Information Visualization

Temporal Data

Dr. David Koop

Temporal Data

- Events: position and duration
- Trajectories: position changes over time
- Calendar: cyclic, relationship to human structures (weeks, months)
- Time Series: quantitative values over time

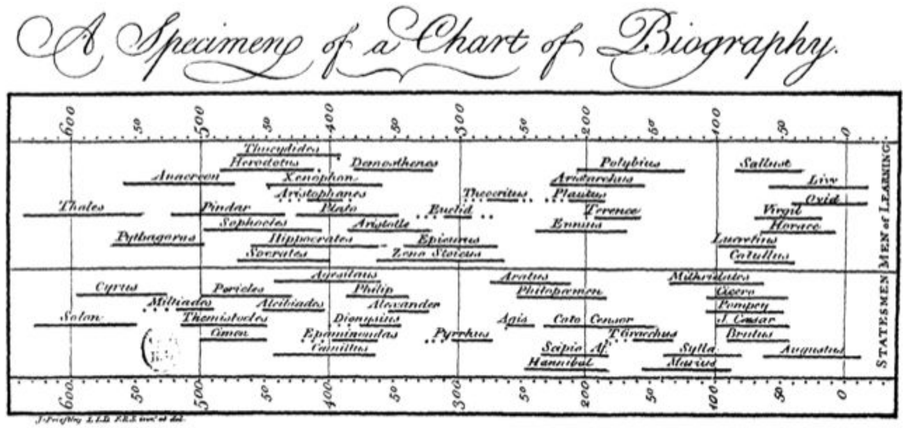
[B. Bach]

Temporal Data Tasks

- Statistics: min/max, trends, outliers
- Difference and rate of change
- Order & variation
- Noise vs. signal
- Correlations (including with events)
- Space and Time relationships

[B. Bach]

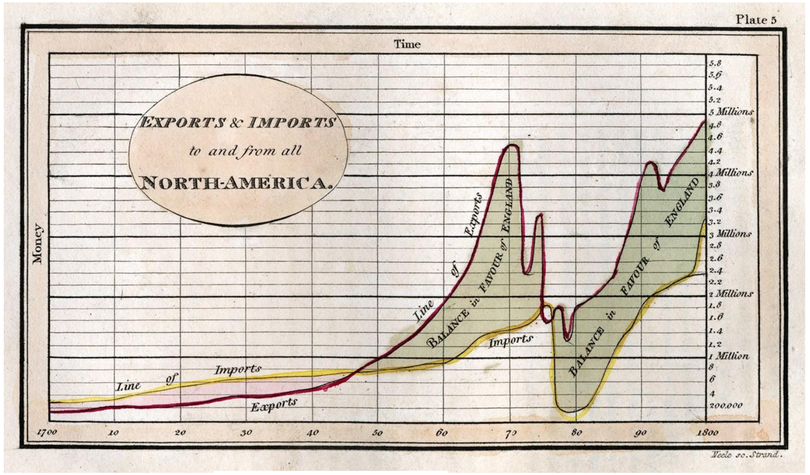
Temporal Data



Events

Trajectories

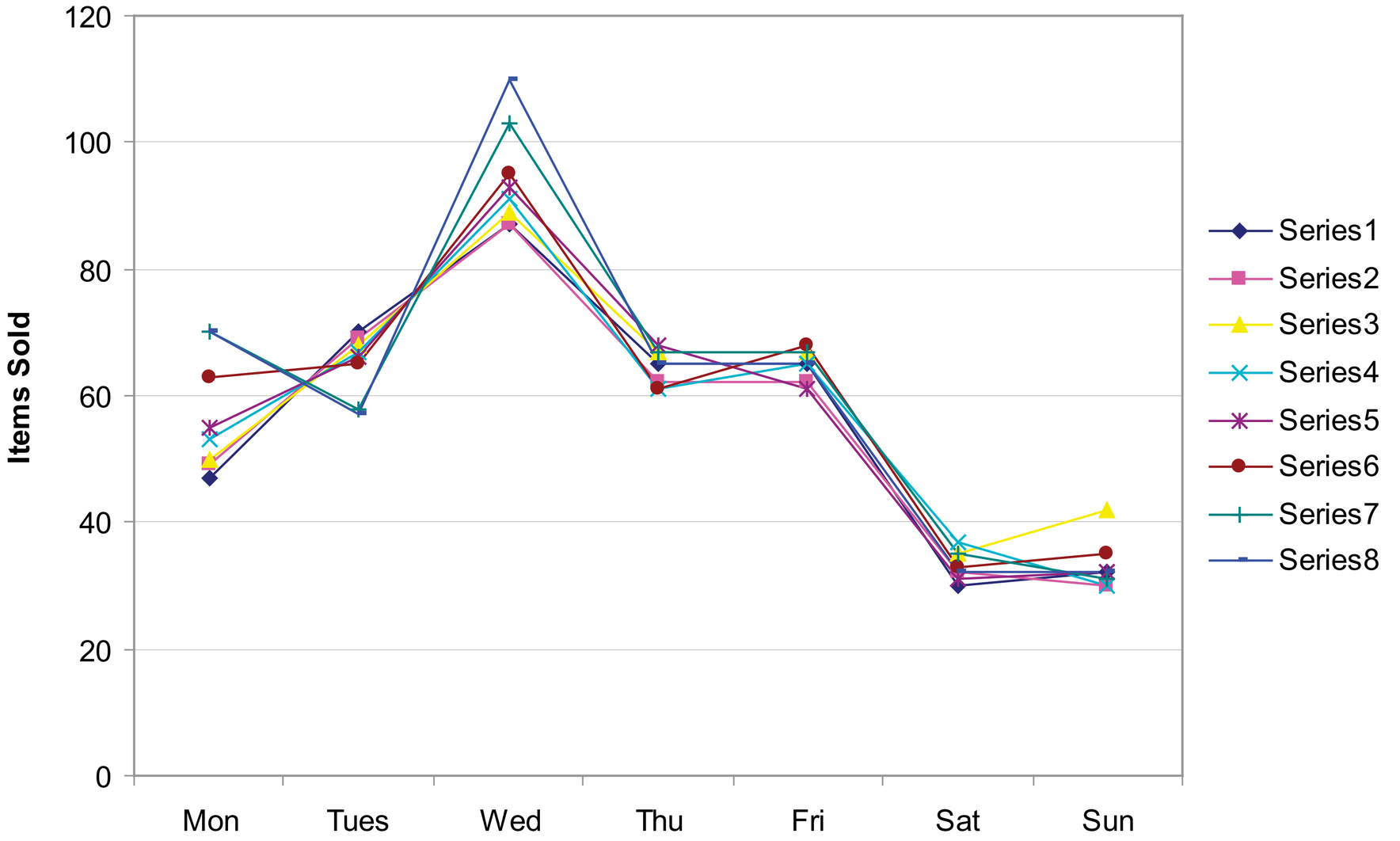
Calendar



Time series

[B. Bach]

