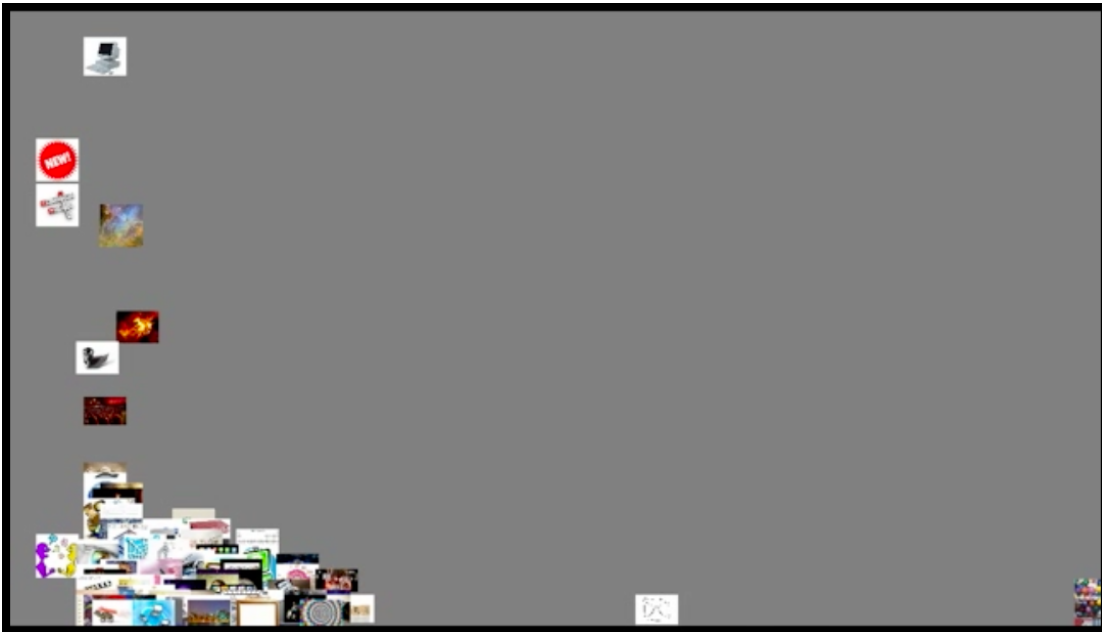# **The Visual Language of New Media**
the Book as Database

Wild Card Symposium

31.10.2012

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Content

1. The <mark style="background:yellow">Language</mark> of <mark style="background:blue;color:white">New</mark> <mark style="background:red">Media</mark>: the book

Lev Manovich is a Professor at CUNY Graduate Center. He also directs Software Studies Initiative at California Institute for Telecommunications and Information Technology. Since 1984 he has been working with computer media as an artist, computer animator, designer, and programmer.

In 2001 he wrote the highly influential book 'The Language of New Media', which has been called "the most suggestive and broad ranging media history since Marshall McLuhan." It is translated in 8 different languages and is used in over 100 programs all around the world.

The book offers the first systematic and existential theory of new media. Manovich discusses the relation between traditional media and new digital media along with new developed theoretical frameworks by using concepts from art history, photography, design, film theory, literary theory and computer science. The main thought behind the book was to examine the effects of the digital revolution on visual culture.

Manovich goes on to discuss different forms particular to new media, such as the database and interface. The database can actually be seen as one of the key-concepts as defined in 'The Language of New Media'. These forms, as described in the book, are especially relevant to our project and in the next chapters of this document we will further elaborate on those concepts.

2. The Database Logic

"After the novel, and subsequently cinema, privileged narrative as the key form of cultural expression of the modern age, the computer age introduces its correlate – the database" *(2001 218).*

The database can be seen as a structured collection of data, however, Manovich discusses the database as a cultural form of its own: "it is a new way to structure our experience of ourselves and the world" (2001 219). Manovich argues that multimedia which has 'cultural' content seems to favor the database form. To illustrate this observation, Manovich uses the example of how a museum works like a database by presenting images which can be accessed in various ways (chronologically, by country, or by artist). According to Manovich, the database becomes the center of the creative process in the computer age (2001 227).

He further explains how data, once it is digitized, has to be cleaned up, organized and indexed, which leads to a new cultural algorithm: reality -> media -> data -> database (2001 224). This algorithm can also be found in our project. The reality (1), as described by Manovich, is captured in a medium, the book *The Language of New Media* (2), which we used to extract data such as words, sentences and page numbers (3) in order to create our own database of the book.

