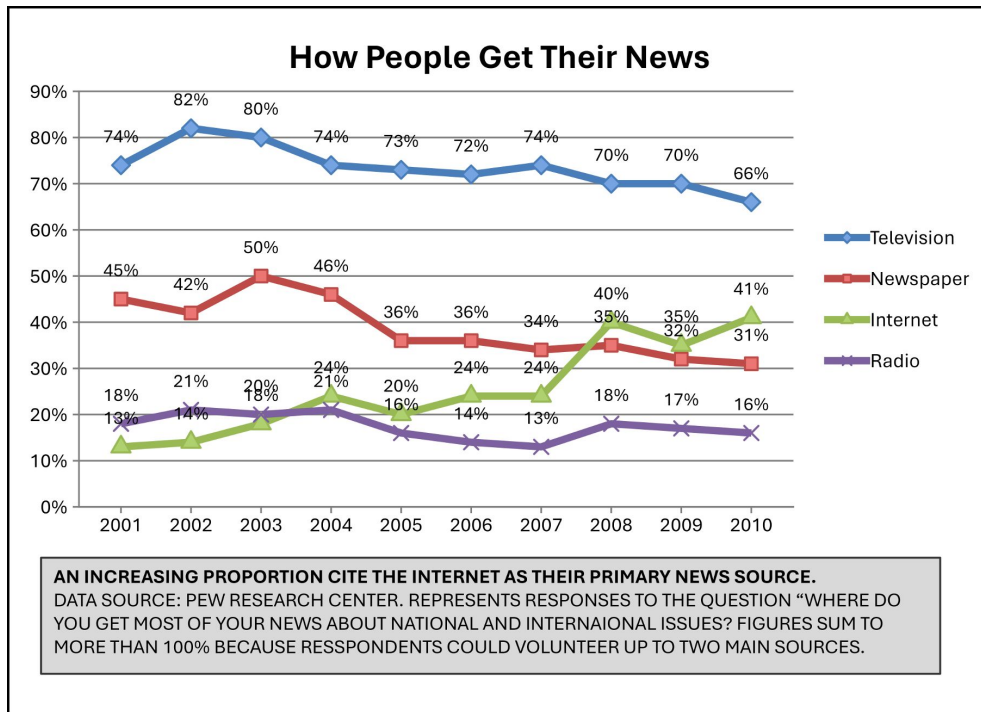


**An increasing proportion cite the internet as their primary news source.**

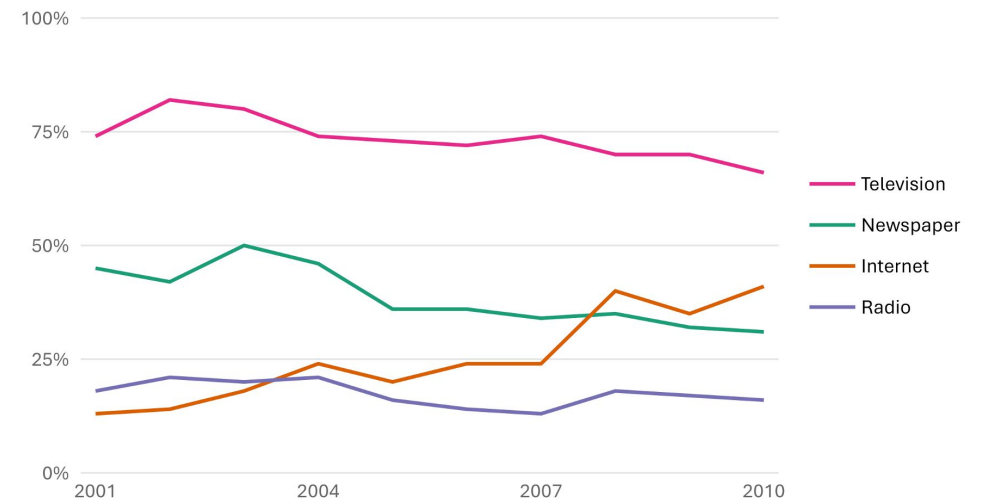
Data source: Pew Research Center. Represents responses to the question “where do you get most of your news about national and international issues?” Figures sum to more than 100% because respondents could volunteer up to two main sources.



# Before & After



### How People Get Their News



**An increasing proportion cite the internet as their primary news source.**  
 Data source: Pew Research Center. Represents responses to the question "where do you get most of your news about national and international issues?" Figures sum to more than 100% because respondents could volunteer up to two main sources.



# Iconic Memory

is a type of **sensory memory** that briefly retains visual information for a very short period.

Iconic memory **operates at a pre-attentive level**, meaning that it functions before conscious attention is directed toward the visual stimuli.