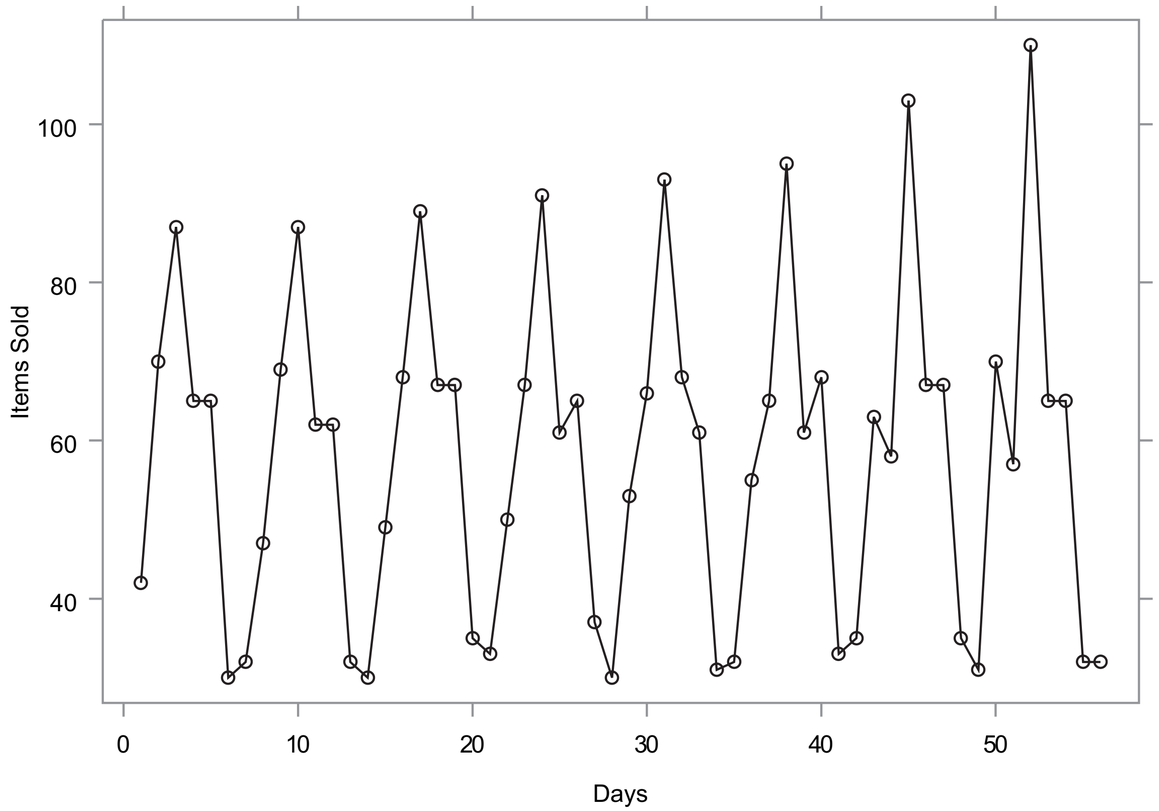
Periodicity in Temporal Data



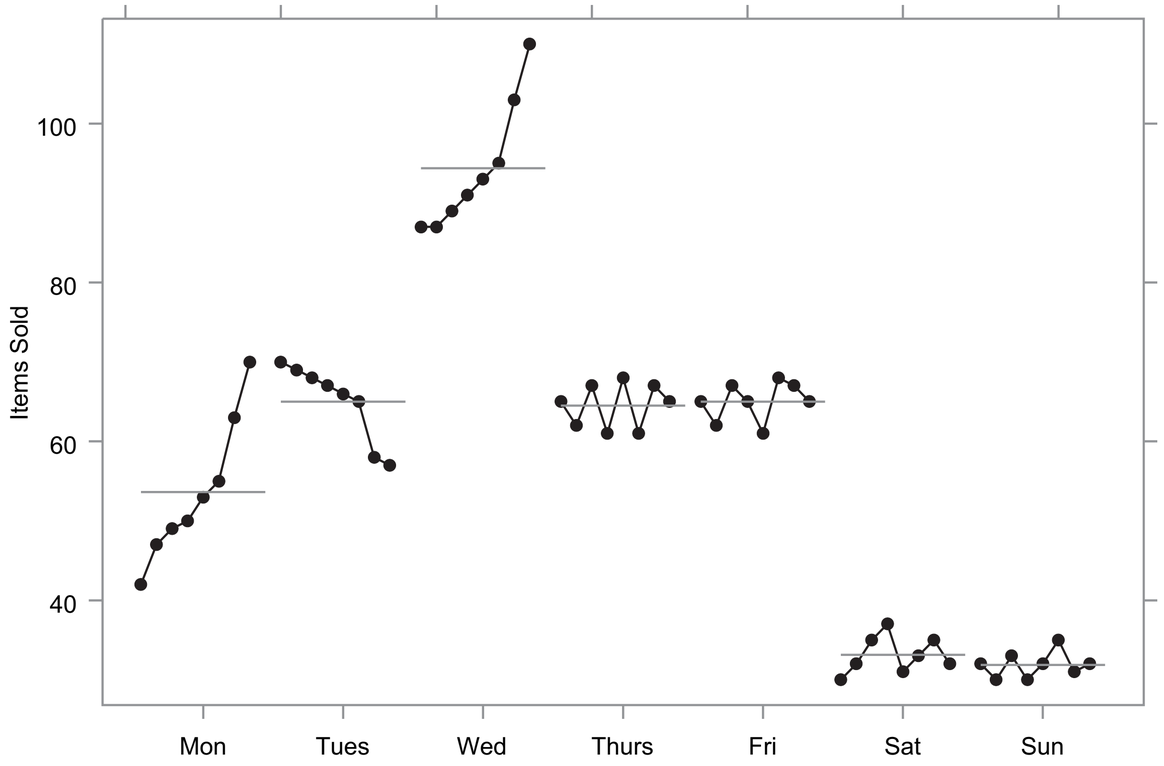
[N. B. Robbins]

