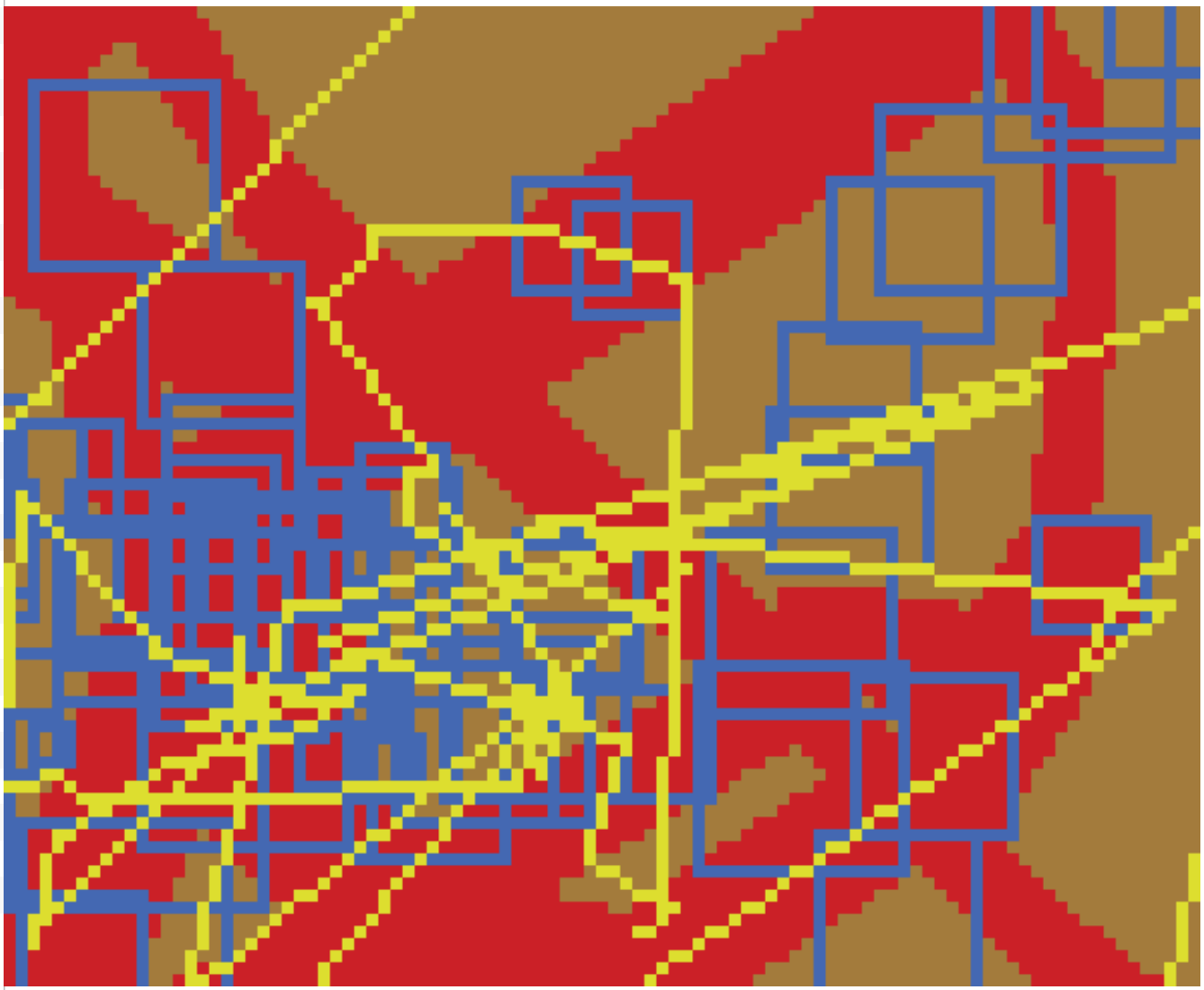
Dresscode | Raphael Perret

Diploma at HyperWerk,
FHBB Institute of Collaborative and
Creative Media, University Basel

Spring 2002



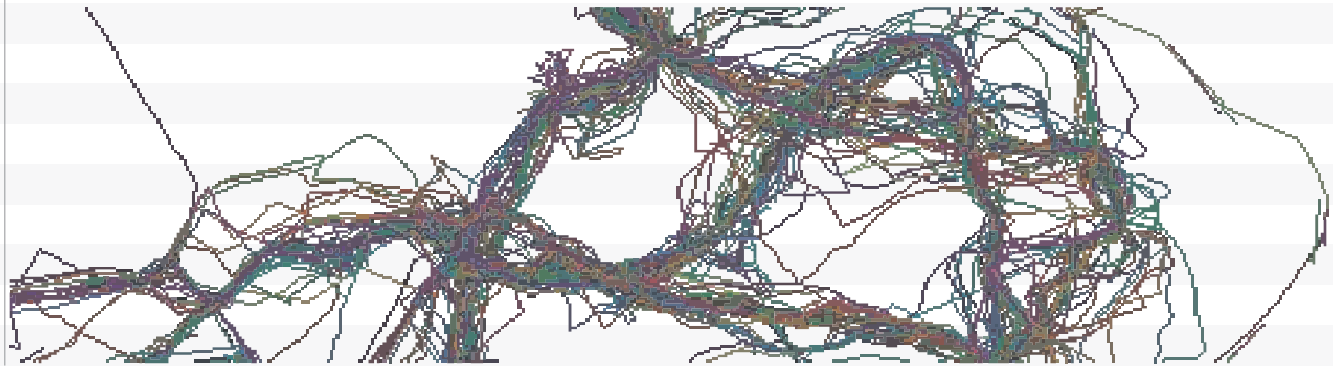
Dresscode converts datatraces into fabric.

Preamble

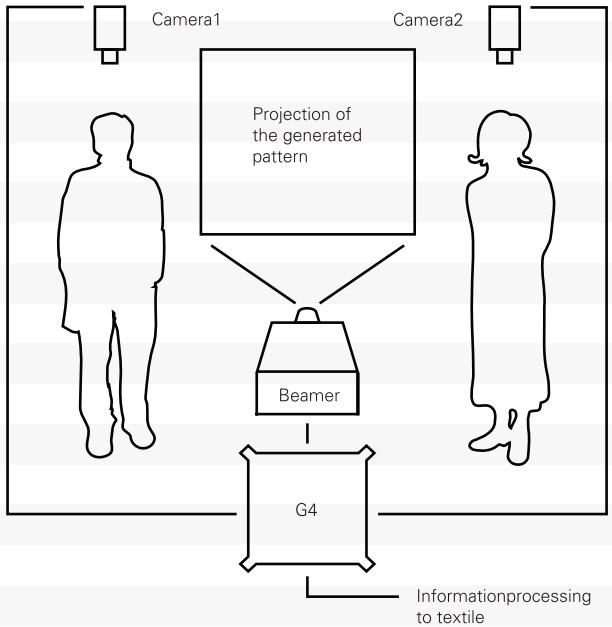
»With the development of television, and the technical advance which made it possible to receive and transmit simultaneously on the same instrument, private life came to an end. Every citizen, or at least every citizen important enough to be worth watching, could be kept for twenty-four hours a day under the eyes of the police and in the sound of official propaganda, with all other channels of communication closed.« [1]
1984, George Orwell

Even before their development, George Orwell wrote in 1949 about devices that make reciprocal communication possible. In his novel "1984", the society of Oceania is being watched by "Big Brother" via telescreens which also provide entertainment in the form of music and films. The main difference between Orwell's fiction and our highly technical world of today is that we are being exposed to several "Big Brothers". With the widespread use of networking computers and mobile communication devices, we are offered a high number of methods for electronic based reciprocal communication. Every computerised input device has the potential to record the parameters of our actions. It may be the input itself, position and time of usage that is being stored. This way, devices may provide information that reveal digital traces. Patterns of behaviour are represented in the data and allow conclusions of the generators personality. If all the digital traces of a person could be visualised, an abstract image in virtual space would result from the assembled data clusters.

In my thesis; Dresscode, I am presupposing that we generate recognisable traces in virtual space. I explore how the originating patterns can influence physical space and find their own expressions.



Picture: Competitors equiped with a GPS sender/ receiver device at the World Orienteering Championship 2001 in Tampere Finnland.
http://www.woc2001.fi



Introduction

The effects of data traces in real space are not always estimatable from their generator. Cause and reaction may be far away. I asked myself; "how can virtual traces and originating patterns be brought back to real space?" To create an experience of these traces, I developed the installation Dresscode. It consists of two cameras, connected to a computer that watch over two defined fields. If two persons are simultaneously entering each of those fields, the computer begins visualising their positions in realtime. The patterns of movement are being transformed into virtual patterns.

To translate these patterns back into real space, I chose textile. It's based on a matrix of threads, which go up or down on the warp. This structure makes it similar to that of the computer which is based on the smallest piece of information, zero to one. Fabrics are a multifunctional item. They not only help us to dress every day, but like data traces in virtual space, our clothes also provide information about our personality. How we dress is a code.

An important influence on my work was a piece by the conceptual artist On Kawara titled, "I went" produced in 1973. It consists of photocopied maps of different cities, marked with the date. On those maps, he drew exactly the way he walked everyday in the city over a course of months. His patterns of movement found their reality on the medium of paper.

Content

Dresscode deals with Orwellian facts in a creative way. The idea is to hand those facts back to the authors providing self awareness through a creative process. With the combination of related technologies, physical and virtual elements and their feedback, the generated data obtains a new dimension.

During the development of my work, the question fascinated me, “what would result from our entries into the computer and what could that look like?” I set a goal to give this hardly understandable expression interaction a physical experience in a closed, but extendable process.

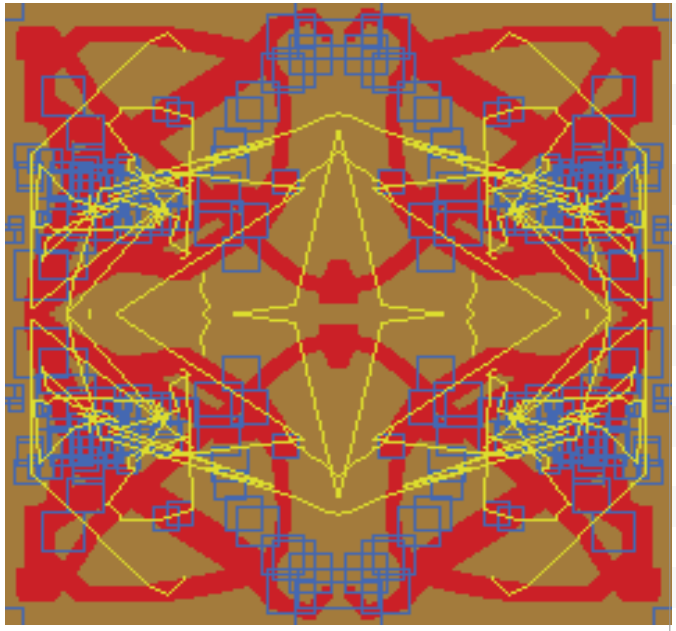
Dresscode

Interactive Process

The installation is set up in the way that two persons with equal rights can design a pattern through a common and interactive process. The communication between these two persons is a significant factor toward the end result. However, dresscode may be used without plan, arrangement or verbal interaction.

Layers Of Interaction

The resulting patterns generated from Dresscode are composed of three elements which originate from two layers of interaction. The first layer helps the two players to recognise and differenciate their own generated traces. One camera draws a continuous red line tracing the movement and the other blue squares in a rhythm. The line represents a process, while the squares show concentrations and spreadings in a certain rhythm, representing two opposing forms of visualisation.



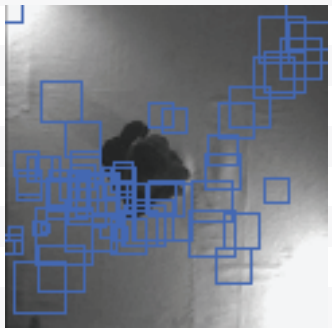
The pattern, mirrored four times

On the second layer, the life of the installation is taking place. The proceedings are not remarkable on the first sight and can not be influenced directly.

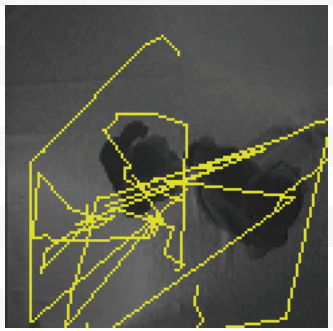
If a person is standing on each of the fields, the computer draws the calculated average of the two positions. In this way, the computer becomes the third element, it‘s own rules following player. Not only is the number of persons represented in the pattern but also the spacial distance between them. The closer they come, the smaller the squares become and the larger the lines.

With this alteration of sizes, another element of the ongoing process is represented in the pattern. The visualised data traces become a unique and differenciated expression with simple algorithms.

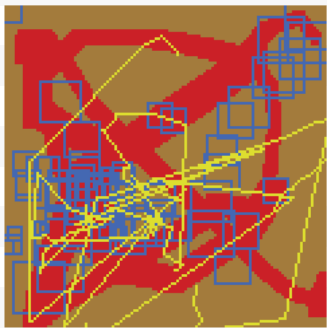
Camera 1



Camera 2



Computer



Pattern

Process

Concept And Research

For the development of Dresscode, I required a sponsor, which I found with the generous support of Swiss Textiles.

I conducted extensive research to help develop an aesthetical expression for my work. What could a picture of our actions look like in virtual space? Within my research the relationship between pixelated pictures and textiles became evident. Rough pixelated game graphics from the eighties resemble woven pictures, like Anni Albers‘ “Pictographic” (1953). Technical drawings of textiles consist of a matrix that is very similar to pixelated images.

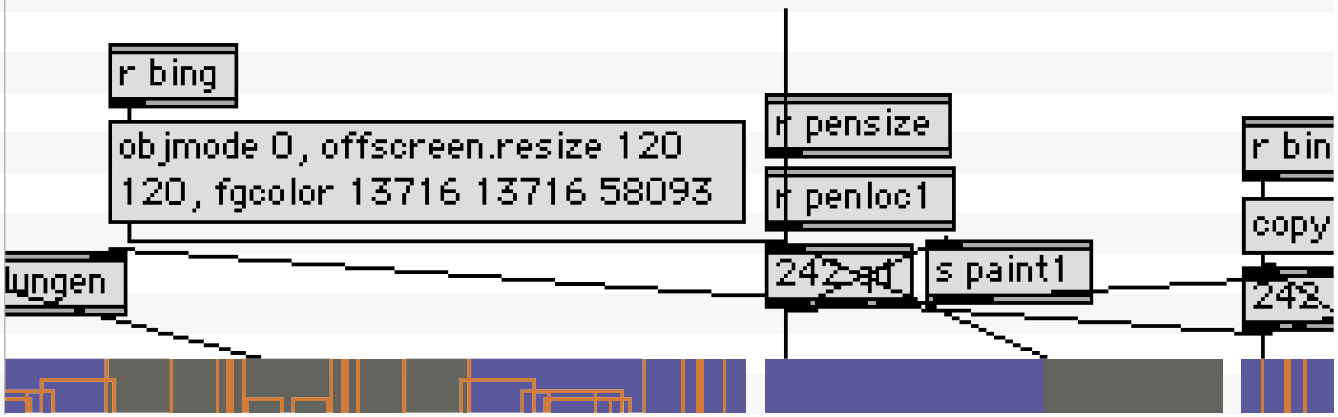
Technical Realisation

This technical realisation opened two fields. There had to be a way to generate patterns and this then needed to be processed into fabric. For generating the patterns I had the choice between Macromedia Director and Max/Nato 0+55. The decision to work with Nato 0+55 was based on it‘s open structure and versatility. The inquiries for the processing into fabrics were more extensive. I needed to find out the parameters for creating a pattern, which textile technique is most suitable and a production partner had to be found. I conversed with several sources; the textile school in Wattwil Switzerland, textile designers, looming and knitting factories. Through these conversations I gained a sound knowledge of the industry. Annette Douglas (textile designer) and the looming factory Weisbrod-Zürrer AG became two strong production partners, who supported me generously.

Programming

A mini installation developed out of the first programming steps with Nato 0+55. In this initial test I generated the first patterns which were loomed at the beginning of November. The fabrics gave an impression of the tactile and visual language of the patterns. Based on these results I had a clearer understanding of what parameters i needed to put in place. A game situation with its laws and possibilities had to be created that would in turn influence the look of the fabrics. I set up the installation in my living room where I experimented with several different scenarios. I came to the conclusion that the users should have equal rights and be able to control their interaction with the computer intuitively. Also, there should not only be a process between the computer and each single player, but they should also influence each other. Therefore I let both generate different traces. The players drew thin lines and fields arose while they stood still. They had an empty canvas on which to create, however they still did not influence each other so I let them change the size of their traces.

The visual elements of Dresscode, at this early stage of deveolpment, are intentionally basic. This prototype produces an aesthetic that mixes the controlled and linear world of computers with the uncontrolled and organic human world. It emphasizes the character of this developing prototype.



Dresscode Version 0.55beta

Dresscode premiered in a performance held at the Plug_in Basel, on 9 january 2002. Three pairs of performers generated two patterns. A pattern of each performance was knitted by the designer Christa Michel the same evening. Unfortunately, the use of a nonindustrial loom turned out to be too time intensive for a performance. In order to make Dresscode experiencable, a knitting machine would be required. For the remainder of the evening, the installation was used intensively by the audience with great playfulness. The remaining patterns, generated by the performers, were weaved after another test. A CD-ROM, made with Nato 0+55, documents the evening.

With the fabrics that were produced by Weisbrod-Zürrer AG, a student at HGK department of fashiondesign, Rosa Presedo, created two outfits. A robe and a non-sleeved shirt for two of the performers; Lisa and Tom. The pattern they had generated came back to its originator and was an object of a new creative process.

Dresscode is still in development. It is more a flexible prototype that seeks it‘s application in a design process. I would like to continue working on the process that occurs between the users plus explore other aesthetic possibilities.

Claude And Sara 09.01.02 Plug_in

Knitted Fabrics 09.01.02 Plug_in

Textile + Technology

Sadie Plant

Joint development of the relationship between textile and technology in context with my work, is very important to me.

"Zeros and Ones" by Sadie Plant describes Textiles as the softwares linings for all technology. »String, which has been dated to 20,000 B.C., is thought to be the earliest manufactured thread and crucial to taking the world to human will and ingenuity, not least because it is such multipurpose material. It can be used for carrying, holding, tying, and trapping, and has even been described as the unseen weapon that allowed the human race to conquer the earth.« [2]

She continues:: »With time and raw materials on their hands, even Neolithic women were investing large amounts of extra time into their textile work, far beyond pure utility, suggesting that not everything was hand to mouth.« [3]

Jacquard

1805 saw Jean Marie Jacquard inventing a looming machine that was controled by punchcards. Every single warp thread was lifted and lowered by the commands of the cards. With this development 200 years ago he discovered the mechanical bits, the smallest piece of information: zero to one. The system though was still lacking; it required several thousand cards to weave a fabric.

Ada + Babbage

In 1822 the English inventor Charles Babbage constructed a difference machine that could sum up numbers. He then developed an anlytical machine which should have been able to calculate several operations, unfortunately his project was ahead of its time for the engineering technology available. So the machine had to stay on the drawing-board. Babbage integrated Jacquards punchcard technology in his developments and had an intense letter exchange with Ada Lovelace, an English noblewoman. Ada translated Babbages work documentation in 1843 and added her own lengthier article in conjunction. She saw the embodiment of mathematical science in the machine. Scientific, as well as the practical uses were possible. Complex music could be composed and graphics designed with it. With these predictions she described the computer of our days.

```
000101100001O
001110000011O
001110000011O
100000010010O
000101100010O
010101000100O
010001000100O
```

Binary Code

The punchcard returning system, designed for the analytical machine, found its use in the proceeding jacquard technique. In the calculating machine it served as memory and input allowing repetitions of commandsequences. What is nowadays called programming loop. The profit of this novelty was, that a symmetric pattern could be loomed with a much smaller number of cards.

By 1880 the punchcards had their breakthrough. For the evaluation of the american census Herman Hollerith constructed a machine that worked with an electromechanical punchcard system. This calculator turned out to be such a success, that he founded the company Tabulator Business Machines in 1898. The company changed its name in 1924 into International Business Machines, better known today as IBM.

```
ATG TCG AAA AAA
GTG GTG ATG TAC
TTA CAG CCG ATG
GAT TTA TGG GCA
GCC GGG AAT AAA
TGC CGT GCG TTA
TGG CAG GAT GCA
```

Gene Code

Textile

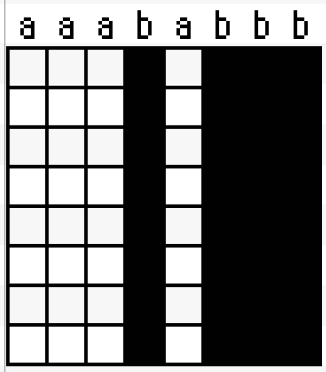
Textile = 01101001

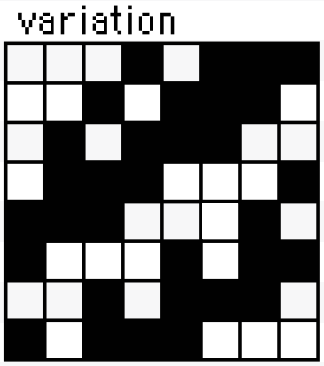
»Chequers, the tailors called them, the Lady having created the pattern by programming a Jacquard loom to weave pure algebra.« [5]

Not only did Ada Lovelace connect Code with fabric design, algorithms are still a topic for textile designers today. The application works like this: (a+b)2 equals aa abab bb. By replacing the variables with a color and weaving them in the resulting rhythm, the arithmetic formula is made visible through a pattern of colors. Jhane Barnes uses this visualising technique for gene codes, that are based on four elements: a, c, g and t. [4]

There are many ways to design fabric, however, if there is a computer involved, designs can be sketched, simulated and the bindings programmed. With it‘s multifunctionality it can support the whole process from the first draft to the programming of the loom.

Example (a+b)2





Textile = Process

»Because there is no difference between the process of weaving and the woven design, cloths persist as records of the process which fed into their production: how many women worked on them, the techniques they used, the skills they employed. The visible pattern is integral to the process which produced it; the program and the pattern are continous.« [6]

The close relationship between process and pattern broke with the invention of the looming machine. From this point on a pattern had to be designed and programmed onto the punchcards, the loom only executed a program. Today the looming machines require an entire program. A sequential transmission that would allow a fabric to result part after part is not possible due to complications with the binding technology. A sequential process could have been established in the Dresscode installation. A line of pixels can be created per time measure, but I decided to visualise a period of time instead which, like photography represents the actions in space.

Textile = Information

Even if there is not always a process visible out of a fabric it is still a diverse medium for information. During the Russian invasion in Afghanistan, local craftsmen created carpets that depicted weapons. [7] One sort of the checked patterns of Scottish Kilts (tartan) are woven by the family who has the sole rights to weave them. The geometric kente pattern from Ghana has many meanings. These can reach from political engagement and religion to historical events. [8] Two statements sum up the interwoven nature of culture and cloth; “A culture can be hung up by a thread,” and “there is no culture without fabric.” [9]

Acknowledgments

My special thanks go to Annette Douglas, Flavio Viera, Weisbrod-Zürrer AG, Swiss Textiles, Sibylle Schneider, Traxler AG and VIA AudioVideoFotoKunst for their generous support and to Regine Halter and Gerhard Buurman as my coaches.

A warm and grateful thankyou goes to:
Annemarie Seiler, Bacon, Brigitte Grüniger, Céline Hüsler, Christa Michel Strickdesign, Claude Hidber, Claudia Güdel, Claudia Hofmann, Daniel Hildebrand, DJ Monsta, DJ Quasimodo, Familie Perret, Jasch, Johnny deKam, Lisa Besset, Micromusic.net, NN, Plug_in, Rosa Presedo, Sara Bellamy, Sebastian Schnorf, Sirpa Chillon, Marc Champion, Martin Schaffner, Mirjam Freitag, Nadja Solari, Naturhistorisches Museum Basel, Thomas Wüthrich und Wolfgang Hockenjos.

Appendix

Notes

[1] 1984, George Orwell, Page 214
[2] Zeros and Ones, Sadie Plant, page 61
[3] Zeros and Ones, Sadie Plant, page 63
[4] Jhane Barnes http://www.jhanebarnes.com
[5] The Difference Engine, William Gibson and Bruce Sterling ISBN 3-45305-380-X
[6] Zeros and Ones, