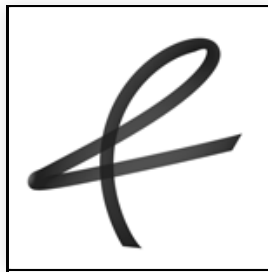


Information Visualization: Design and Techniques

Chris Culy

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AUVIS Workshop St. Augustin
23 January 2015

My interests in language and visualization

Mali



Bambara:

malonyinina o malonyinina

Fulfulde:

mi yi'ii dum e gidum

Donno So Dogon:

Oumar Anta inyemeñ waa be gi

Source: [OpenStreetMap](#)

My interests in language and visualization

Takelma texts

Mi' aga sgísi ā'klà da'ána-u wa-iwí'í dálhiwilík^w. Ganēhi^s
bo^u nēxada^s "Wa-iwí'í di eít'?' Wa-iwí'í mī^wwa," nagá-ihìs;
sgísi^a mi' gelwainia gelgulùk^w. Ganēhi^s anī^s t'ayàk' gwī^wnéi
hawúxda^a. "K'ádi gí^sà? K'a-ilā'p'a mī^wwa nagásbiⁿ,"
nagáhi^s. Sgísi lap'ām xamgwidík^w. "Ma dí k'ai^wlā'p'a yuda^s?
lap'a^m nánsbina^s," nagáhi^s lap'ām. Gé de^wwinít'hì. Gweldi;
ba^sbi^t' lé^wp'lap'.

Now those just scattered off, Grizzly Bear did chase the people around. Now this Coyote, for his part, did run off with the chieftainess girl. Then, 'tis said, after a little while, "Are you a female? It must be a female," he thought; Coyote now, for his part, did wish to sleep with her. Tunc nihil vulvae repperit. "What did I, for my part, (take)? That you were a woman I thought," he said to her. Coyote threw Frog into the water. "Do you think you will be a woman? Frog you will always be called," he said to Frog. Proceeding just up to there (it goes). 'Tis finished. Go gather and eat your ba | ap'-seeds.

Reference: Takelma Texts

My interests in language and visualization

Recipes, letters

Bake Ø until done

EBB: Overjoyed I am

My interests in language and visualization Silicon Valley

- FSTs for Information Extraction (Inxight)
- Dialog Systems (SRI)
- Speech to Speech Translation (SRI)
- Summarization (Fuji-Xerox)

Three distinct goals of visualizations

- Exploration
- Comprehension (analysis)
- Communication (presentation)

A visualization may be suitable for some goals but not others

Reference: B.H. McCormick, T.A. DeFanti, M.D. Brown. 1987. Visualization in Scientific Computing, Computer Graphics 21:6. ACM SIGGRAPH.

Visualizations put ideas into our heads.

Models and the Design Process: Data models

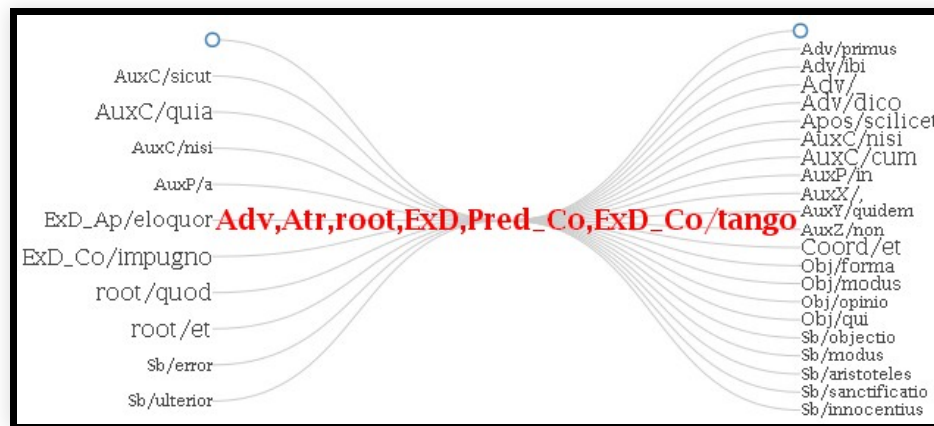
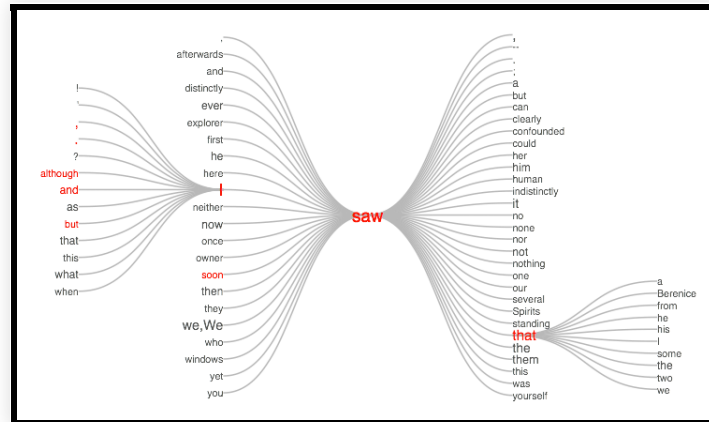
KWICis