Cycle Plots

Standard Line Plot

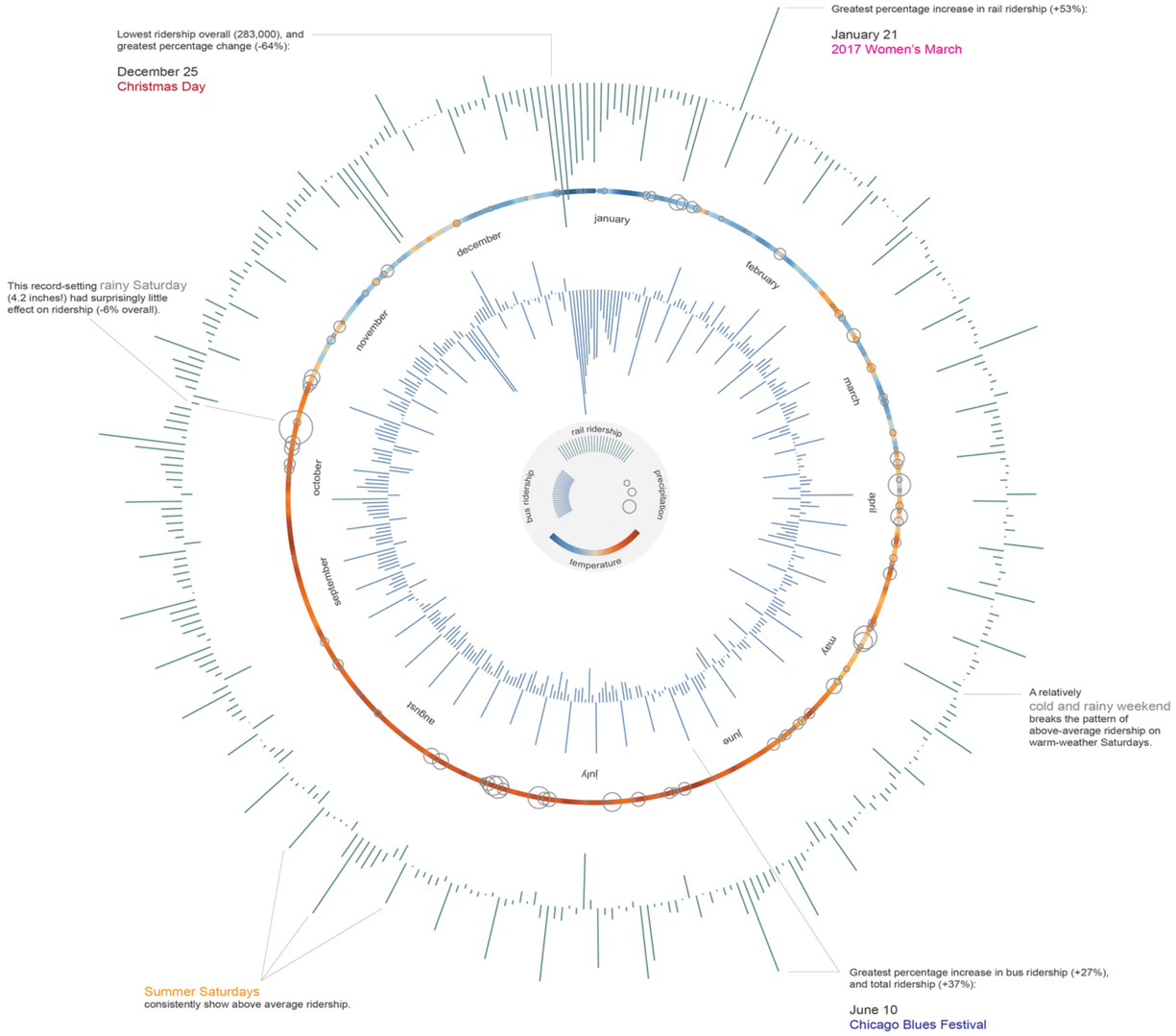


Cycle Plot



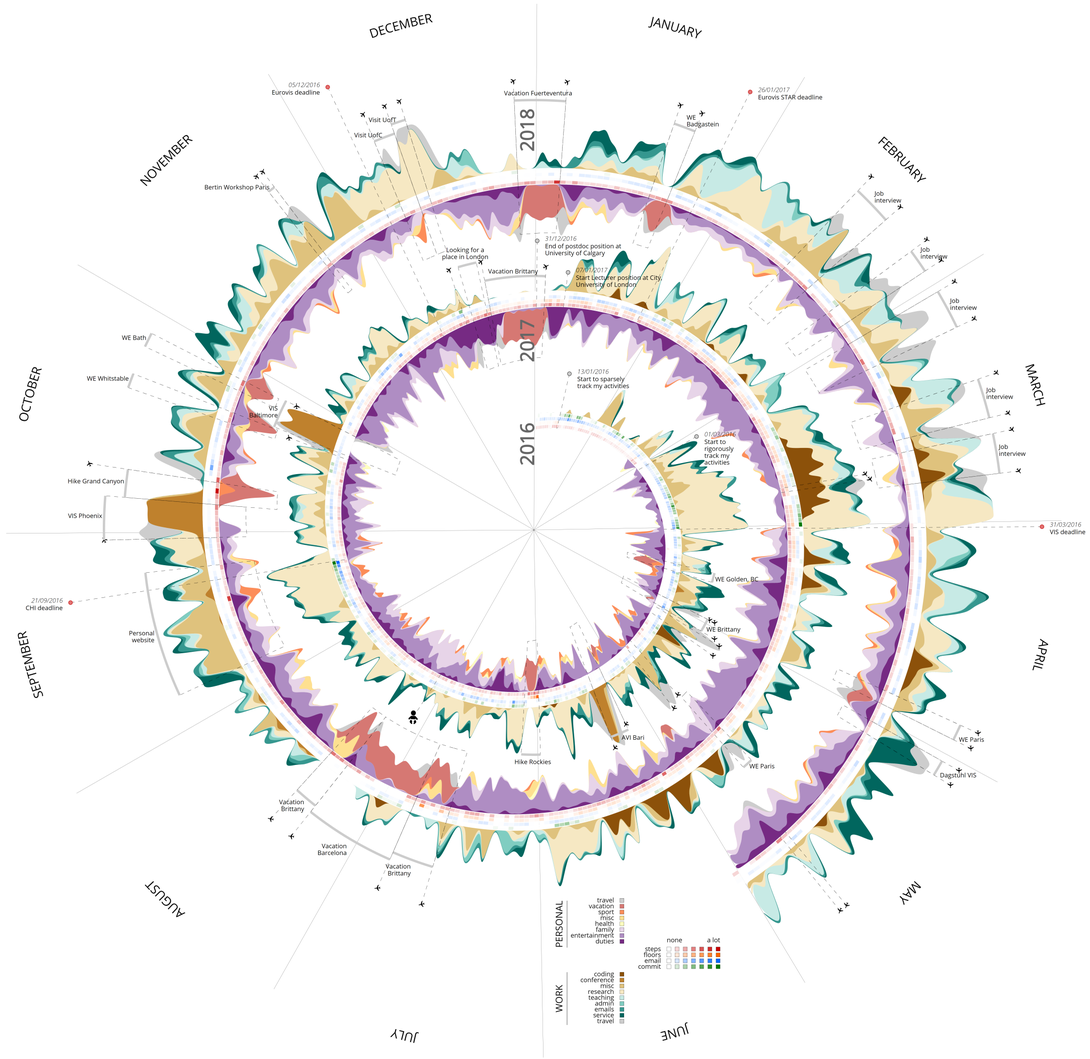
[N. B. Robbins]

Radial Techniques



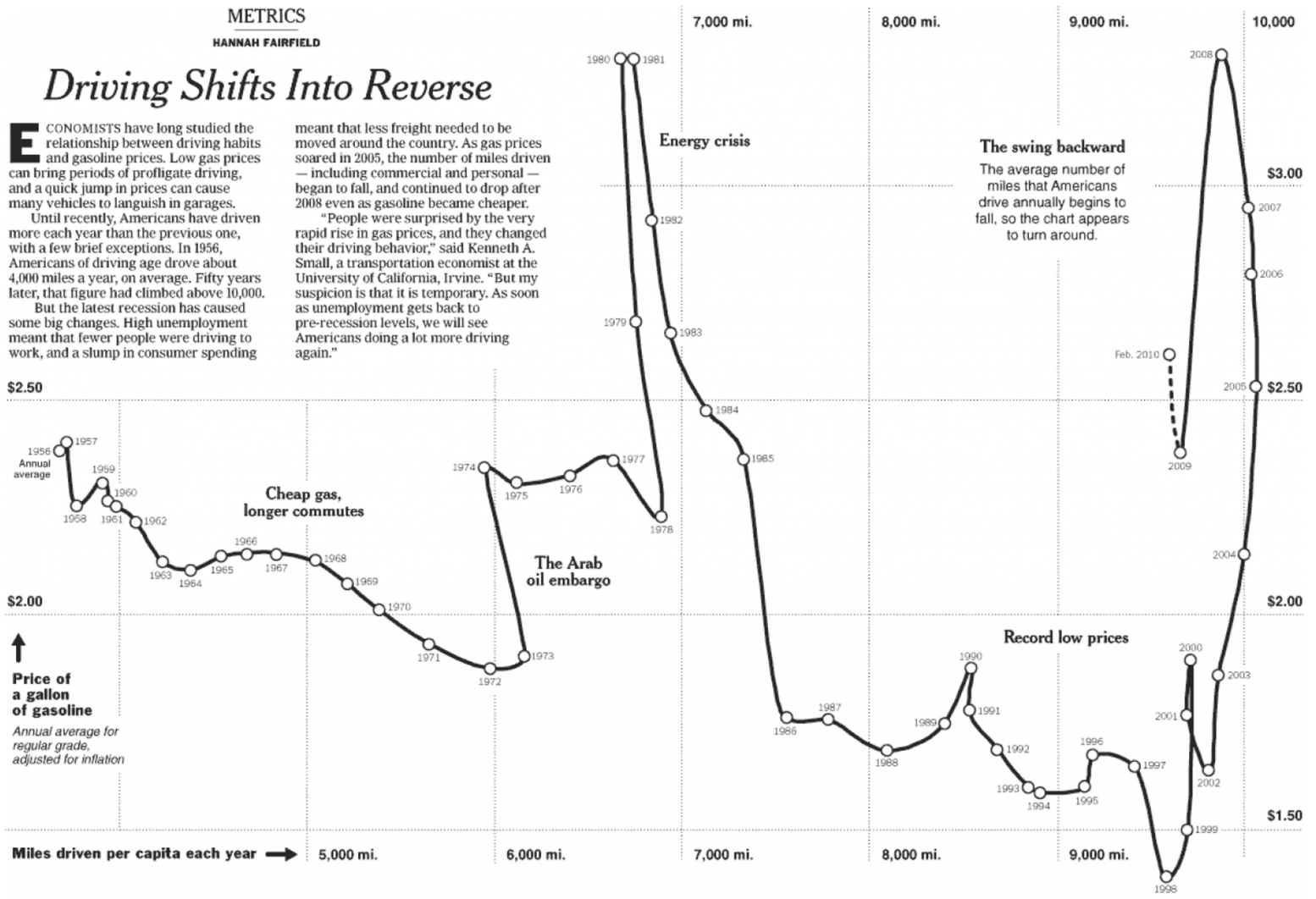
[C. E. Santoro]

