

10. Manipulate View

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Introduction

- A change could be made from **one choice to another** to change idioms, and any of the **parameters** for a particular idiom can be changed.
- Any **aspect** of visual encoding can be changed, including the **ordering**, any other choice pertaining to the **spatial arrangement**, and the use of other visual channels such as **color**.
- Changes could be made concerning what elements are filtered, **the level of detail of aggregation**, and how the data is partitioned into **multiple views**.
- Switching from **a node–link** layout to a **matrix** layout of a network.

Why Change?



- Datasets are often sufficiently large and complex that showing everything at once in a single static view would lead to overwhelming visual clutter.
- There are 5 major options for handling complexity.
- These 5 choices are not mutually exclusive and can be combined together.
- A view that changes over time is one of them

Change View over Time



The possibilities for how the view changes can be

- Change the encoding
- Change the arrangement
- Change the order
- Change the viewpoint
- Change which attributes are filtered
- Change the aggregation level, and so on
- Example:
 - LineUp (World University Rankings 2012)

Select Elements



- Allowing users to select one or more elements of interest in a vis is a fundamental action that supports nearly every interactive idiom.
- The output of a selection operation is often the input to a subsequent operation.
- In particular, the change choice is usually dependent on a previous select result.
 - Selection Design Choices
 - Highlighting
 - Selection Outcomes

Navigate: Changing Viewpoint

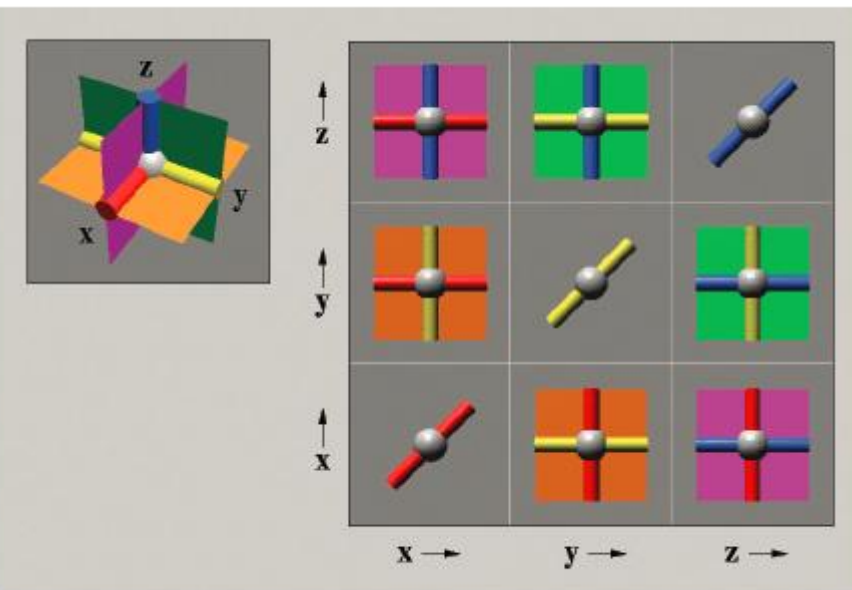


- Large and complex datasets often cannot be understood from only a single point of view.
- Many interactive vis systems support a metaphor of navigation, analogous to navigation through the physical world.
- In these, the spatial layout is fixed and navigation acts as a change of the viewpoint.
- **Zooming** (Geometric, Semantic)
- **Panning**
- **Rotating**

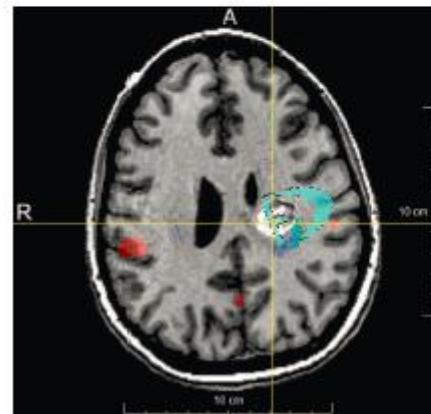
Navigate: Reducing Attributes



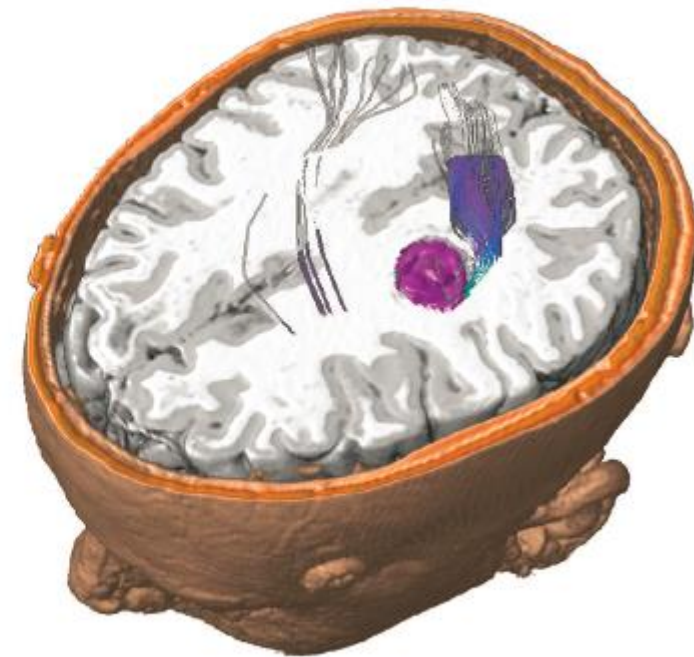
- The geometric intuitions that underlie the metaphor of navigation with a virtual camera also lead to a set of design choices for reducing the number of attributes:
- Slice
- Cut and Project.



(a)



(a)



(b)



Thank You