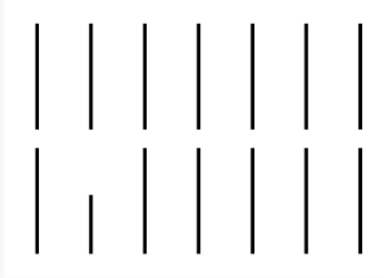


Source: „Where’s Waldo?” by Martin Handford © Kilburn & Strode LLP

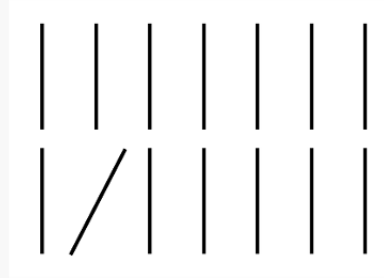




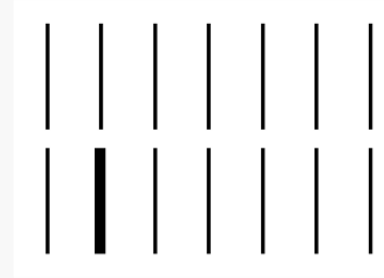
**Length**



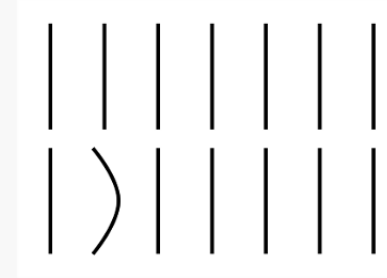
**Orientation / Direction**



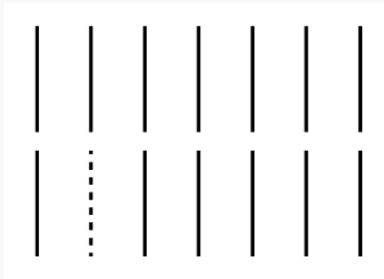
**Width / Size**



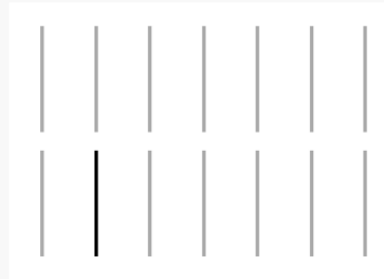
**Curvature**



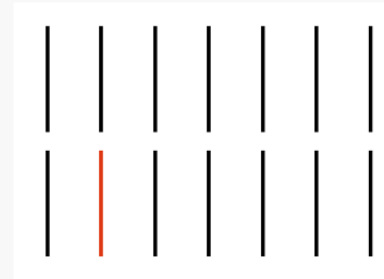
**Shape / Linetype**



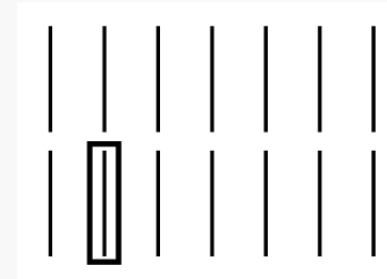
**Intensity**



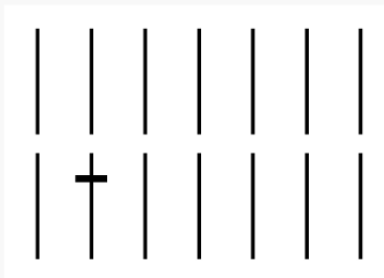
**Hue**



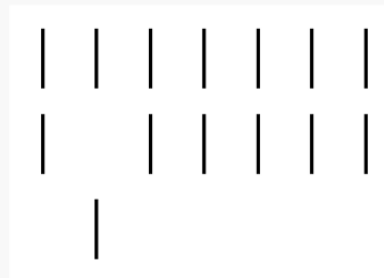
**Enclosure**



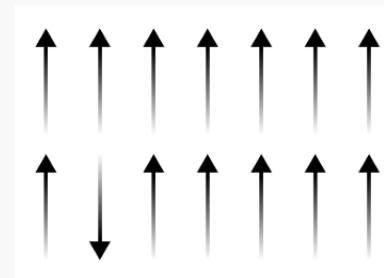
**Added Marks**



**Position**



**Direction of Motion**



Based on schemes by Stephen Few and others

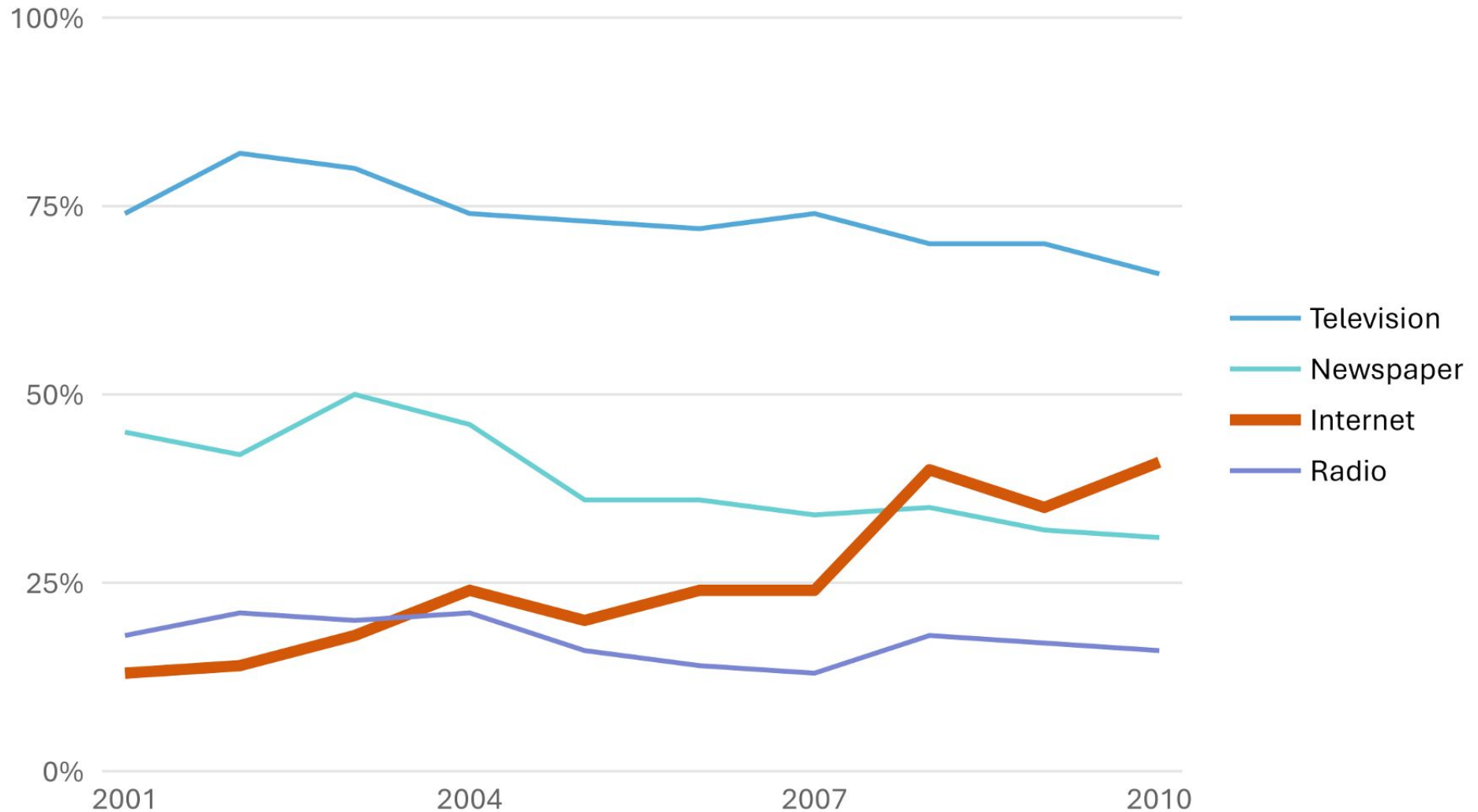


Sachsen-Anhalt	8,8	431	4,0
Schleswig-Holstein	9,1	576	3,1
Niedersachsen	17,5	349	2,1
Thüringen	3,7	229	1,8
Rheinland-Pfalz	6,6	331	1,6
<b>Bayern</b>	<b>19,0</b>	<b>269</b>	<b>1,4</b>
Saarland	1,1	444	1,2
Sachsen	3,9	211	1,0
Baden-Württemberg	9,1	256	0,8
Hessen	5,0	234	0,8
Nordrhein-Westfalen	13,0	380	0,7

Source: „Sonnenkönig oder Hochstapler?“ by Patrick Stotz (Der Spiegel)



# How People Get Their News

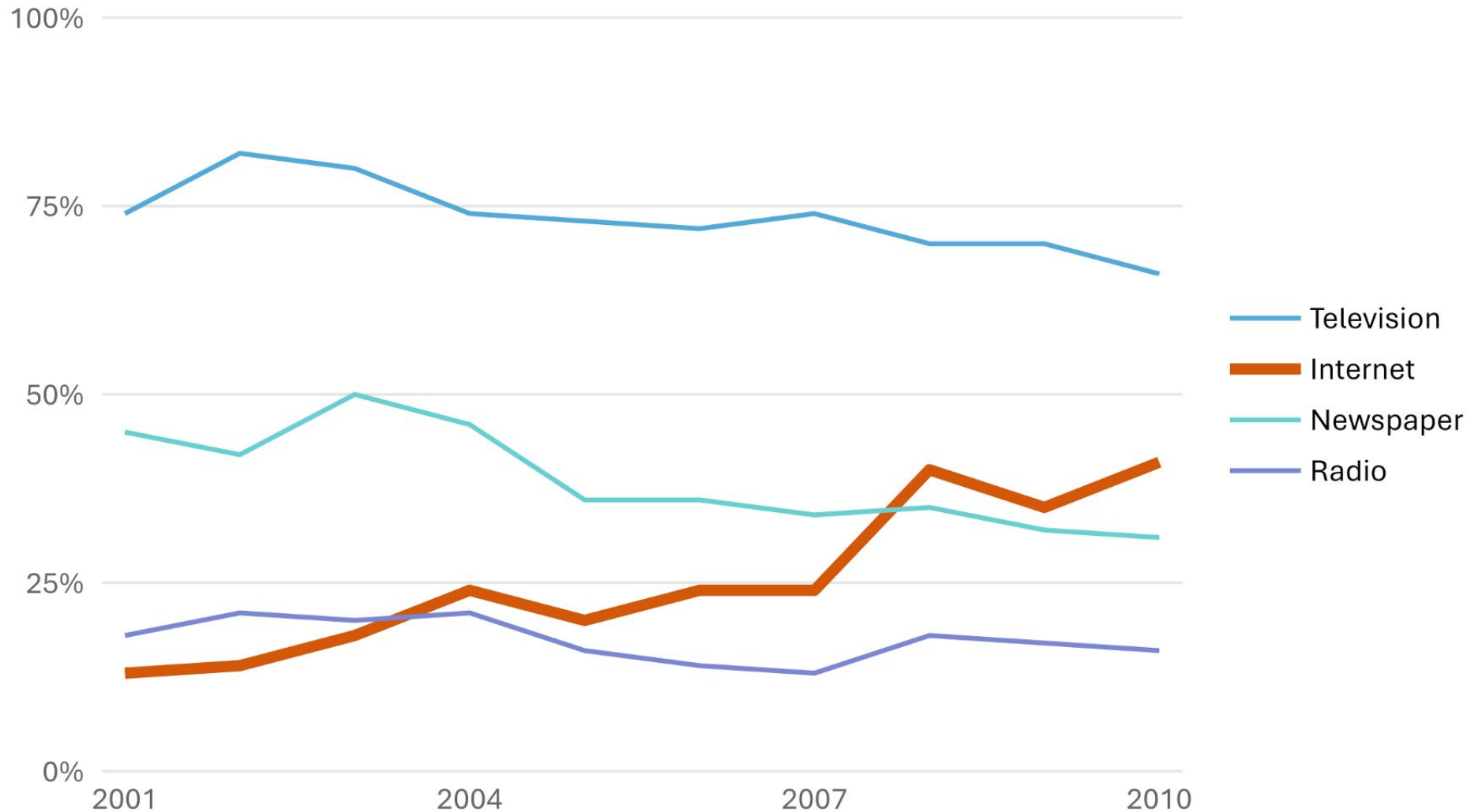


**An increasing proportion cite the internet as their primary news source.**

Data source: Pew Research Center. Represents responses to the question “where do you get most of your news about national and international issues?” Figures sum to more than 100% because respondents could volunteer up to two main sources.



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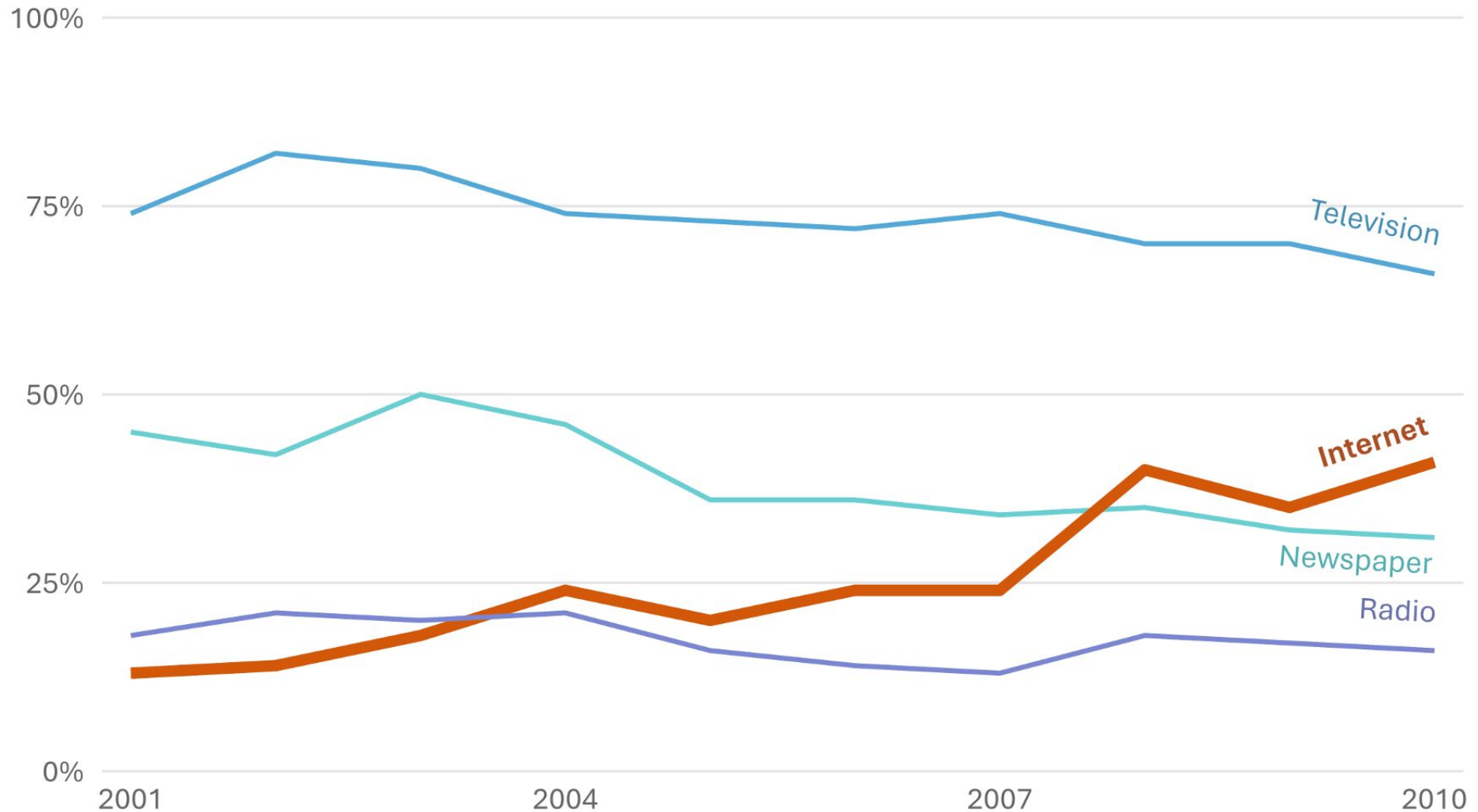