Radial Techniques



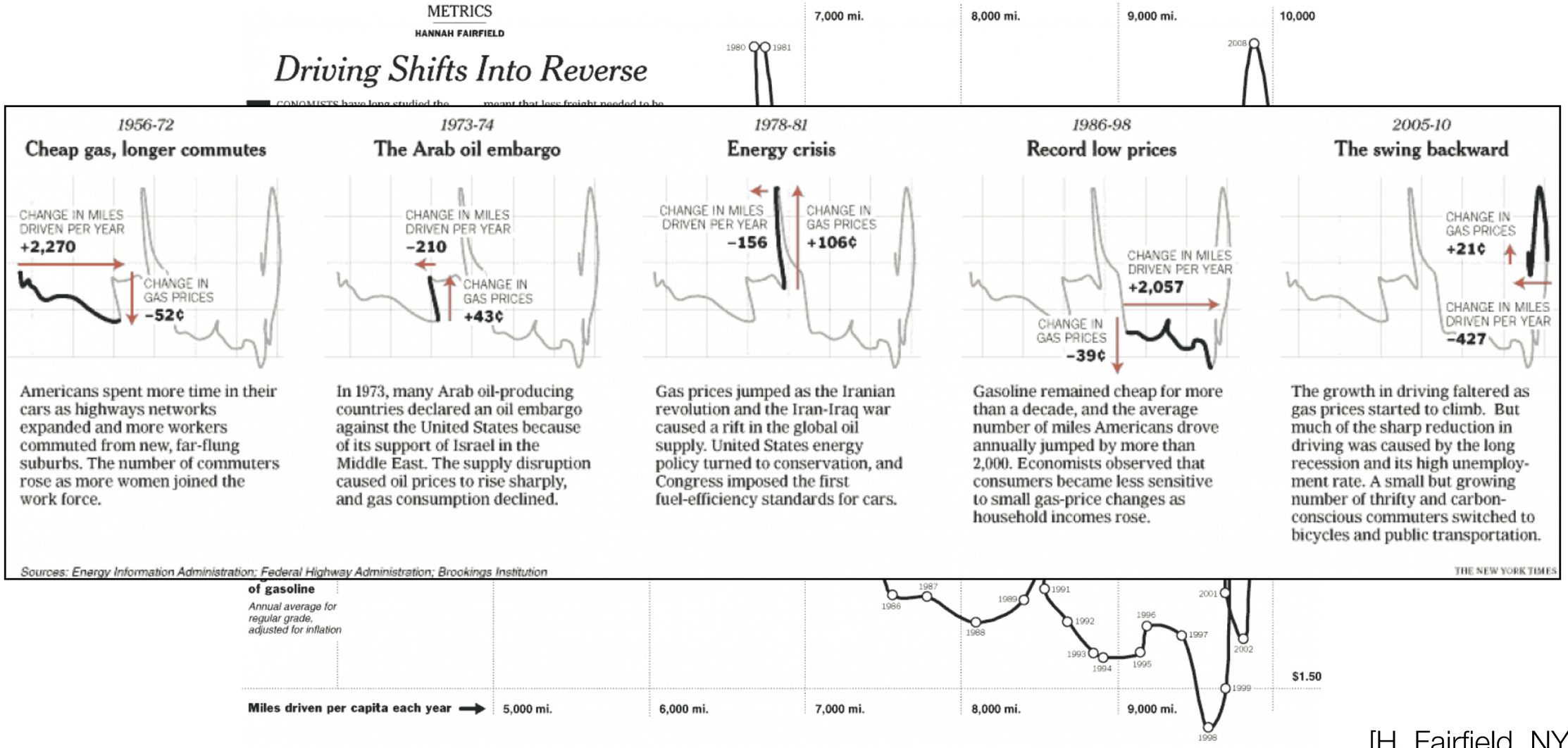
[C. Perin]

Connected Scatterplot



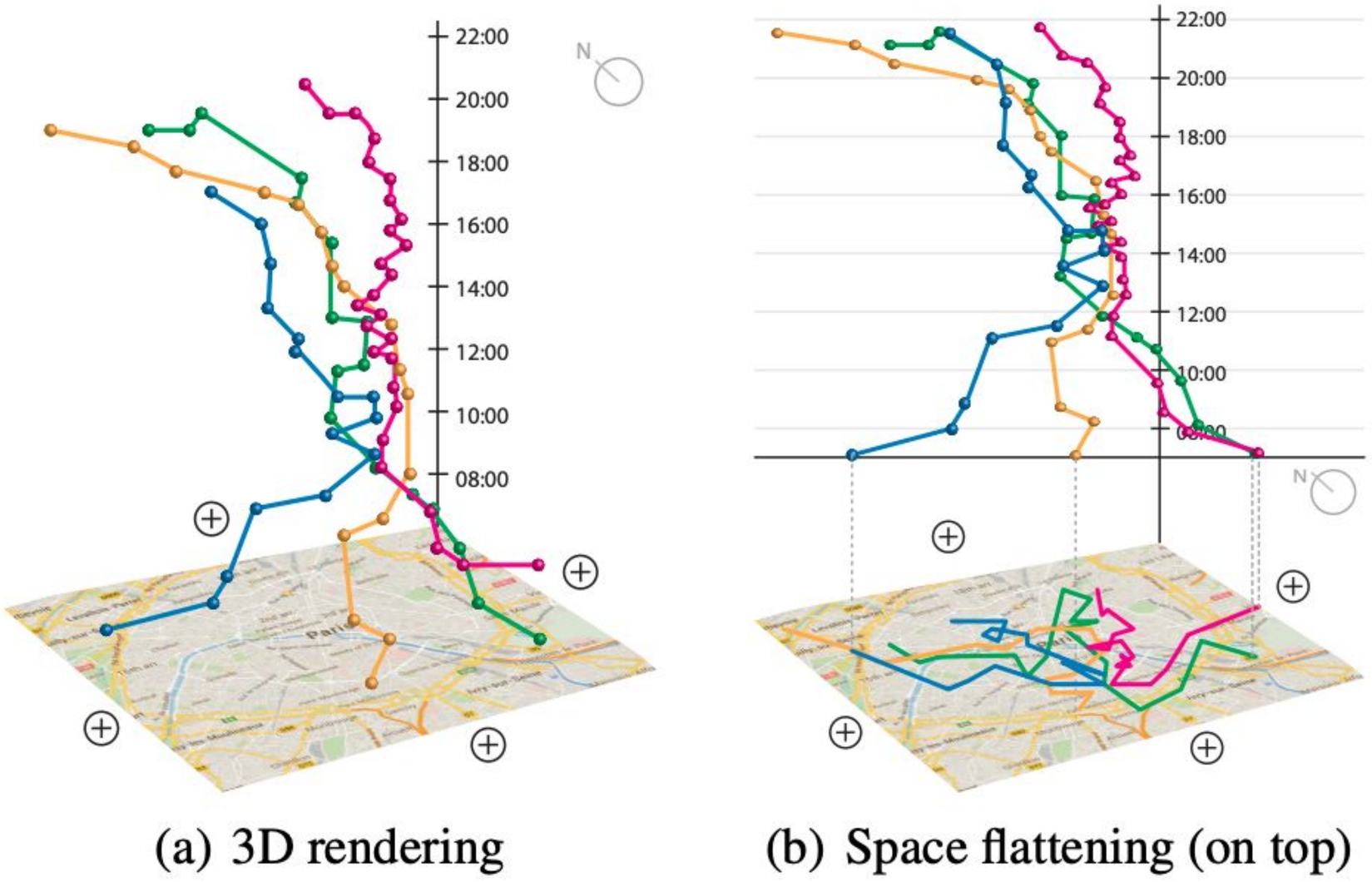
[H. Fairfield, NYTimes]

