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‘Graphical Excellence’ of Visual Representations of Data

Research Seminar Friday, November 22, 2019

Dept. of Information Science / Leonie Bosveld-de Smet

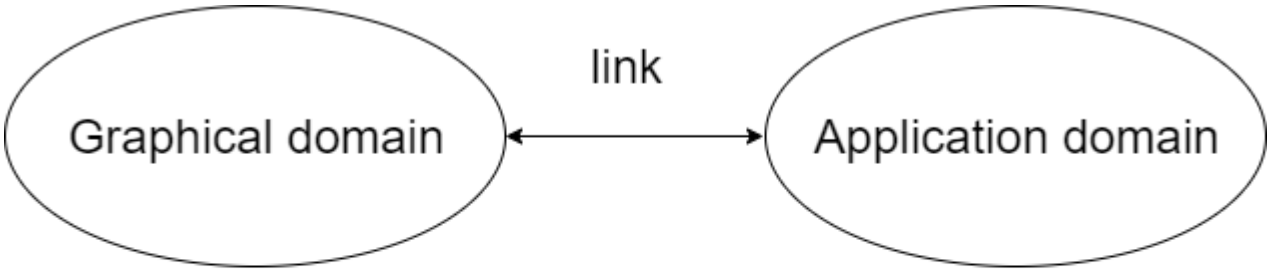
Tufte about 'graphical excellence'

- "Graphical excellence is that which gives to the viewer the greatest number of ideas in the shortest time with the least ink in the smallest space."

- Edward R. Tufte, *The Visual Display of Quantitative Information.*

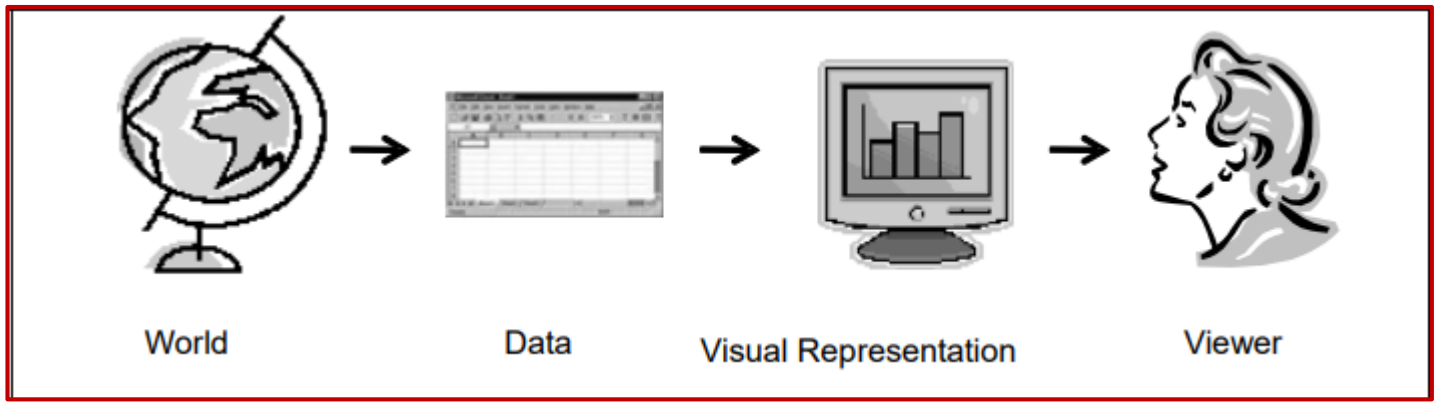
Visual Communication

- Communication about (some part of) the world involving external visual representations