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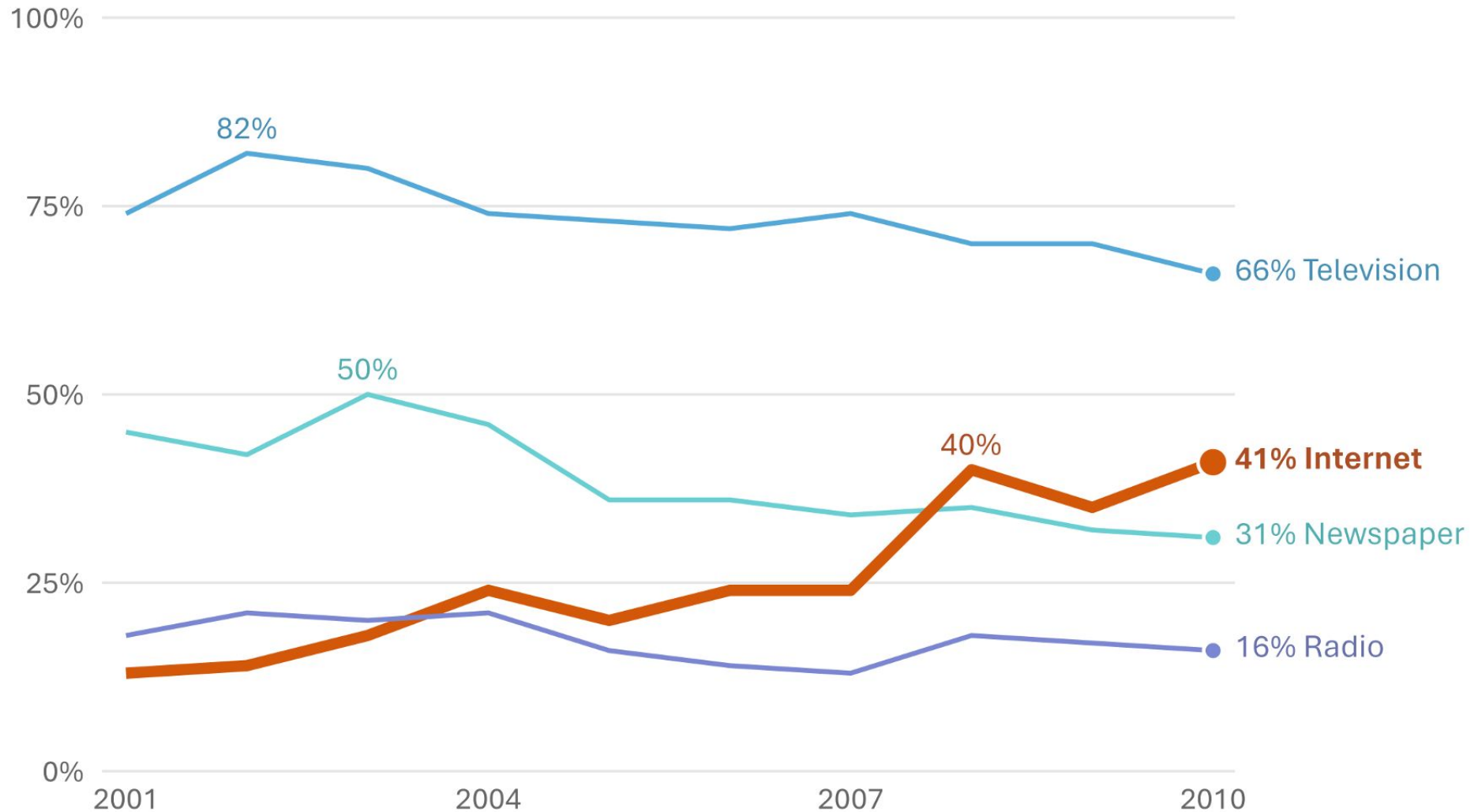


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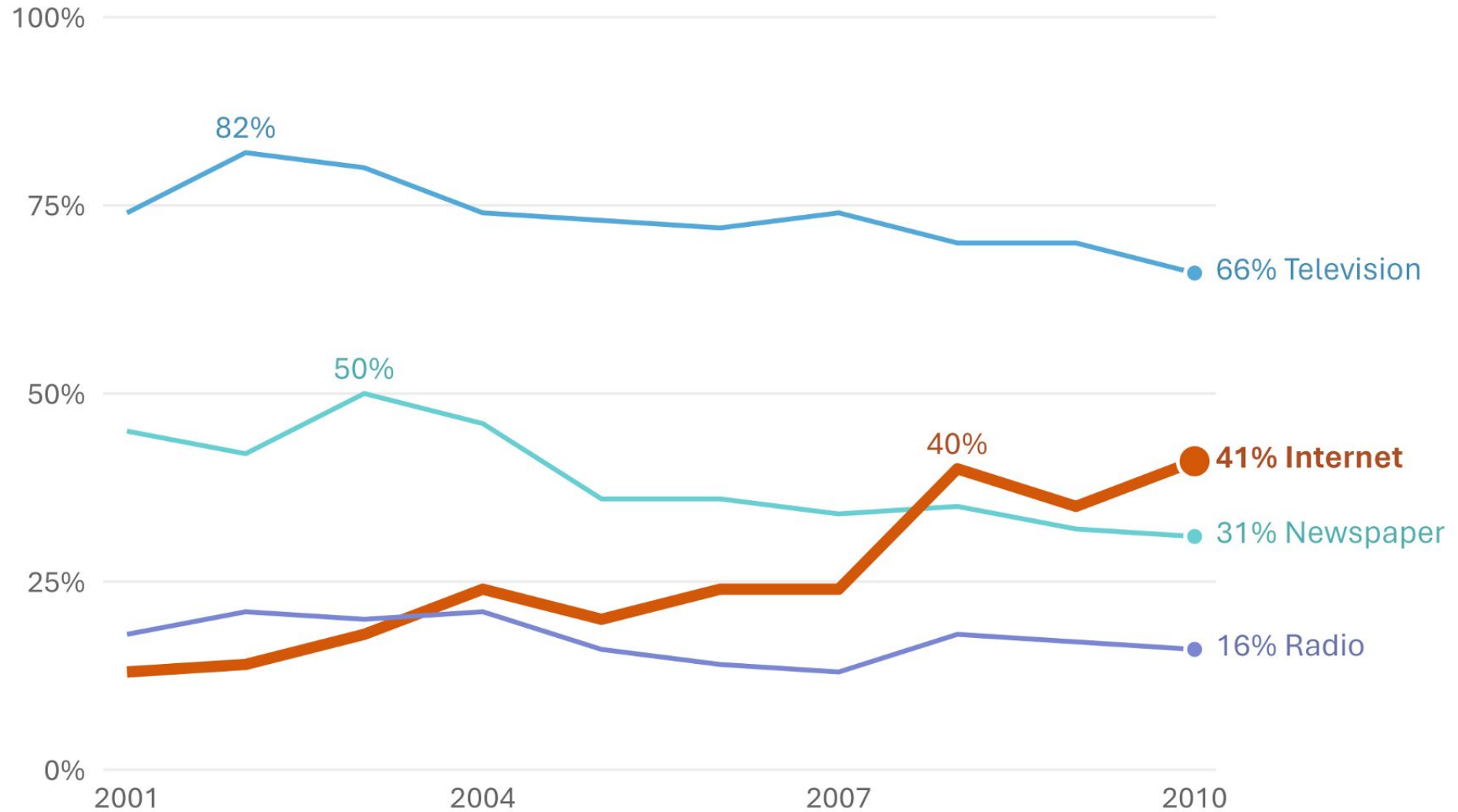
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# An increasing proportion cite the internet as their primary news source.

Responses to the question „where do you get most of your news about national and international issues?”