Connected Scatterplot



[H. Fairfield, NYTimes]

Space-Time Cubes

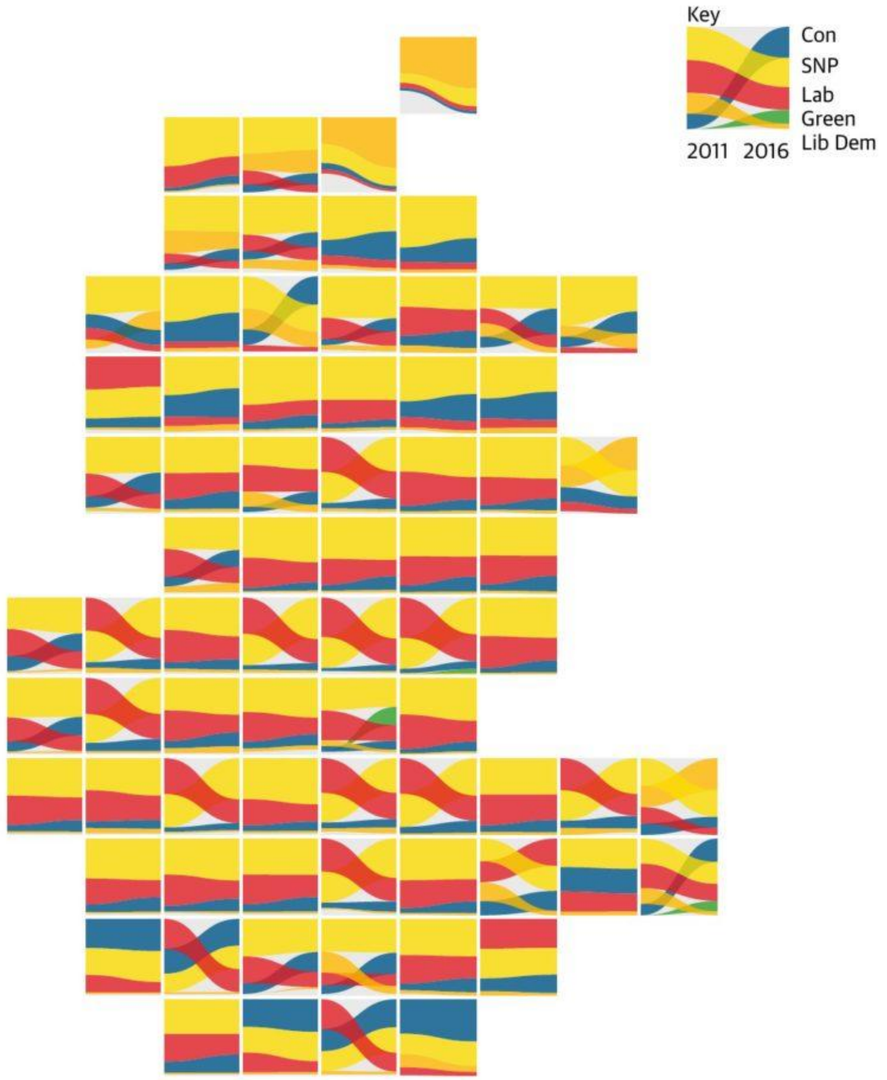


(a) 3D rendering

(b) Space flattening (on top)

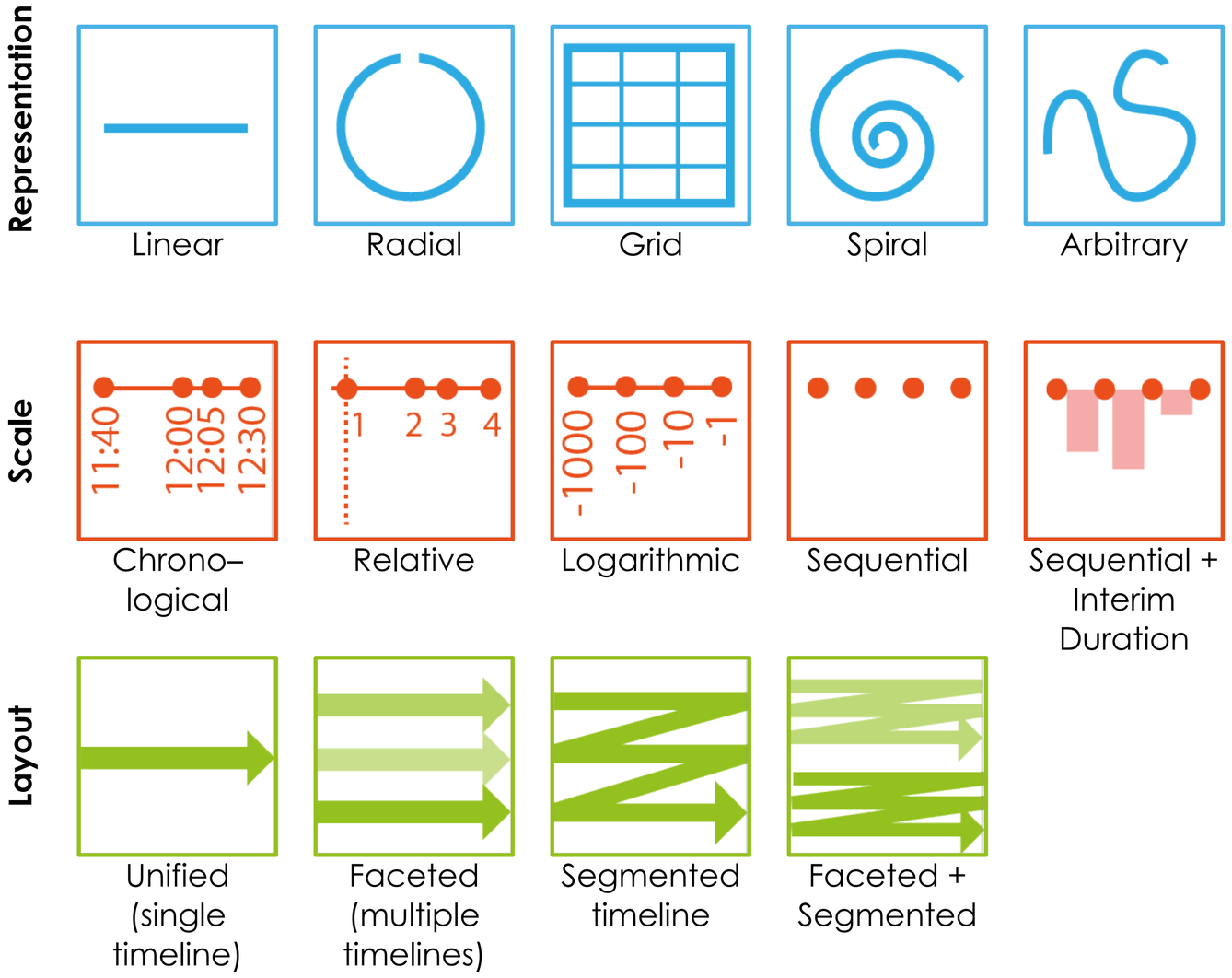
[via B. Bach]

