MCROVSUALZATION

Data-driven Typography and Graphical Text Enhancement

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ABSTRACT

At the intersection of information **VISUALIZATION** and **TYPOGRAPHY** lies the design space of »Micro Visualization«, a family of basic techniques enriching text in regard of its accessibility, comprehensibility, and memorability. We propose a **TAXONOMY** that differentiates specific types of visualizations applied to text design and layout. We elaborate two main approaches to aligning the

TERM

The term »Micro Visualization« is not being used by the visu-**SPATIALLY SMALL** and/or – as it often correlates – alization community at the moment. In our approach we use with a few number of **DATA DIMENSIONS** or even it to describe any kind of visualization that is for example DATA POINTS.

	a = { b : [], c : [] }	b = [1, 2, 3]
spatially small	few data dimensions	few data points

GRAPHICAL TEXT ENHANCEMENT

One example of such Micro Visualization are Edward Tufte's **SPARKLINES**. In their typical form these »datawords« are simplified line charts, which are integrated directly into the text.

Entity in context



Visualization in context

Advantage and justification for the simplification is the double **CONTEXTUALISATION**. Firstly, the entity is enriched by the additional context, secondly, the visualization can be placed into context at the relevant point within the text. The reading flow stays undisrupted and the traditional switching between graphic and text is not necessary.

The New York Times article »The Russia Left Behind« takes the reader on journey along several cities in Russia. Next to the actual article a minimalistic map is placed on which the current city and the reading (respectively scrolling) position is visually highlighted. And again, the reduction of details on the map is justified by its usage and additional values for the article:

visual appearance of a text and its content. The first ex-

plores the **ADDITION** of graphical elements embedded

into or adjacent to a text, while the other approach explores

the visual **MODIFICATION** of a text by means of ty-

pographic visualization. For this we evaluate how different

techniques can be used as **VISUAL VARIABLES**.

The simplification allows an instant understanding and thus provides orientation and navigation. An **ADDITIONAL DATA** layer is added, which could hardly be described with words.

t. Petersburg

Novgorod

Pochinok

A Modern Train, a Rotting City

A few times every day, the high-speed train between St. Petersburg and Moscow barrels through the threadbare town of Lyuban. When word gets out that the head of Russia's state railway company — a close friend of President Vladimir V. Putin — is aboard, the station's employees line up on the platform standing at attention, saluting Russia's modernization for the seconds it takes the train to fly through. Whoosh.

But Vladimir G. Naperkovsky is not one of them. He watched with a cold, blue-eyed stare as the train passed the town where he was born, with its pitted roads and crumbling buildings. At 52, having shut down his small computer repair business, Mr. Naperkovsky is leaving for another region in Russia, hoping it is not too late to start a new life in a more prosperous place. The reasons are many, but his view boils down to this: "Gradually," he said, explaining his view of Lyuban, "everything is rotting."

DATA-DRIVEN TYPOGRAPHY

Besides the previously described graphical additions to used Bertin's visual variables and evaluated the **TYPO**the text, the typographical modification of the amorphous **GRAPHICAL TECHNIQUES** for each channel. text is another approach. In order to categorise the field we



EXAMPLES:					
GOOD BYE	ULTRA LIGHT	UNIVERS	CELLAR DOOR	SERIF	UNTERSTRICHEN
GOOD BYE	LIGHT	UNIVERS	CELLAR DOOR	SANS-SERIF	Durchgestrichen
GOOD BYE	REGULAR	UNIVERS	CELLAR DOOR	Script Vlackletter	<i>Kursiv</i> Kapitälchen
GOOD BYE	MEDIUM	UNIVERS			
GOOD BYE	BOLD				
GOOD BYE	HEAVY				
GOOD BYE	BLACK				
GOOD BYE					

TAXONOMY

One contribution of this work is the creation of a taxonomy, which allows to **SYSTEMATICALLY IDENTIFY EXISTING WORKS**, empty spots of possibilities, and new approaches for application. The field can be divided into four fields, which distinguish between the previously

described addition and modification as well as between the integrated and adjacent positioning/scope. Further criteria for a classification are the **POINT OF RELEVANCE** (before, while, or after reading) and often consequently its **PURPOSE** (orientation, memorability, summary, ...).

Type of change

ng/scope	INTEGRATED ADDITION	INTEGRATED MODIFICATION
Positioni	ADJACENT ADDITION	ADJACENT MODIFICATION

POSSIBILITIES OF APPLICATION

data points right within the text or even to use these links to The differentiation within the taxonomy allows the designer to **COMBINE SINGLE FIELDS** and thus to inteprovide thumbnails of the adjacent graphic. grate two separate data sets, to place links to corresponding





BEFORE	WHILE	AFTER	VISUALIZATION
Orientation	Memorability	Summary	AS IMAGES
Navigation	Deepening	Aide memoire	

Sense of content

.....g Extension

DISCOVER MORE MICROVIS

The website we created lists a rising number of visualalog can be filtered using the taxonomy. Please use the izations that fit our term of Micro Visualization. The catprovided form if you have examples you want to share!

Complete master thesis

TEXT WITH

TYPOGRAPHY

MICROVIS.INFO/THESIS