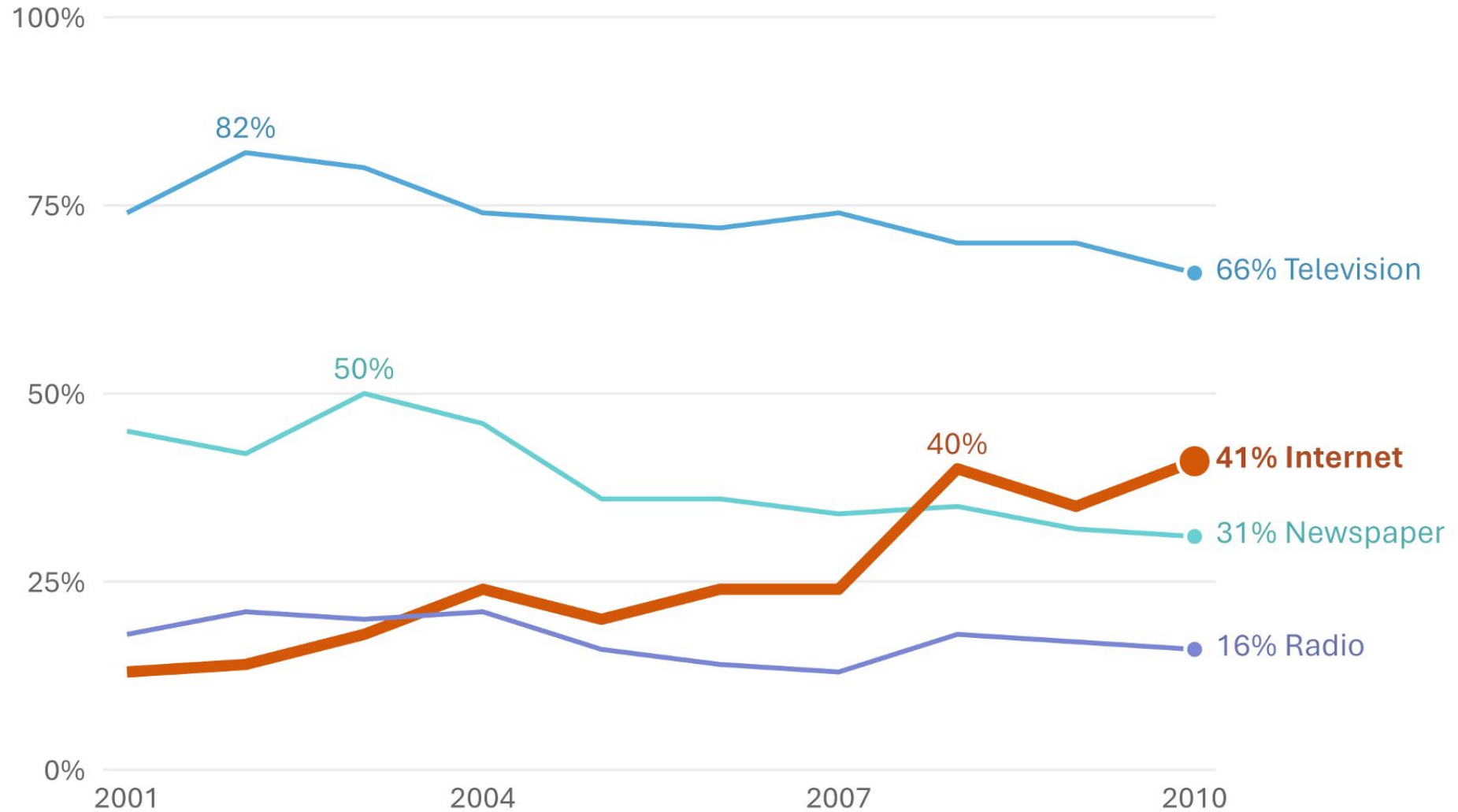
Data source: Pew Research Center

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# An increasing proportion cite the **internet** as their primary news source.

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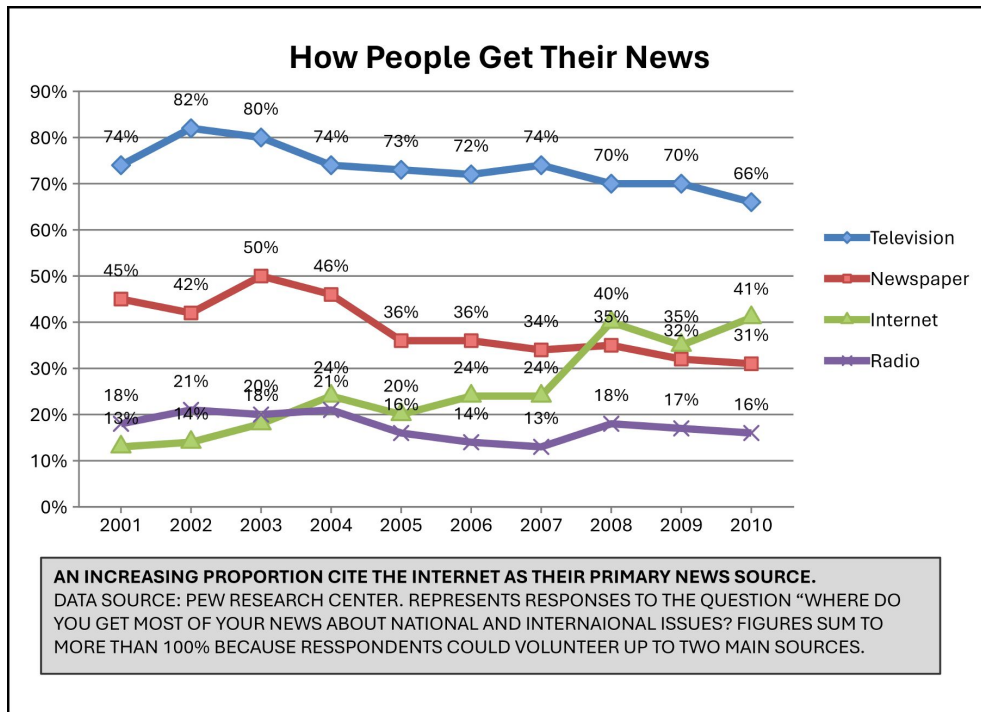


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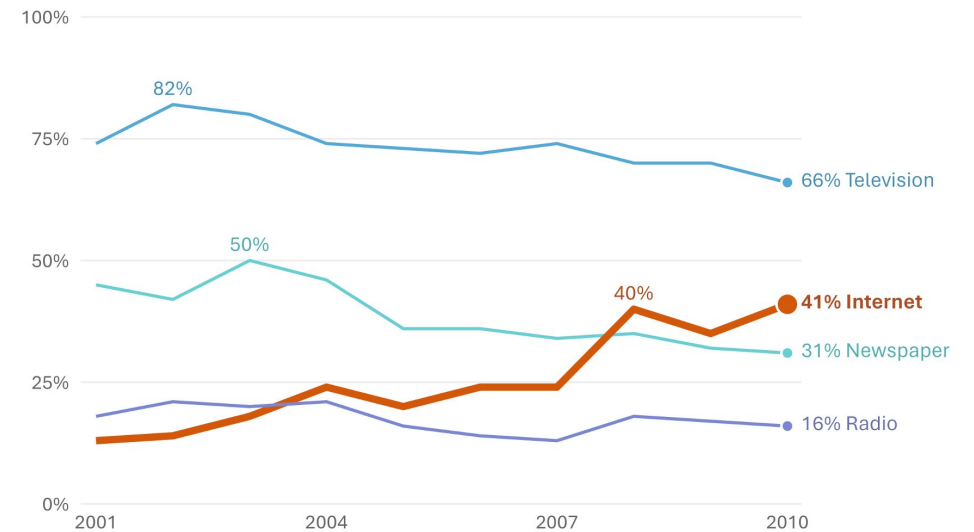


# Before & After



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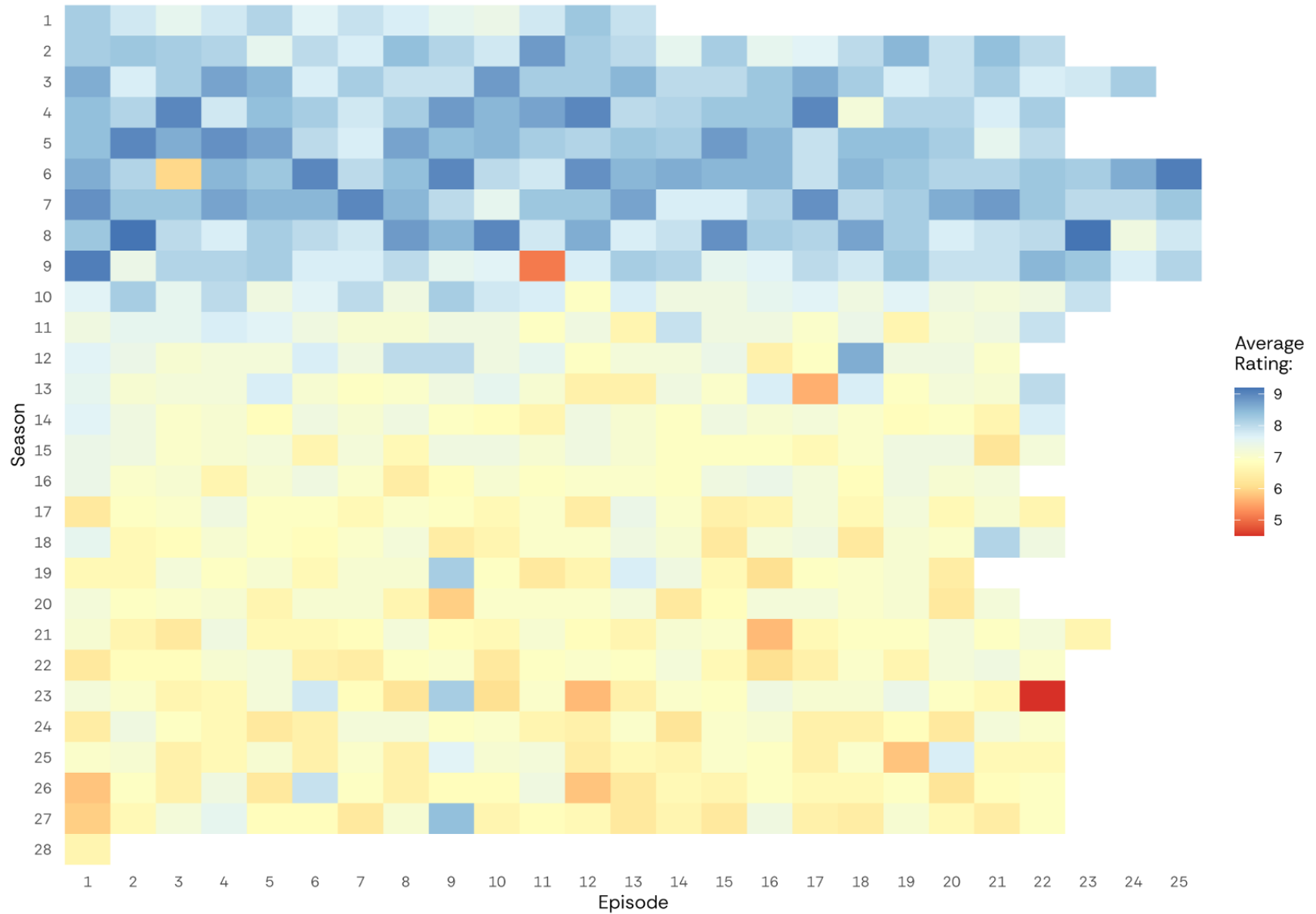
Responses to the question „where do you get most of your news about national and international issues?“