Lots of Ways to Operate on Space-Time Cubes



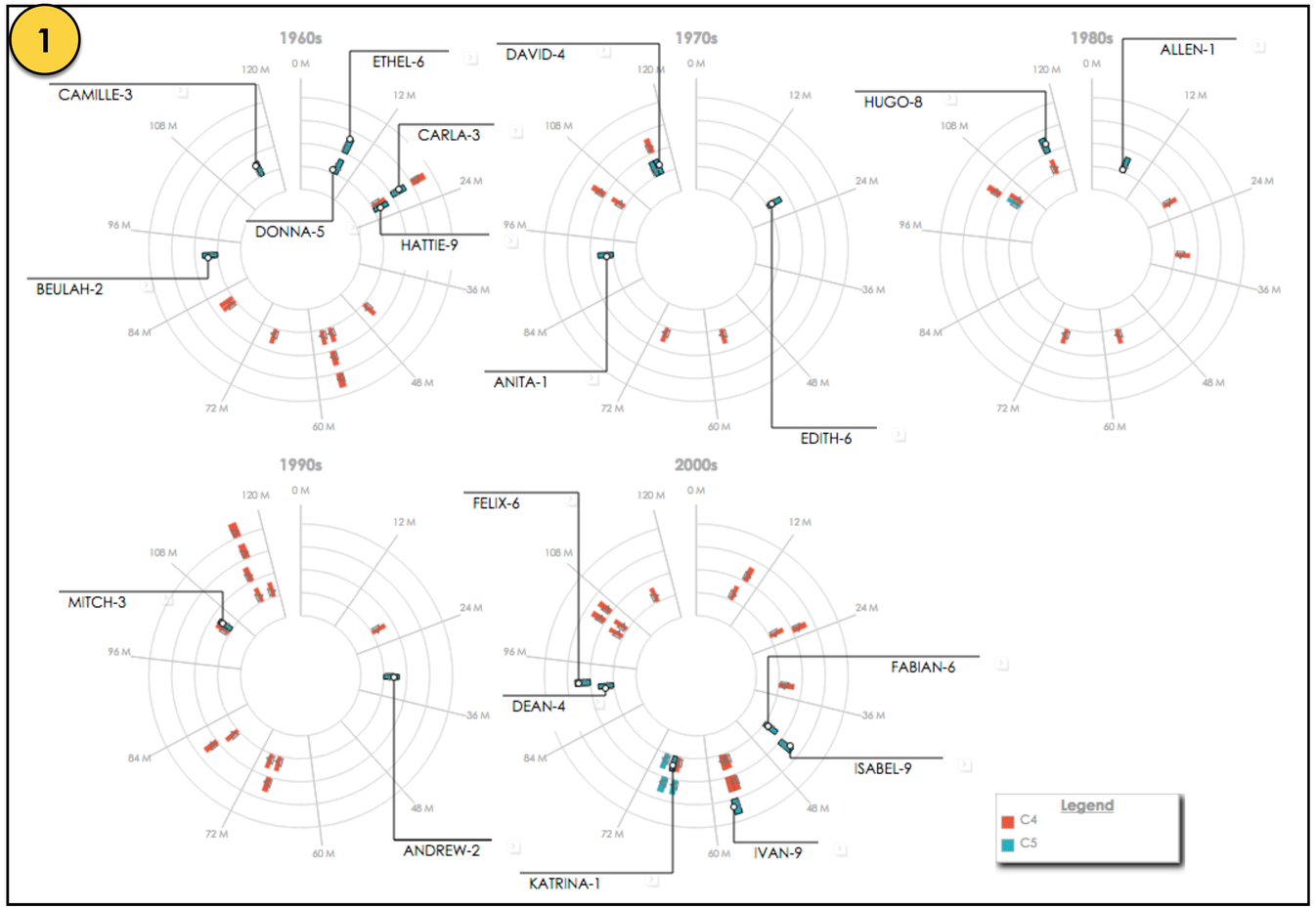
[via B. Bach]

