

Category: **Research**

Project: **The DNA of information graphics**

What was the challenge?

Development of an analytical framework for visualization design options constructed from fundamental building blocks (DNA) of visual encoding and composition.

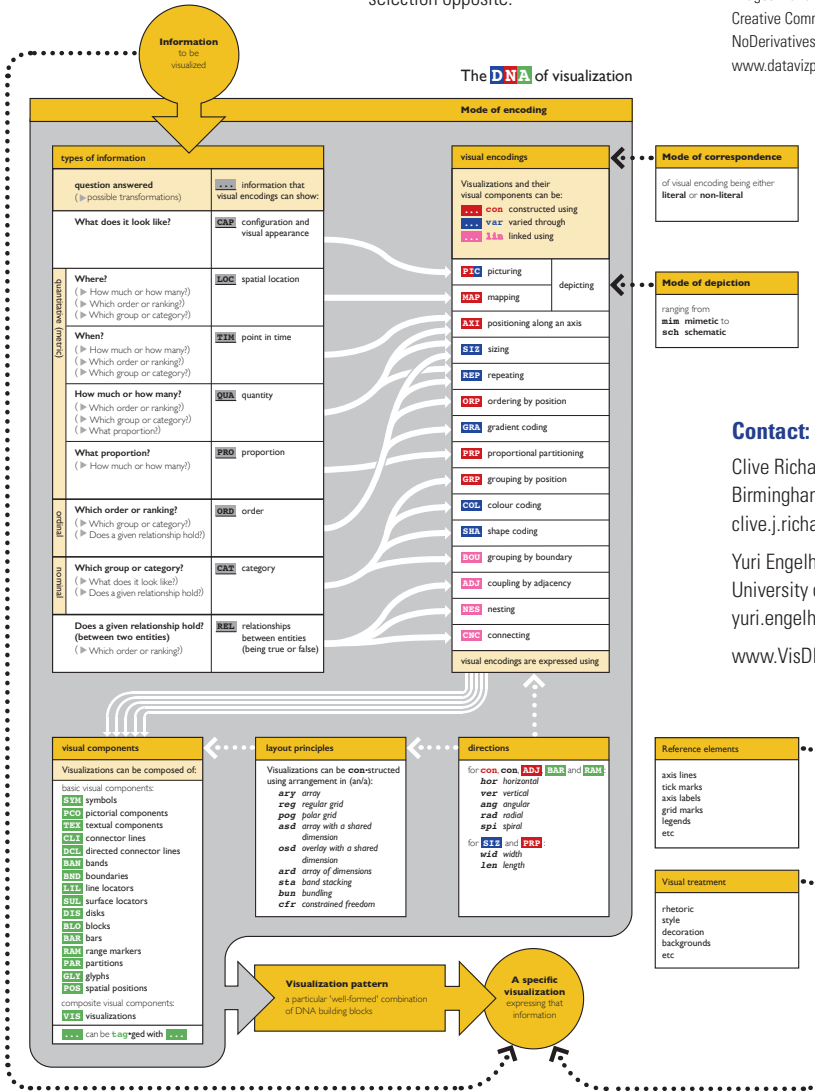
What was the solution?

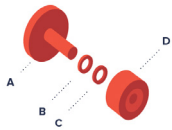
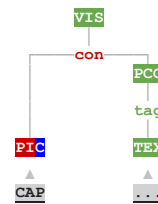

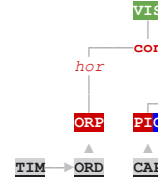

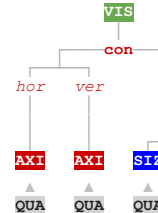

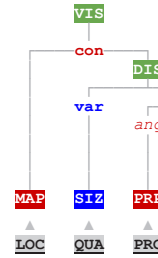
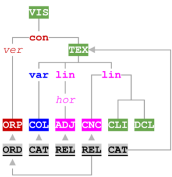
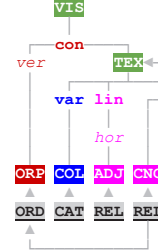
1) A diagram visualizing the framework for an academic paper. See below.
 2) Numerous visualizations analysed into a DNA sequence, a description in one sentence, and a DNA tree diagram. See www.VisDNA.com and a small selection opposite.

What was the effect?

Provides information designers and researchers with a more comprehensive tool than previously available for the (de)construction of a wide range of visualization types.

Images 1 and 4 opposite: DataVizProject by Ferdio, Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License: www.datavizproject.com



Pattern & specimen	Information*	DNA Specification by natural language	DNA tree diagram
1 Technical illustration 	CAP → PIC ... → TEX	VIS A technical illustration is constructed using con picturing of pic pictorial components that are tagged with tex textual components.	
2 Comic strip 	TIM → ORD CAP → PIC PCO	VIS A comic strip is constructed using con ordering by hor horizontal position of vis visualizations that are constructed using con picturing of pic pictorial components.	
3 Hans Rosling bubble chart 	QUA → AXI QUA → AXI QUA → SYM VAR → SIZ CAT → COL	VIS A Hans Rosling bubble chart is constructed using con positioning along a hor horizontal axis and ver vertical axis of vis symbols that vary through var sizing and col colour coding.	
4 Pie chart map 	LOC → MAP QUA → SIZ PRO → PRP QUA → SIZ CAT → COL	VIS A pie chart map is constructed using con mapping of dis disks that vary through var sizing and that are constructed using con proportional angular partitioning into partitions that vary through var sizing and col colour coding.	
5 Encoding tree diagram that describes itself 	ORD → ORP CAT → TEX CAT → COL REL → ADJ REL → CNC REL → CLI REL → DCL	VIS This encoding tree diagram that describes itself is constructed using con ordering by ver vertical position of vis textual components that vary through var colour coding and that are linked using lin coupling by hor horizontal adjacency and con connecting by rel relationships by rel connector lines and directed connector lines.	

* **TIM** Point in time **LOC** Location **QUA** Quantity **PRO** Proportion **ORD** Order **CAT** Category **CAP** Configuration and appearance **REL** Relationships
 ... Placeholder for any type of information
 Transformations between these types of information are shown as grey arrows.