Data source: Pew Research Center  
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# IMDb ratings for "The Simpsons"

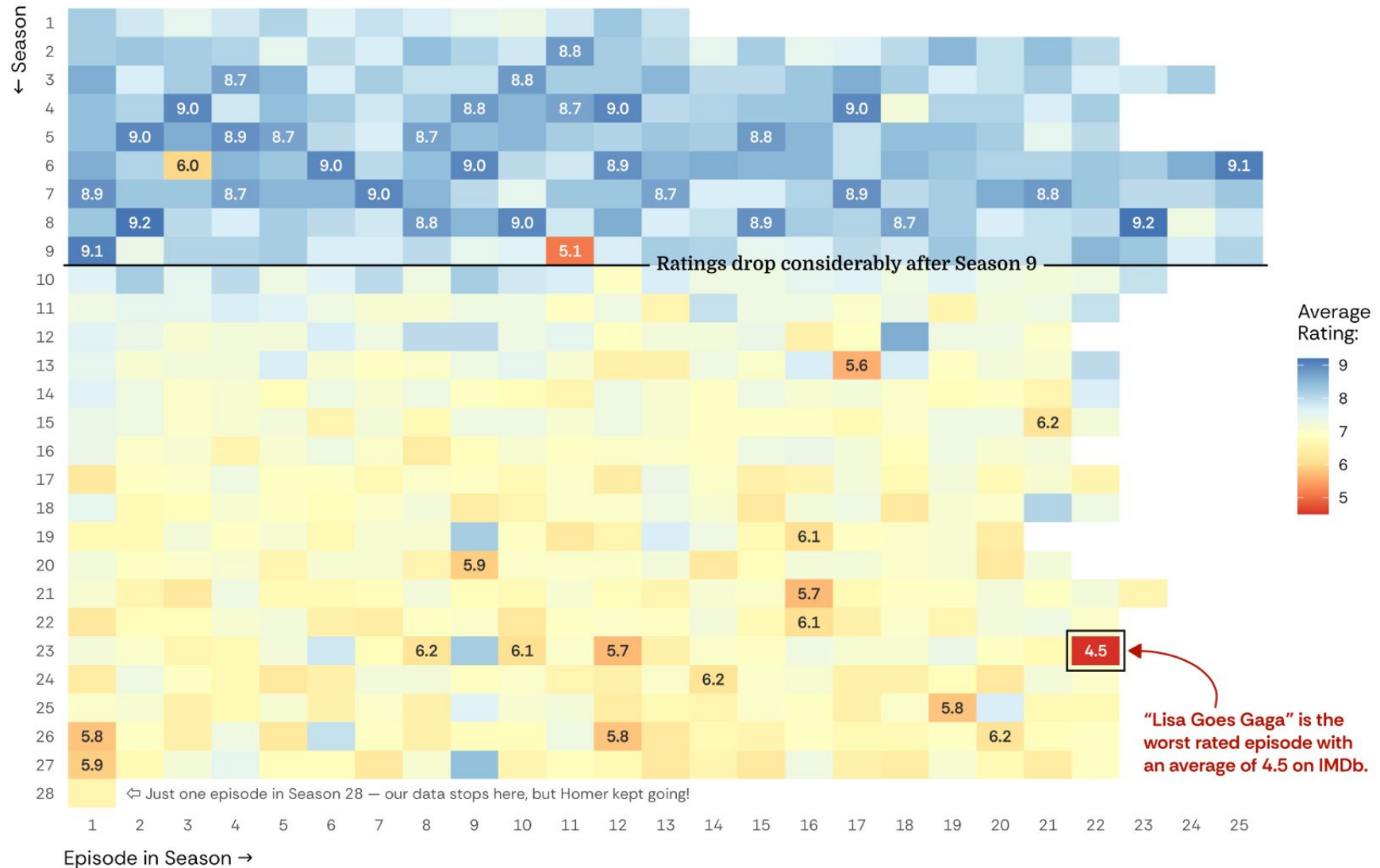


Data: Simpsons Wiki / IMDb.com



## The Simpsons' Golden Years Fade After Season 9

IMDb ratings for "The Simpsons" dropped considerably from a mean of 8.2 in Seasons 1–9 to a mediocre 7.0 rating from Season 10 onwards. The 5% best- and 5% worst-rated episodes are labeled to highlight extremes.



Data: Simpsons Wiki / IMDb.com

⇒ add meaningful titles, provide sufficient context, and emphasize main findings

Cédric Scherer Data Visualization & Information Design

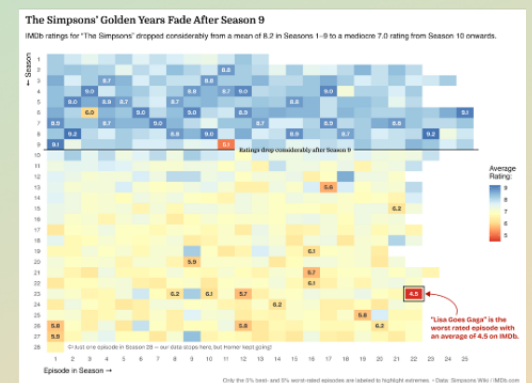
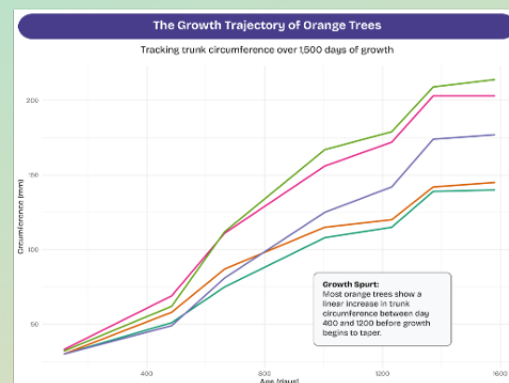
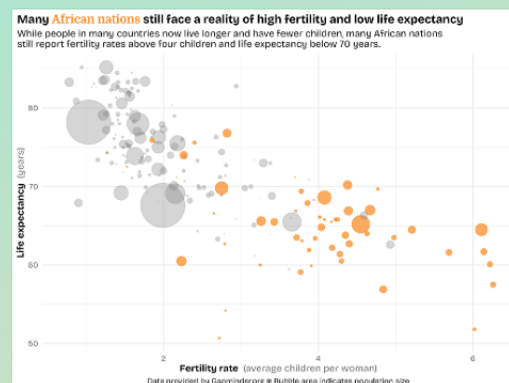
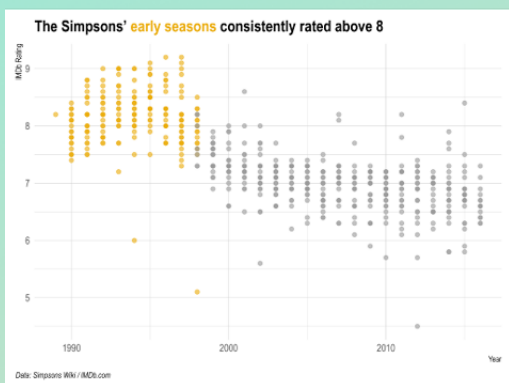
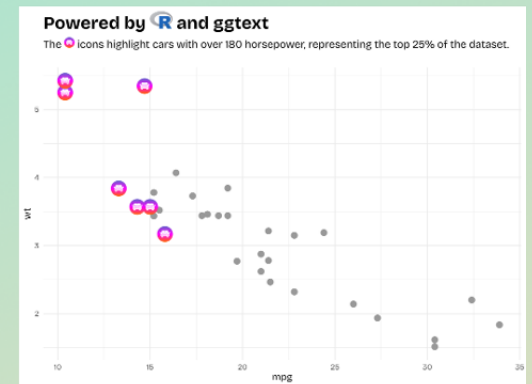
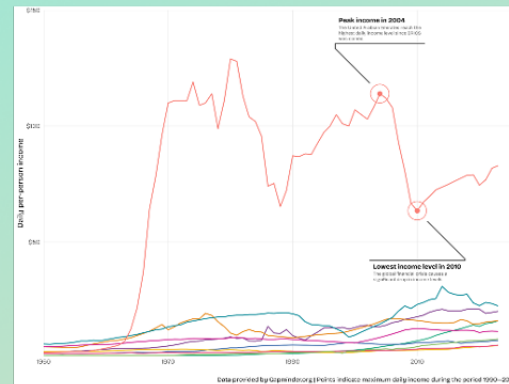
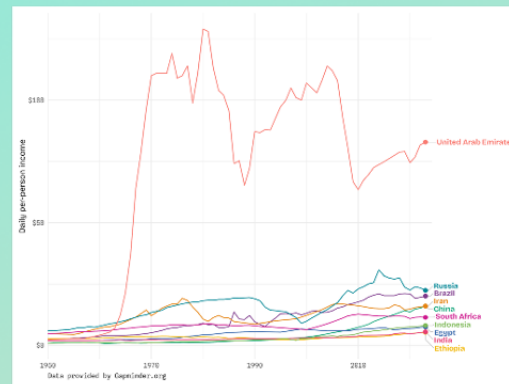
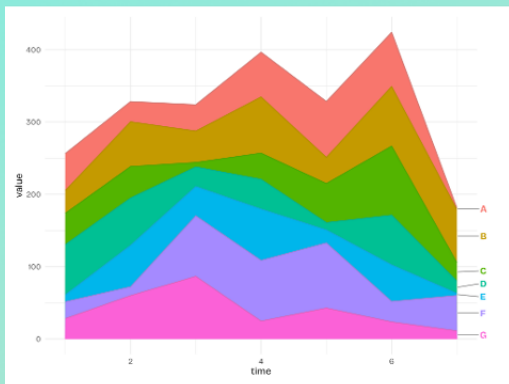
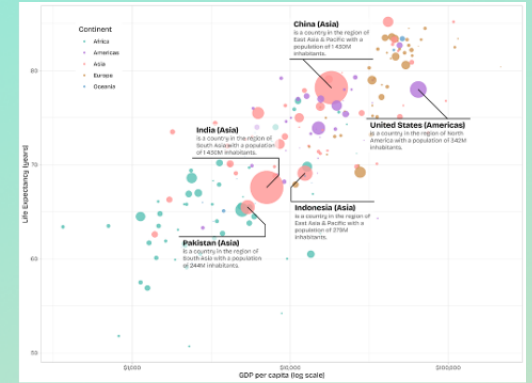
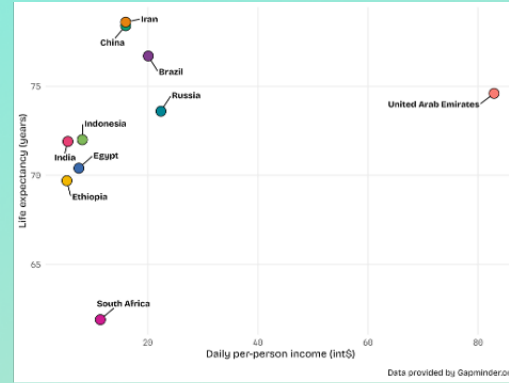
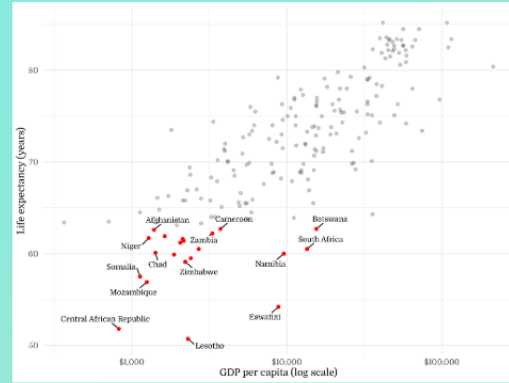
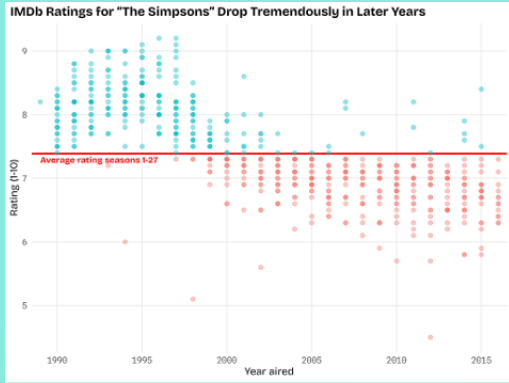