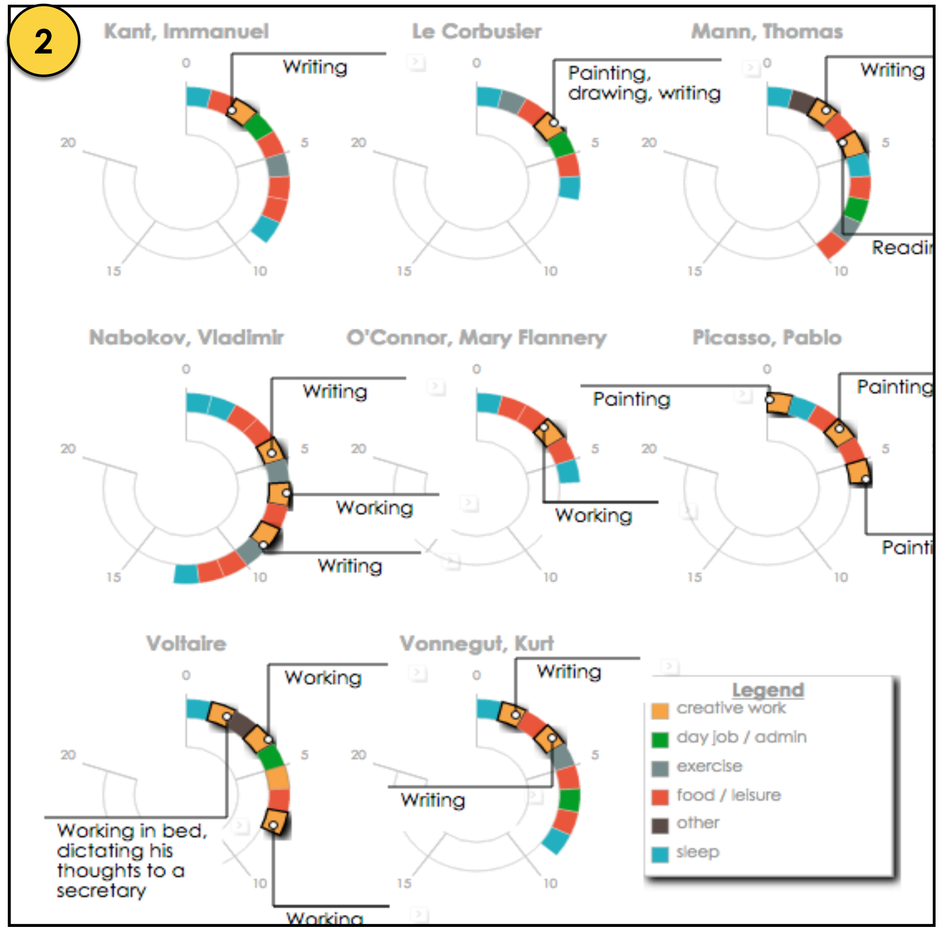
Timeline Design Space



[M. Brehmer et al.]

New Designs (Not Found in Survey)





[M. Brehmer et al.]

Annotated Bibliography

- Likely related to your project, but can be another subject area
- Wider breadth than just the related work of your project
- Find 30-40 references, and write a few sentences on how they relate to your work/ideas
  - Ok to include papers that show novel variations of a technique, even if the paper is not mostly about the subject area!
  - Your annotations are not the abstract of the paper, include relationship with the subject area you're focusing on
- Due **Today**

NIU Alumni Association Distinguished Alumnus Award

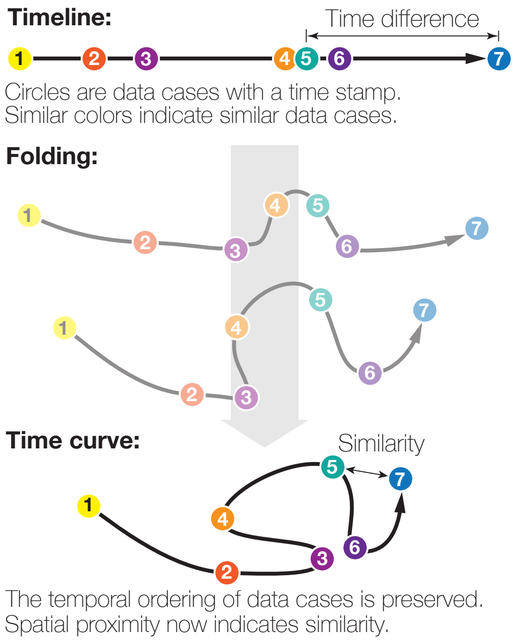
- Velchamy Sankarlingam (M.S., 1990)
- President of Product and Engineering, Zoom

- Lecture **Today** at 6:00pm
- Barsema Alumni and Visitor Center

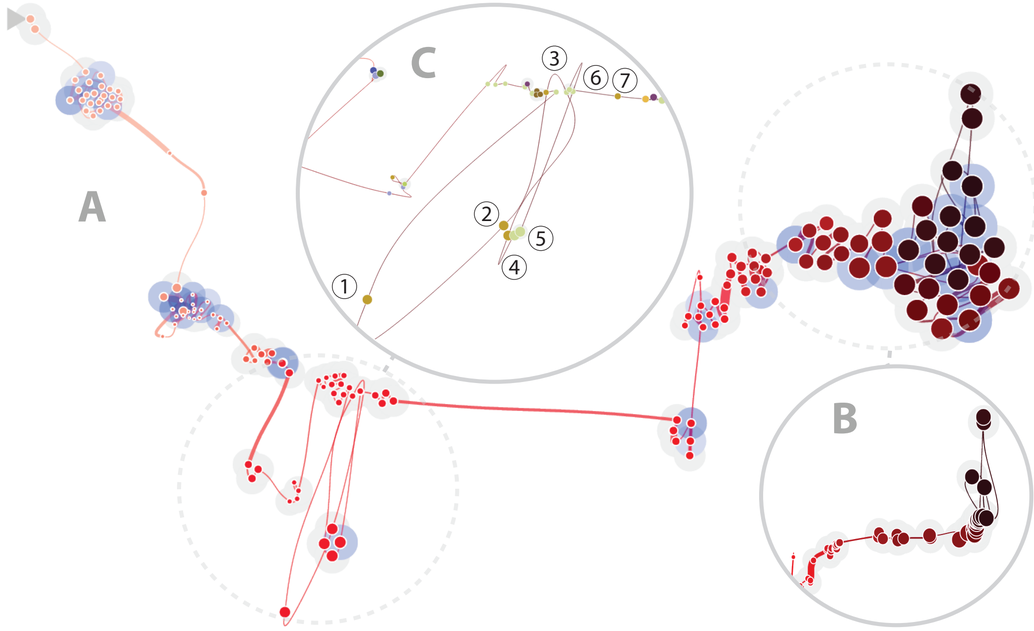
Today's Paper

Time Curves: Folding Time to Visualize Patterns of Temporal Evolution in Data

Benjamin Bach, Conglei Shi, Nicolas Heulot, Tara Madhyastha, Tom Grabowski, Pierre Dragicevic



(a) Folding time



(b) History of the Wikipedia article on Palestine

Presentation

Critique

Discussion