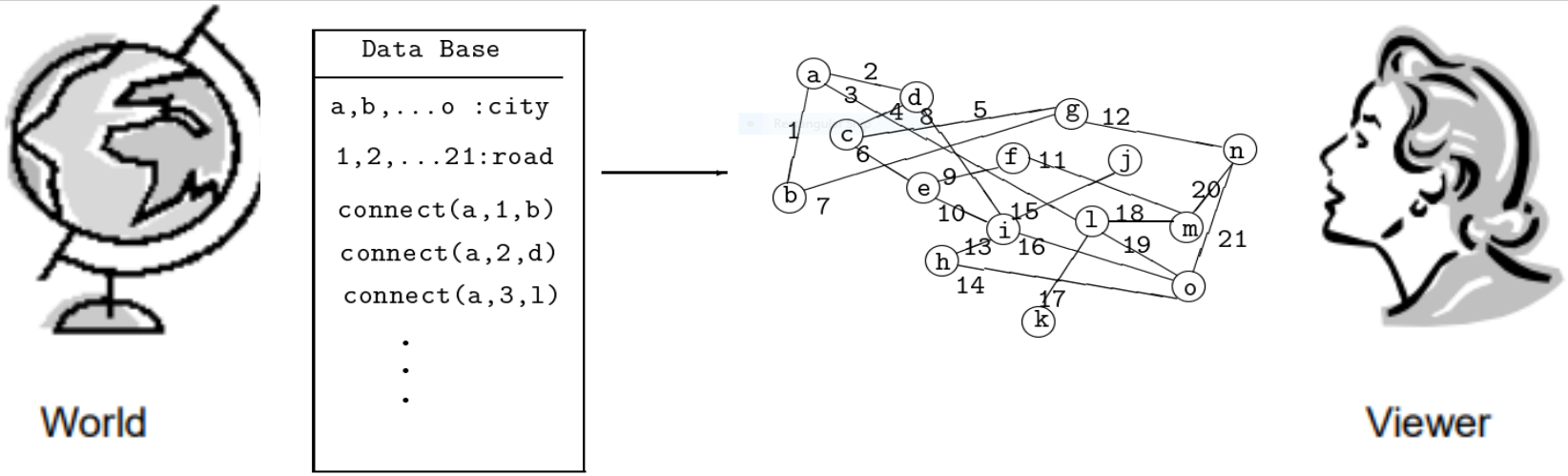
the three parts of visual communication

Computer-supported visualization of data



Source: Baker, Jones & Burkman (2019)

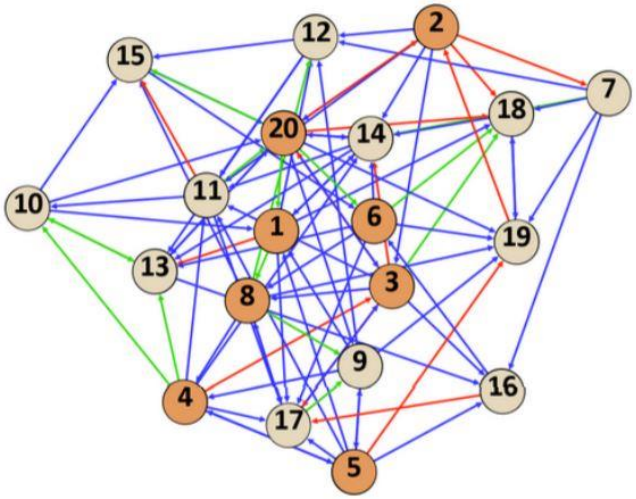
Cities connected by roads



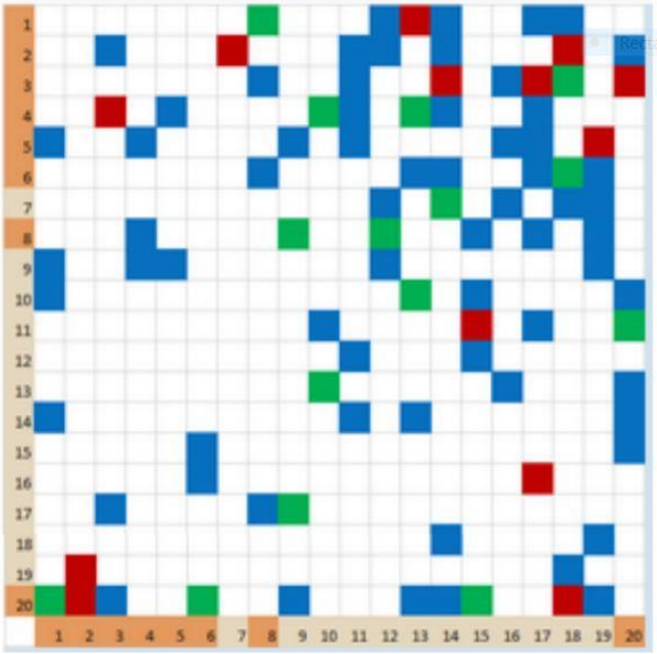
Data exploration tasks

- Which visual representations are well-suited for representing which data?
- Which visual representations are 'usable' (effective, efficient, preferred, …)?
  - some types of visual respresentations are well-received (map-based representations)
  - some yield mixed results
  - Still others work well in some tasks, but poorly in others