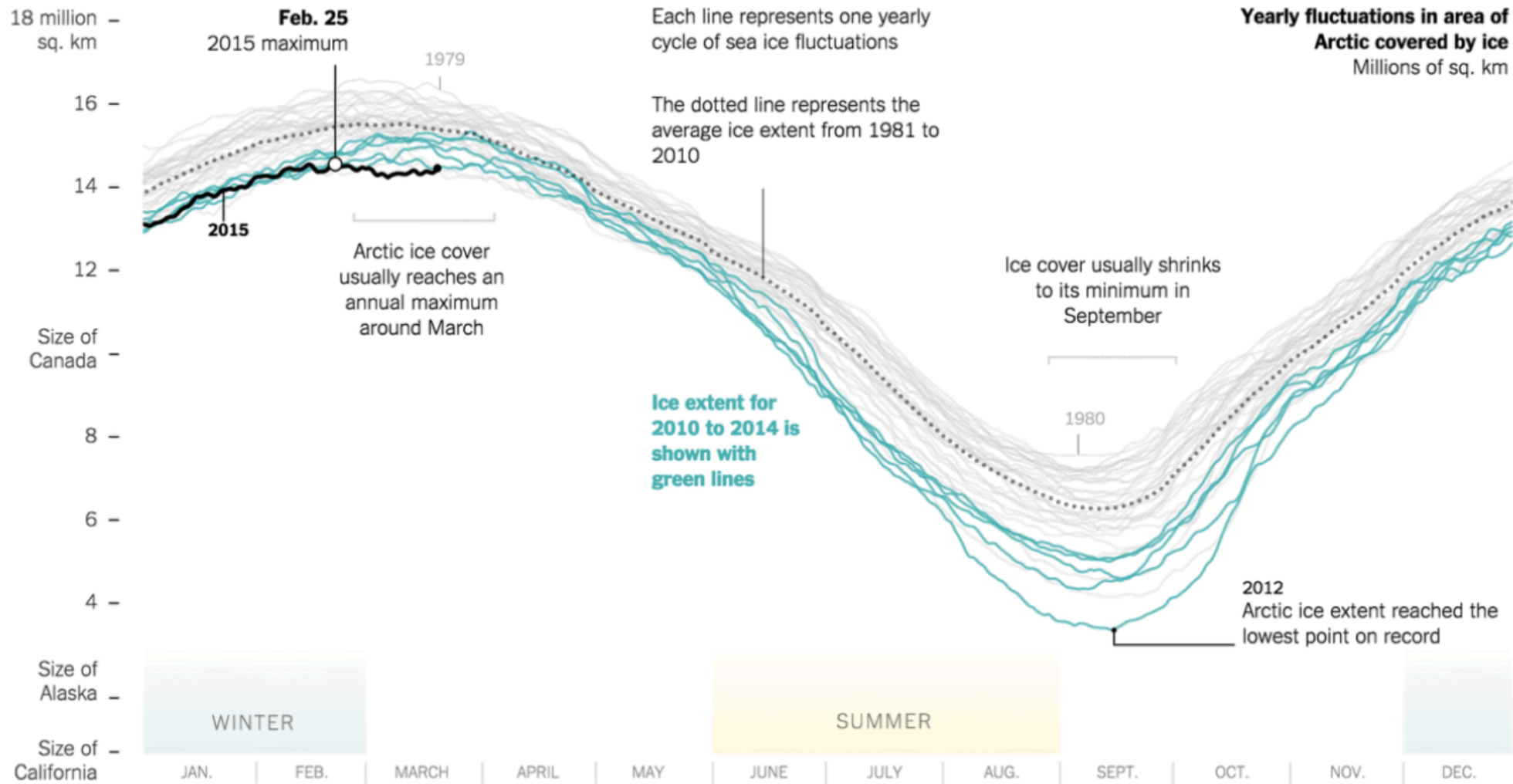
# Picking Titles

Free Lesson

[ggplot2-uncharted.com/module3/titles-captions](https://ggplot2-uncharted.com/module3/titles-captions)







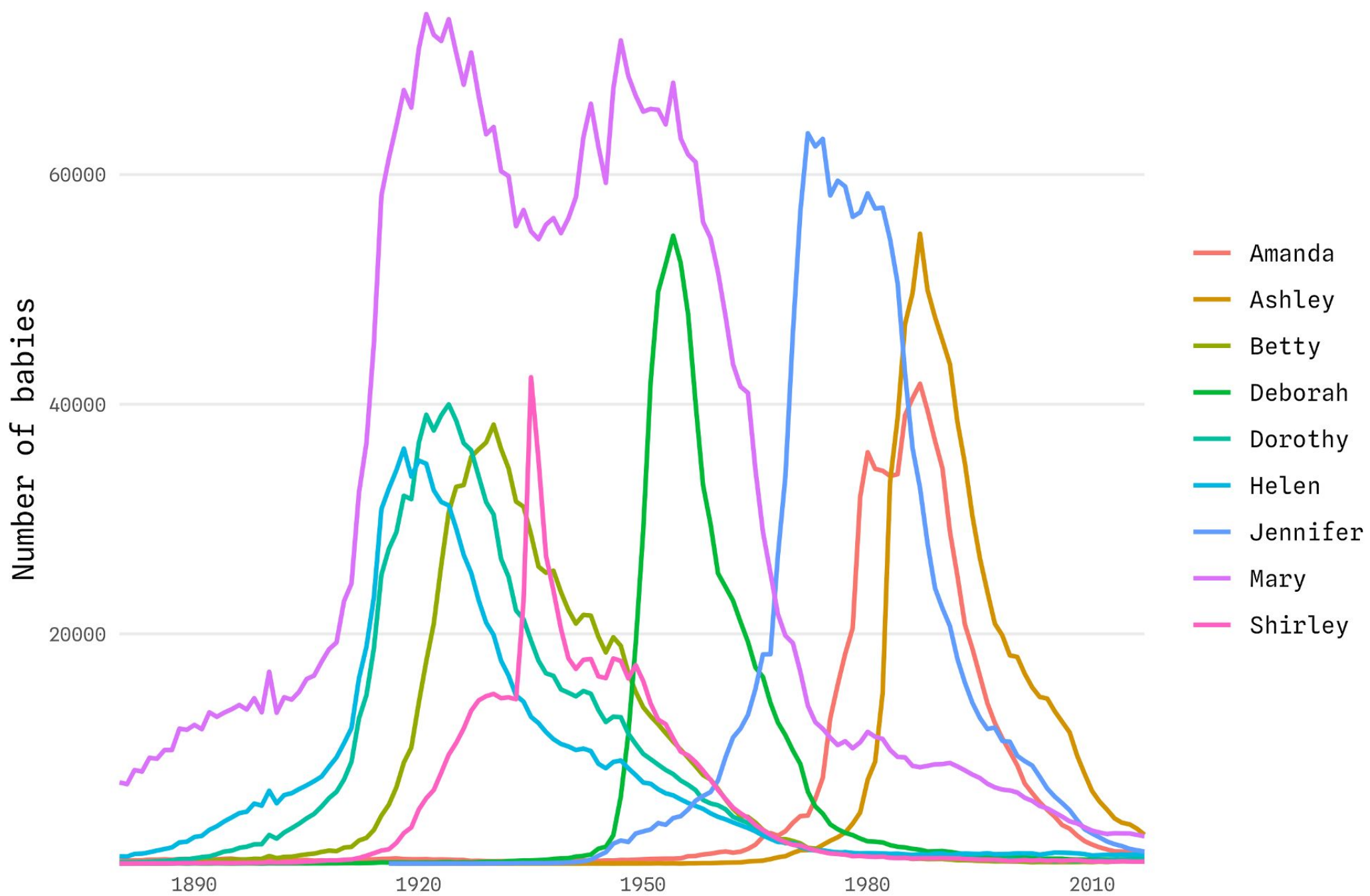
„Yearly Fluctuations in Area of Arctic Covered by Ice” von Derek Watkins (New York Times)