Manovich emphasizes how "creating a work in new media can be understood as the construction of an interface to a database" (2001 226). For our project we have created three interfaces that translate *The Language of New Media,* which can be viewed as the underlying database, in order to establish a very different user experience.

3. The Book as Database and Cultural Analytics: Three Interfaces

Manovich writes that with new media the content of the work and the interface are separated. Therefore it is possible to create different interfaces to the same material (2001 227). This is basically what we did in our project. We presented different versions of the same work, e.g. the book 'The Language of New Media' by Lev Manovich. We looked at content of the original book as a database. The physical book can be seen as one interface, and the digital book as another. We created three more versions of presenting the book and tried to create a hypernarrative. 'An interactive narrative can be understood as the sum of multiple trajectories through database' (2001 227). There are more narratives possible than a linear narrative, and we tried to show that in our project.

Along the project certain questions arose: how can the latest tools in data analysis and visualization be used in relation to cultural data? How can we take advantage of unprecedented amounts of cultural data available on the web to begin analyzing culture in new ways? How does computational analysis of these massive datasets can help us to develop new cultural theory for the 21st century global networked digital culture?

In 2007, Manovich proposed the method of *cultural analytics.* Cultural analytics can be defined as the use of computational methods for the analysis of massive cultural data sets and flows. Rather than simply borrowing existing techniques and software from the sciences and the industry, researchers also examine their underlying assumptions and conceptual foundations.

We were inspired by The Software Studies Initiative, located at the California Institute for Telecommunication and Information Technology. Since 2007 the initiative - that is founded by Lev Manovich - publishes books about software studies and releases tools that can be used for cultural analytics.

In order to use *The Language of New Media* as a database, and analyze it in different ways, we used some of the methods of cultural analytics. We came up with three ways of visualizing the book, that resulted in three interfaces: *The Visual Language of New Media, part I, II and III.*

The three interfaces allow for a new exploration and navigation through Lev Manovich' book *The Language of New Media*.
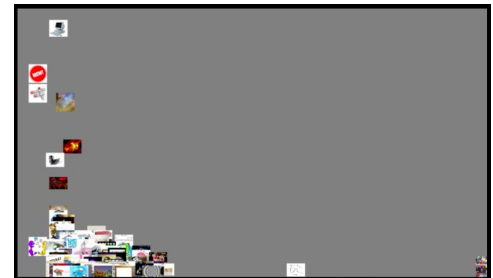
4. The Visual **Language** of **New** **Media** part I: imageplot

What is the *vocabulary* that Manovich uses in the book to explain "the language of new media"? By defining his vocabulary, we might unravel some of the 'language' of new media. What words are involved in discussing new media?

We used a word frequency counter to find out which (relevant) words he uses most. Computer turned out to be number one (1173 times), followed by new (973 times), media (878 times) and image (840 times). We also wanted to know at what point he introduced the terms in his book, so we searched for the numbers of the pages where they first appeared. We developed a dataset (see picture on the right) and created a database of images of the words, connected to the data. We used Yahoo and Bing image search engines (Google images has personalized results), and picked the first image that appeared for a query.

word_id	filename	wordcount	wordcount_10	pagenumber
1	1_computer.jpg	1173	117	7
2	2_new.jpg	973	97	1
3	3_media.jpg	878	88	1
4	4_image.jpg	840	84	9
5	5_space.jpg	634	63	11
6	6_film.jpg	569	57	7
7	7_cinema.jpg	460	46	7
8	8_time.jpg	325	33	7
9	9_user.jpg	308	31	7
10	10_world.jpg	303	30	7
11	11_digital.jpg	291	29	9
12	12_screen.jpg	284	28	9
13	13_virtual.jpg	281	28	8
14	14_game.jpg	264	26	8
15	15_data.jpg	261	26	7
16	16_cultural.jpg	261	26	7
17	17_form.jpg	249	25	9
18	18_narrative.jpg	236	24	18
19	19_interface.jpg	343	22	20
20	20_human.jpg	221	22	14
21	21_technology.jpg	217	22	9
22	22_objects.jpg	212	21	10
23	23_database.jpg	207	21	15
24	24_reality.jpg	203	20	10
25	25_culture.jpg	203	20	19
26	26_modern.jpg	198	20	13
27	27_object.jpg	196	20	10
28	28_elements.jpg	196	20	26
29	29_web.jpg	189	19	12
30	30_language.jpg	186	19	1
31	32_camera.jpg	182	18	6
32	31_art.jpg	182	18	15
33	33_information.jpg	172	17	26
34	34_software.jpg	171	17	21
35	35_visual.jpg	166	17	6
36	36_video.jpg	157	16	18
37	37_real.jpg	154	15	31
38	38_history.jpg	150	15	22
39	39_montage.jpg	142	14	9
40	40_representation.jpg	138	14	14
41	41_logic.jpg	138	14	24
42	42_graphics.jpg	135	14	14
43	43_number.jpg	130	13	6
44	44_interactive.jpg	127	13	31
45	45_compositing.jpg	122	12	36
46	46_cinematic.jpg	119	12	7
47	47_traditional.jpg	118	12	24
48	48_animation.jpg	118	12	21