Knowledge sharing between employees



(a) node-link diagram



(b) matrix diagram

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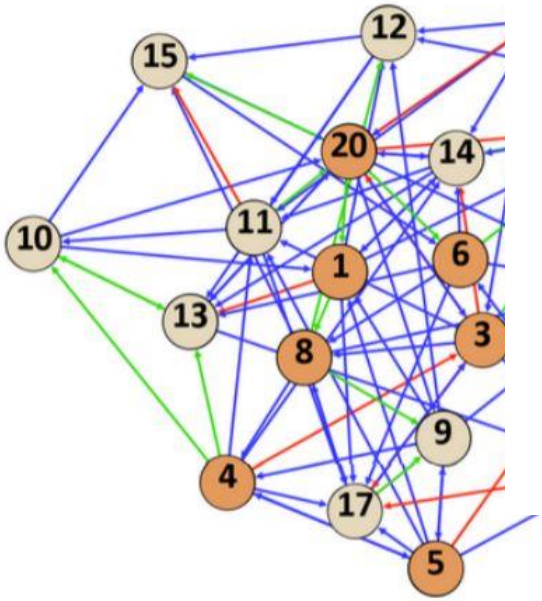
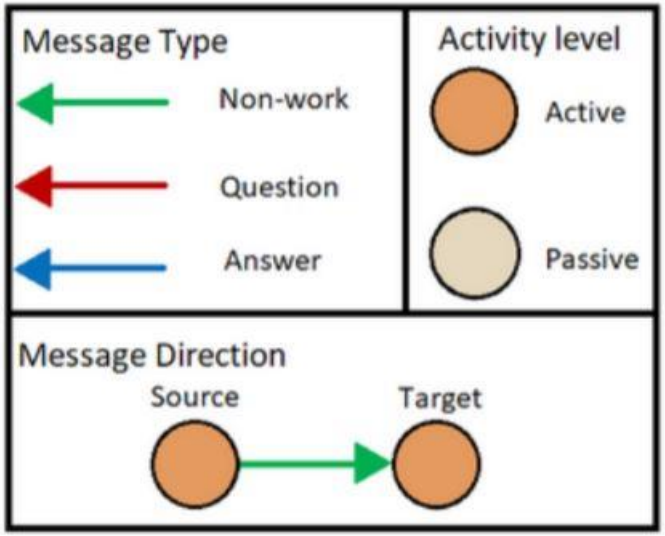
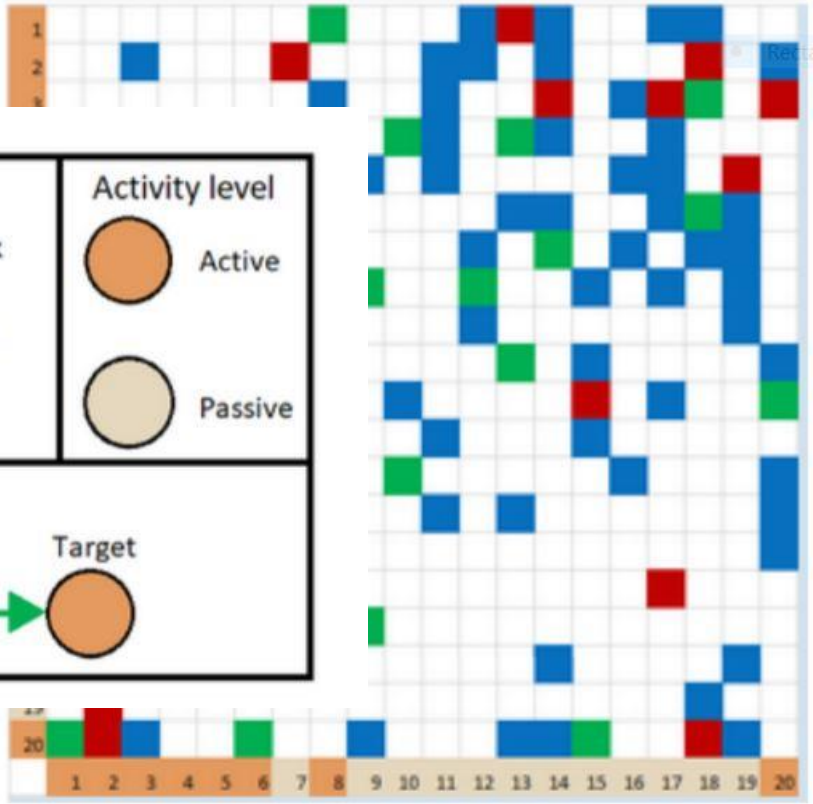