# Allow for Comparison



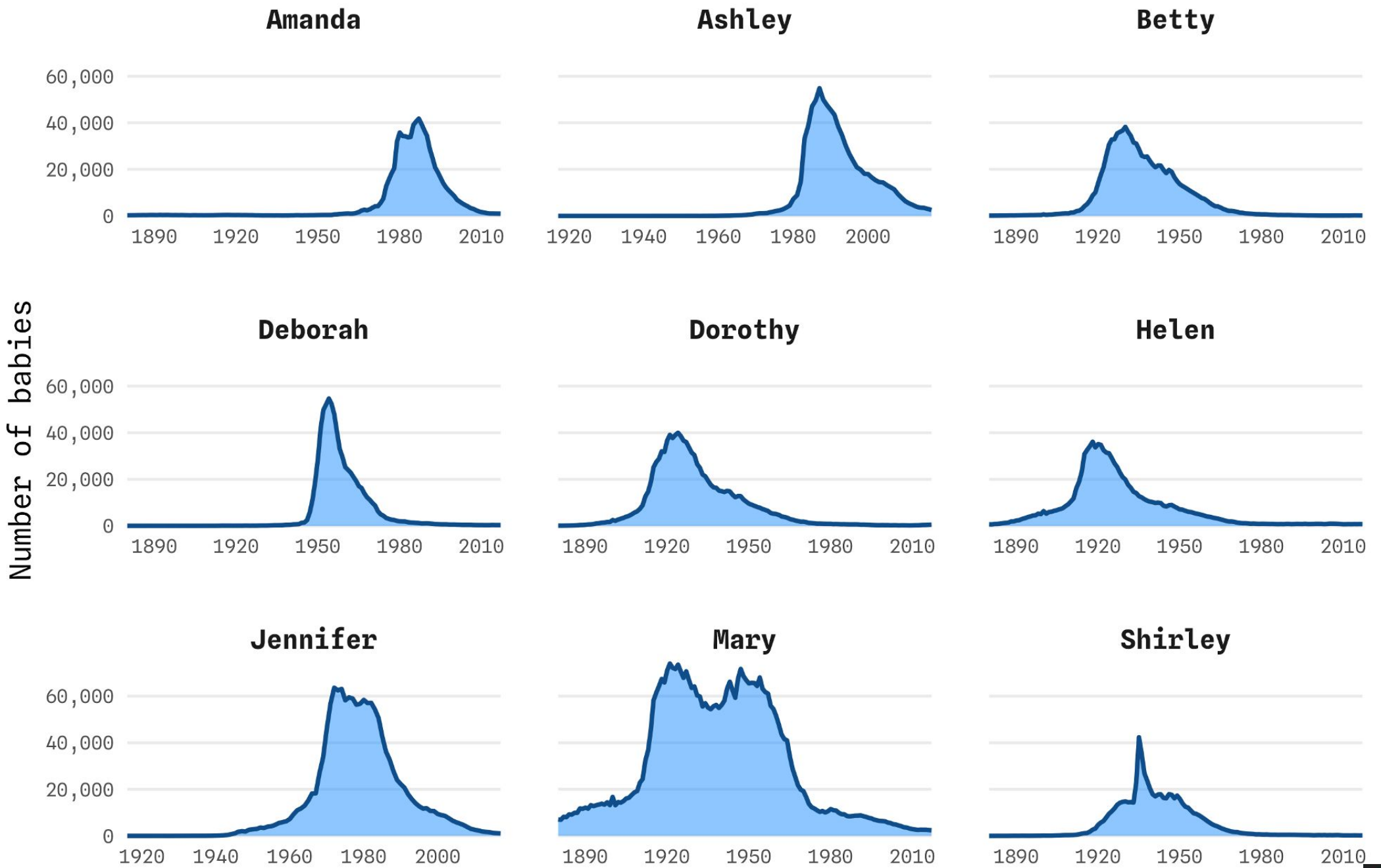


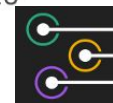
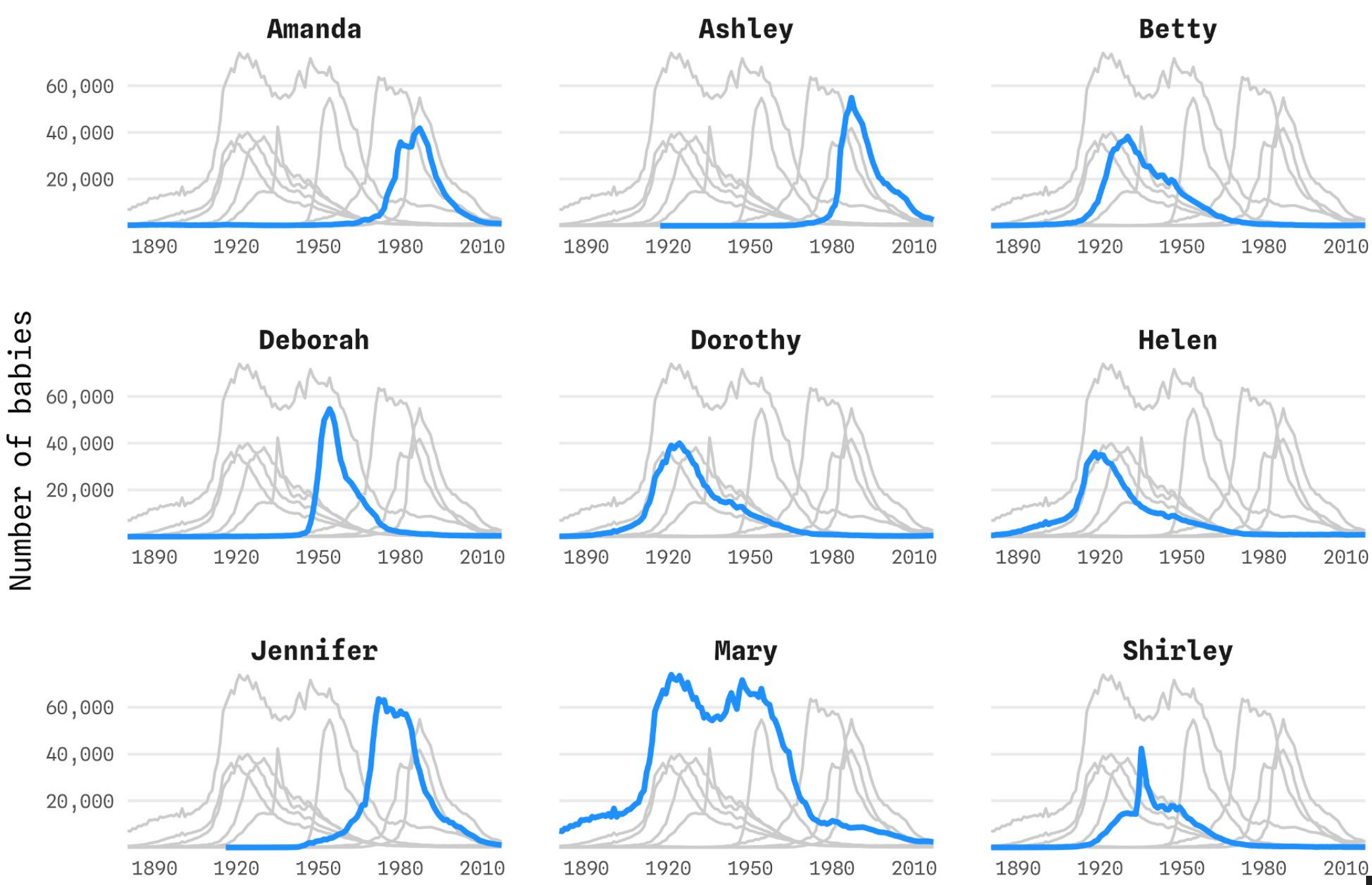


