Category: **Research**

Project: **The DNA of information graphics**

What was the challenge?

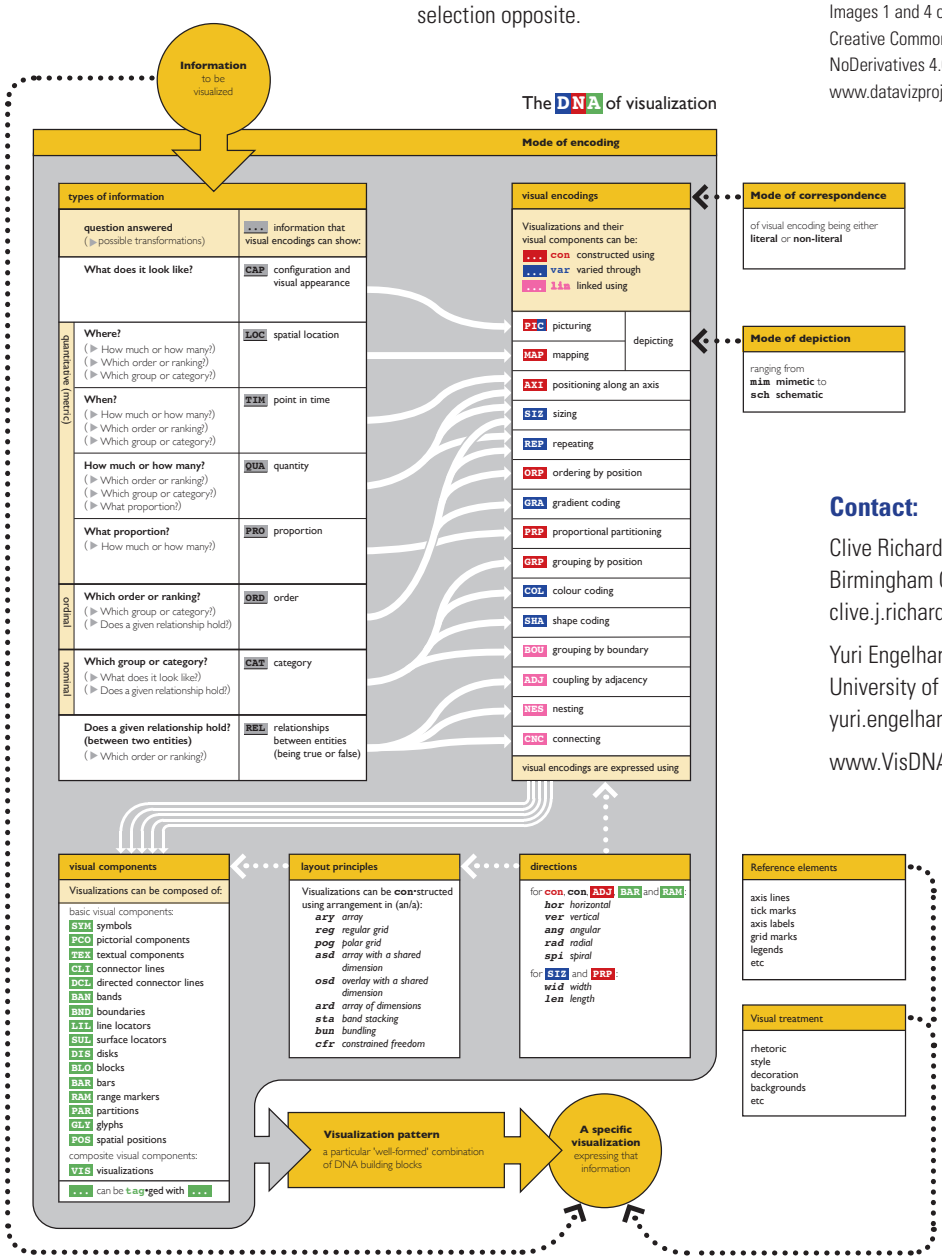
Development of an analytical framework for visualization design options constructed from fundamental building blocks (DNA) of visual encoding and composition.

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.



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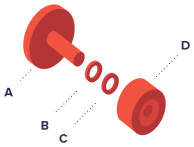
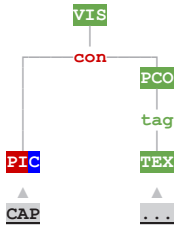
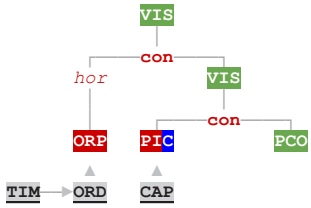
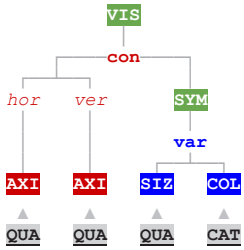
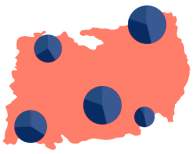
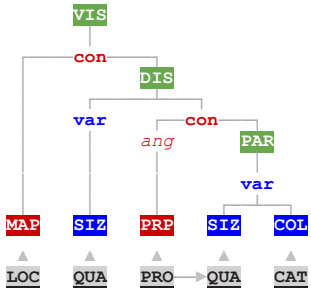
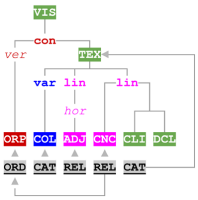
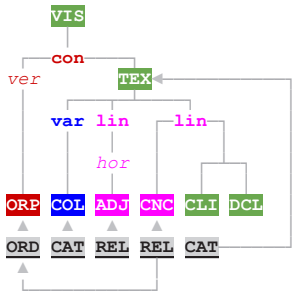
www.VisDNA.com

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