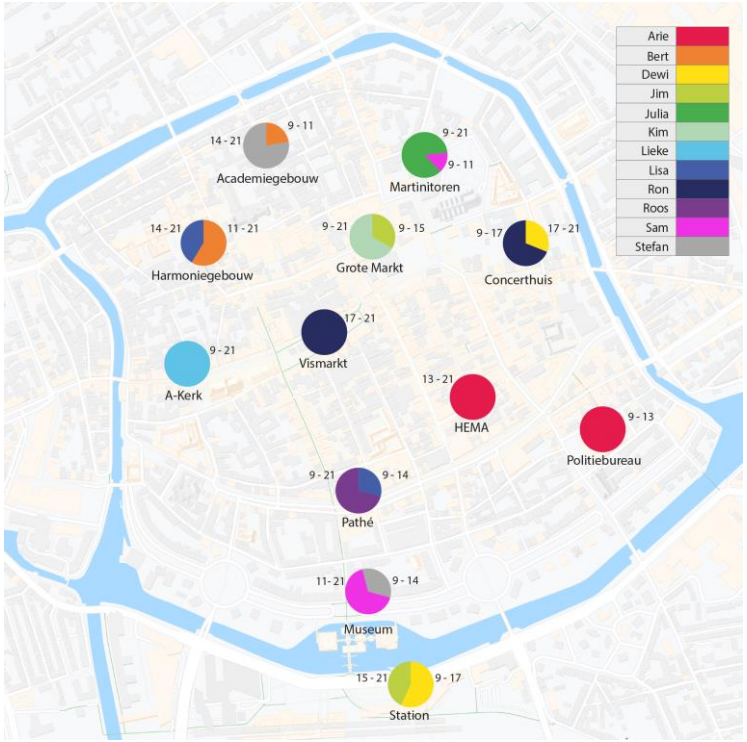




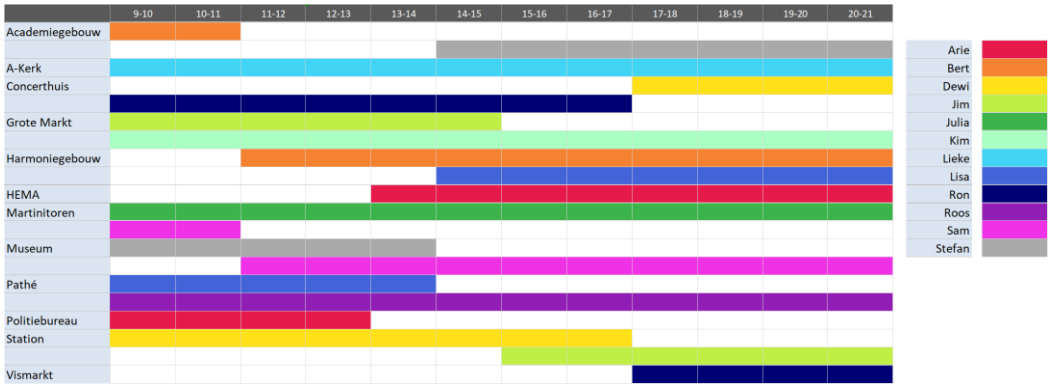
(a) node-link diagram

(b) matrix diagram

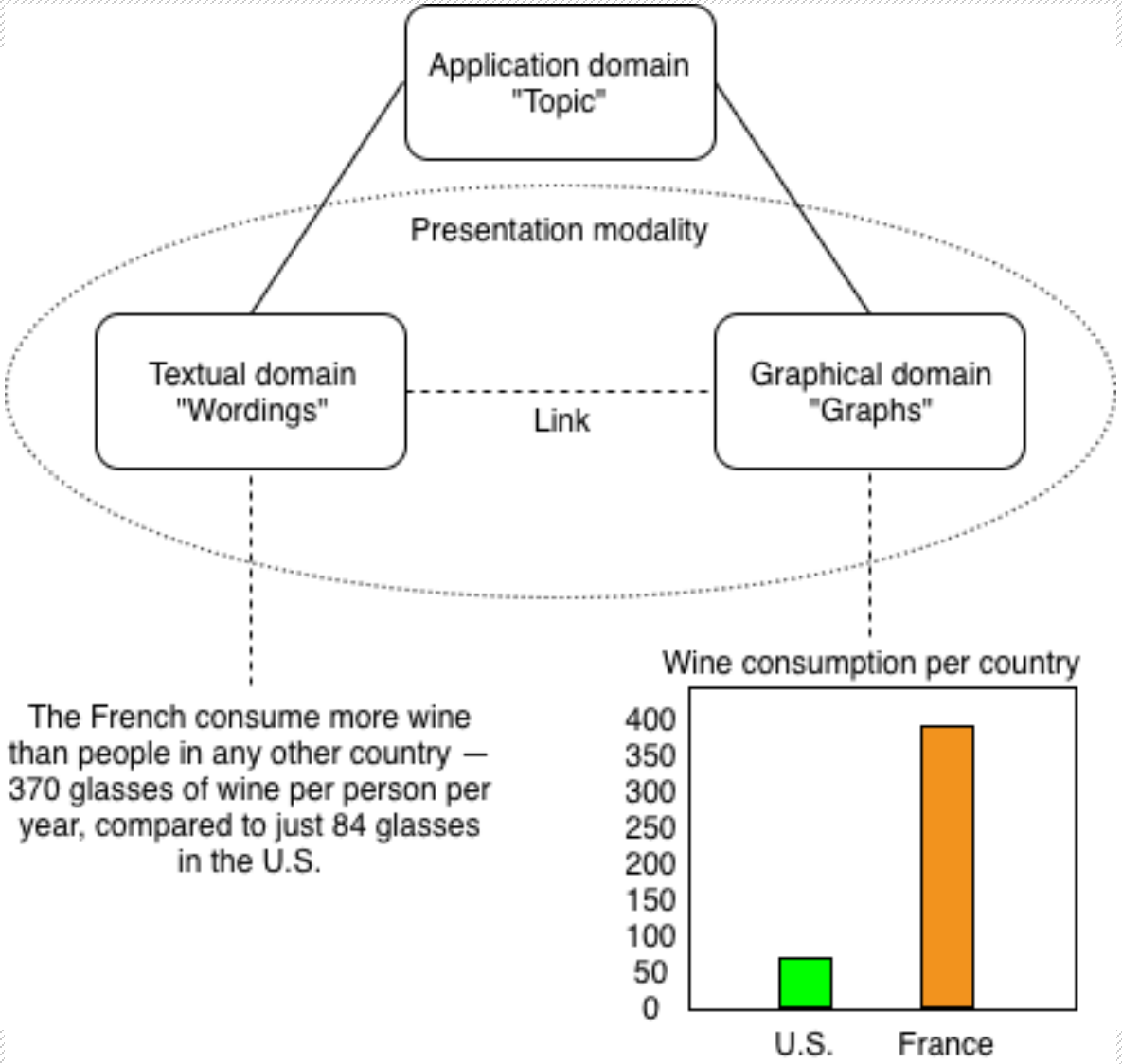
Querying spatio-temporal data: who, where, when?



Map-based representation



Gantt chart


Application domain
"Topic"
Presentation modality
Textual domain
"Wordings"
Link
Graphical domain
"Graphs"
The French consume more wine than people in any other country — 370 glasses of wine per person per year, compared to just 84 glasses in the U.S.
Wine consumption per country
400
350
300
250
200
150
100
50
0
U.S.
France