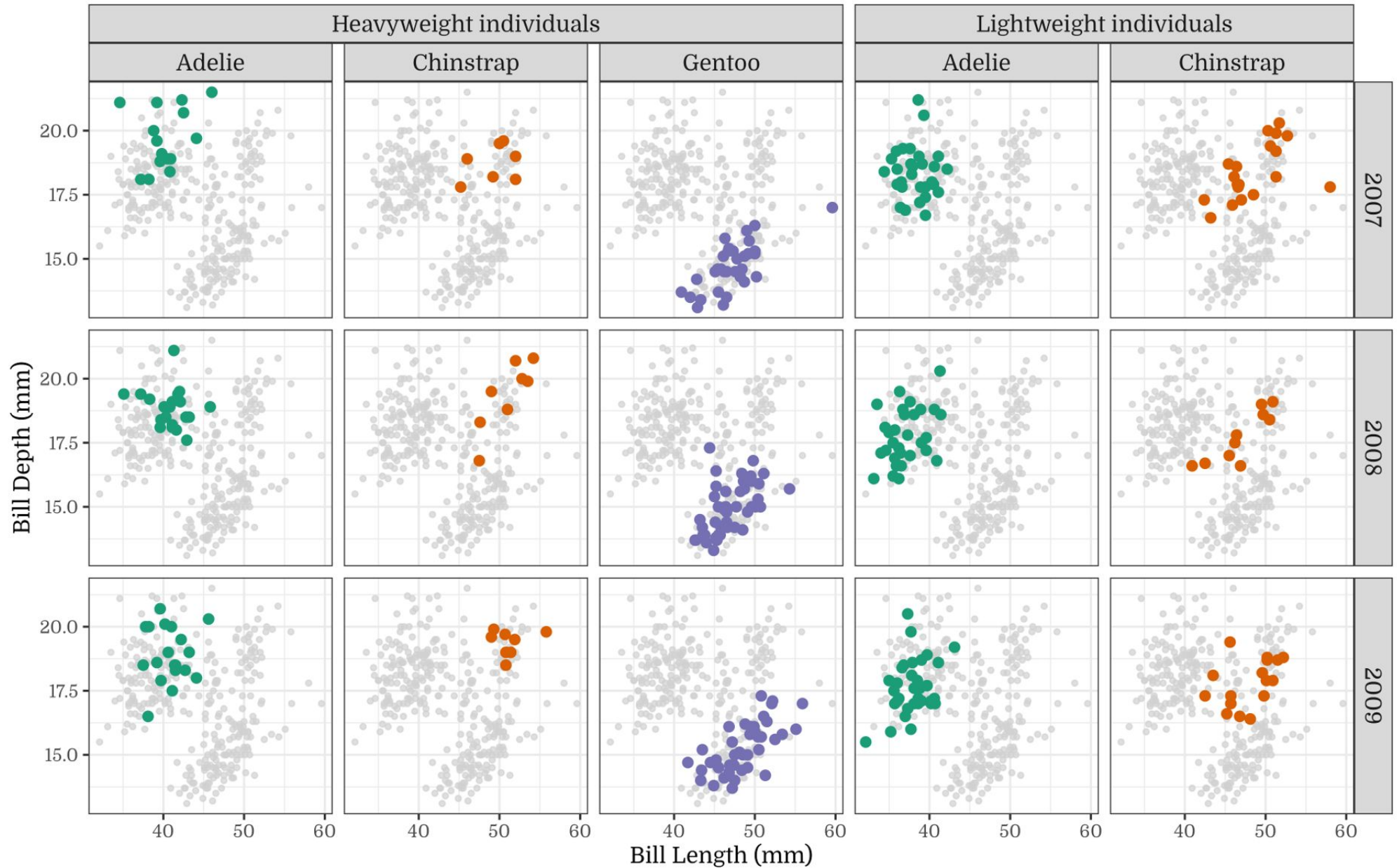
“For a wide range of problems in data presentation,  
**small multiples are the best design solution.**”

Edward Tufte (1990)



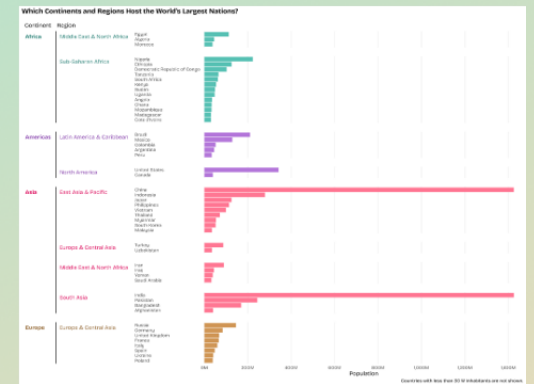
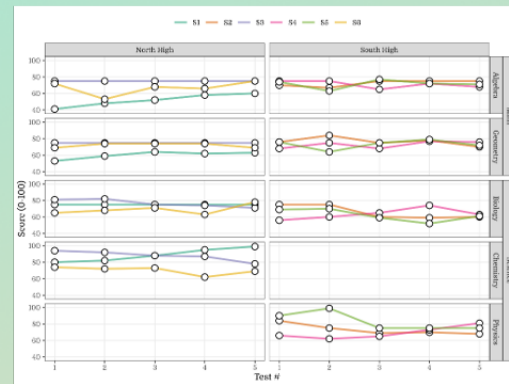
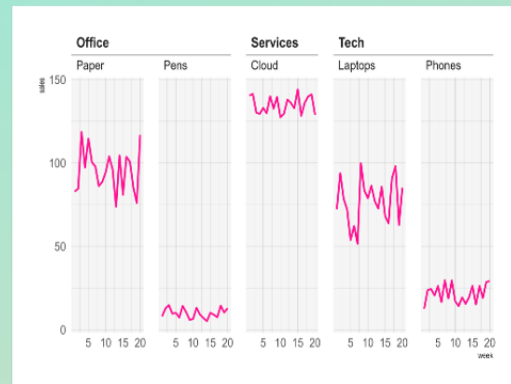
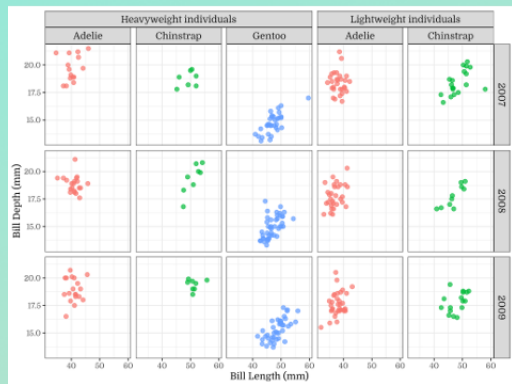
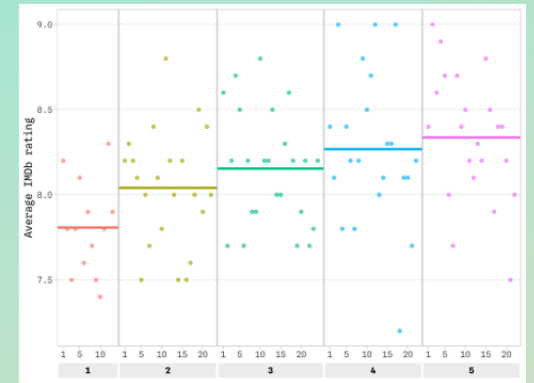
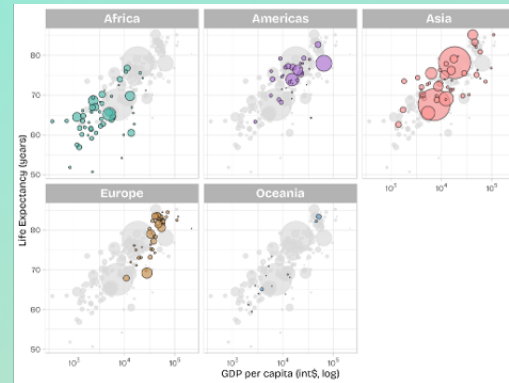
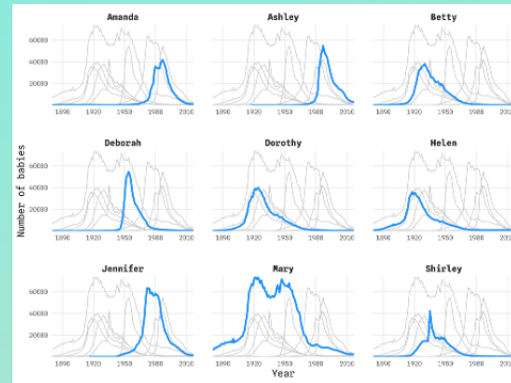
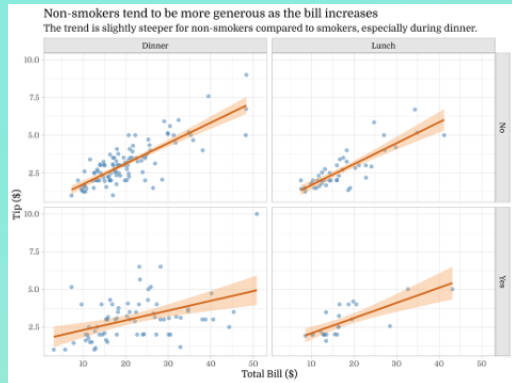




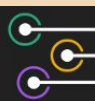


`ggh4x::facet_nested(cols = vars(a, b), rows = vars(c))`





[ggplot2-uncharted.com](http://ggplot2-uncharted.com)



# How Good Design Helps

- **Provide context and guidance.**
- **Consider direct encodings.**
- **Use colors with purpose.**
- **Allow for easy comparisons.**



**“And How Did You Design Those?”**



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with Yan Holtz

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 yan holtz

636 Went

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FEB  
20 Friday 20 February  
17:30 - 18:30 CET

 Google Meet

### Registration

#### Registration Closed

This event is not currently taking registrations. You may contact the host or subscribe to receive updates.

### About Event

AI is reshaping every corner of tech, and data visualization is no exception.



Module 3 Project | ggplot2 | uncharted

ggplot2 uncharted Lessons Ced

## 🌍 The Reproduction Challenge

You've learned how to craft compelling titles, add annotations and callouts, use smart labeling packages, and style text with rich formatting. Now it's time to put it all together!

In this project, your goal is to **reproduce** at least one of the three polished charts below. Each chart showcases different techniques from Module 3. Pick the one that excites you most, or challenge yourself to try all three.

EURO 2024 Scatterplot Bill Ratios of Penguins Trends in News Sources

### 🐧 Bill Ratios of Palmer Penguins Medium

target

#### Bill Ratios of Brush-Tailed Penguins (*Pygoscelis spec.*)

Distribution of bill ratios per species, estimated as bill length divided by bill depth.

Adelie 2.14

Gentoo 2.66

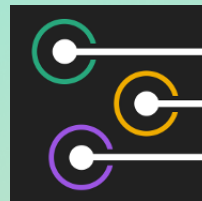
Bill length  
Bill depth

Note: In the raw data, bill dimensions are recorded as "culmen length" and "culmen depth". The culmen is the dorsal ridge along the bill.



# Thank You!

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**CÉDRIC SCHERER**  
Data Visualization & Information Design

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`ggplot2` uncharted

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