The Software Studies Initiative released a useful tool in 2011 to visualize large sets of data and images. The ImagePlot plugin for ImageJ software, allows one to explore patterns in large image collections. By collecting the frames that appeared we were able to construct a short movie. The movie shows the 100 most used words in order of frequency. The X-axis shows the page number where the word appears for the first time, and the Y-axis shows the frequency of the word used in the book (see below).

The movie shows that Manovich has a particular vocabulary and important topics that he introduces at the beginning of the book. Some words are introduced later on, like realism, the image that appears at the right of the X-axis. There are seven words that he uses far more frequently than other words, namely: computer, new, media, image, space, film and cinema. This

shows Manovich' emphasis on cinema and film as a cultural form. *The Visual Language of New Media part I: imageplot*, has the potential to make the focus of the book explicit and visual.

5. The Visual **Language** of **New** **Media** part II: index

For the second part of the Visual Language of New Media, we decided to create an index of Lev Manovich's book. We wanted to present the narrative of the book in a new way and this version of the book also references to the prologue in 'Language of New Media' by Lev Manovich. In the prologue, he uses the film 'Man with a Movie Camera' as a guide to the book's major ideas. He selected important sentences from the book and illustrated it with stills of the movie.

[7]
A hundred years after cinema's birth, cinematic ways of seeing the world, of structuring time, of narrating a story, of linking one experience to the next, are being extended to become the basic ways in which computer users access and interact with all cultural data.

The work that is done for part II (index), was based on a good foundation of the earlier work done in part I. We have used the 100 most used words and looked up the corresponding page numbers. Furthermore, we selected the sentences of where the words first appeared. All the selected sentences are collected and bundled in a book. However, unlike Manovich, we did not organize the sentences by a chronological and linear order, but used the top 100 words and their first appearance to arrange the book. As a result, the narrative is not told in a linear way. You can see this yourself by looking at the top of the page where you can find the original page number of where the sentence appears in the book. Some sentences even appear more than once.

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The aim of this part of the project was to give a different perspective on the book, which provides a new experience. Can you understand 'The Language of New Media' by only reading these 100 sentences? What happens when you organize the content of the book in a different order? Like Manovich used 'The Man with a Movie Camera' as a guide to his major ideas, our index can function as a guide to the top 100 words to provide them with background information.

6. The Visual Language of New Media part III: language/new/media

For the third part of The Visual Language of New Media, we were inspired by the visualization that Manovich made in 2010, of the book of Anna Karenina by Tolstoj.

Manovich refers to the common reading practice of underlining important lines and passages in a text using magic markers. To create the visualization, he wrote a program that reads the text from a file and checks whether text lines contain particular word, in this case 'Anna' and highlights the found matches.

Based on this idea, we created the third interface. We used different colors of markers and we highlighted the three words of the title of the book: 'language' (yellow), 'new' (blue) and 'media' (red). By using this simple visualization technique, the pdf of the book can be used as a map of the book to quickly see and skip to the parts where these words are used in the text, and find new patterns. Does Manovich always use 'new' in combination with 'media'? Can the core of the book be found when he writes about 'language'? For this part of the project we have printed the whole book on A0 paper and it shows beautiful and colorful patterns which allows one to enter the text and concepts in a new, artistic way.

In addition, we have created a QR code, which directs one to the online version of this visualization of *The Language of New Media.* Once there, there is the possibility to scroll down, zoom in/ zoom out and navigate across the book in a new way.

Sources

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