Graphic \textit{(Re)presentation}
This is not a pipe…

Leci n’est pas une pipe.
This is a representation of a pipe

Leci n’est pas une pipe.
Left or right?
Depends on perspective
Left or right?
Graphic Representation

- Graphics make up a language
- Syntax, Semantics and Pragmatics
- Common graphic vocabulary
- Graphic Semiotics
Communication

- Common conventions
  - "Red” + "Cloud”
  - "Colourless green ideas sleep furiously”
    - Meaningless or inspirational?
    - Depends on context and culture
Interpretation

- Interpretation is in the mind
- The Retina catches Light and Colour
- The Mind puts it (almost) all together
- Interpretation gives shape and meaning
Interpreted Size
Meaningfulness
Graphics

- Creates a mapping
- Application
  - Interface (views)

- Creates an experience
  - Pleasing
  - Entertaining
  - Satisfaction
Mapping - Recognition
Graphic sugar?

- Helpful representations
  - Or just Design?

- Explaining representations

- Visualisation of structures
Small grey dots
Graphic has meaning
Reorder

Treatments

Crops
Graphic Representation

- Ordering of data
- Structuring of data
- Arrangement of data
- Visualisation of data
Graphic Representation

- Ordering of data
- Structuring of data
- Arrangement of data
- Visualisation of data

Aesthetically Pleasing!
Grouping
Grouping
Grouping
The Closeness Principle

- Things that are near tend to be grouped together visually (and conceptually?)

- An item should never be closer to an item in another group, than an item in the own group
Colour Coding

- Colours are strong representational tools
  - Relations
  - Attractors

- But remember that some people are colour blind
Colour for relation

Price £K

10 - 12 12 - 14 16 - 18

Picts
Northumbria
Mercia
West Saxon
South Saxon
Isle of Wight
Kent
Britons

Years AD
<table>
<thead>
<tr>
<th>Hotels</th>
<th>Swimming pool</th>
<th>Golf course</th>
<th>Restaurant</th>
</tr>
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<tbody>
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<td>A</td>
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</tbody>
</table>
Venn Diagram

- Swimming pool
- Golf
- Restaurant
Info Crystal

Swimming pool

Golf

Restaurant

5 2 4

0 1 8
Info Crystal free
Info Crystal free (4 dims)
How many Zebras?
A circle?
Good Continuation
Good Continuation

- Essential for GUI:s

- Provides 2,5D-graphics
  - Things can be on top of each other

- Cues for perception
Visual Shape

Bob's performance

Tony's performance
Clock face perception
Clock face perception

30°
Altitude meter
Altitude meter
Altitude meter
Graphics can provide structure
Encoding helps
Colour Coding
Still!

Don’t rely on colours for meaning!
Mappings

- A mapping is a relation
  - Between meaning and Symbol
  - Between name and intention or interaction

STOP!

- Mappings should be 1 to 1
- Clashings in mappings are confusing
Mapping symbol to action
Mapping symbol to action
Impossible mapping