Showing results 1 to 20 of 65 results

Summary	-5	-4	-3	-2	-1	HIT	+1	+2	+3	+4	+5
1. claim. Its rightful owner saw, but, of course	claim	.	Its	rightful	owner	saw	,	but	,	of	course
2. of the Prefect. I saw, in fine, that	of	the	Prefect	.	I	saw	,	in	fine	,	that
3. very deliberate scrutiny, I saw nothing to excite particular suspicion	very	deliberate	scrutiny	,	I	saw	nothing	to	excite	particular	suspicion
4. but during several hours we saw none whatever. At length	but	during	several	hours	we	saw	none	whatever	.	At	length
5. the thing drew near we saw it very distinctly. Its	the	thing	drew	near	we	saw	it	very	distinctly	.	Its
6. smoke cleared away, we saw one of the odd man-animals	smoke	cleared	away	,	we	saw	one	of	the	odd	man-animals
7. reversed -- for we here saw a great lake, at	reversed	--	for	we	here	saw	a	great	lake	,	at

Reference: [KWICis](#)

Models and the Design Process: Data models DoubleTreeJS



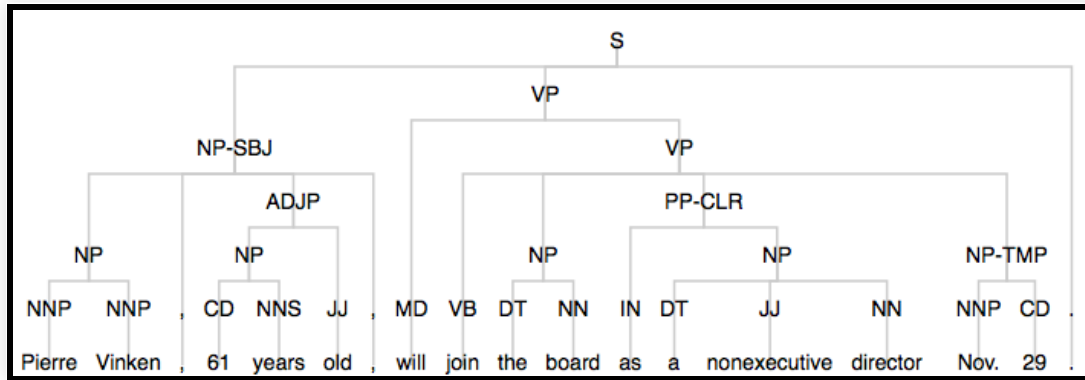
[demo]

The right level of abstraction is important.

Reference: [DoubleTreeJS](#), C. Culy, M. Passarotti, U. König-Cardanobile. 2014.

Models and the Design Process: Task models

When design meets users



[demo]

Pick the right visualization for the task.

User preferences matter.

References: ProD

Models and the Design Process:

User models

- What do the users know?
- How do they work?
What are their *mental models*?
- Are there different types of users with different needs?

Talk with the users!

Visualizations and software design

Reusability

- Make the visualizations generalizable
cf. the right level of abstraction
- Make the visualizations as components
 - Trendy term: composability

More information

- My visualization software
<http://linguistics.chrisculy.net/software/>
- Visual Analytics for Linguists course at ESSLLI 2014
(with Miriam Butt)
<http://linguistics.chrisculy.net/sfs/courses/ESSLLI2014/>
- Visualization for corpora workshop for BAAL, Coventry, GB
http://linguistics.chrisculy.net/resources/2014_BAAL_Workshop/

Visualizations put ideas into our heads!

Thank you

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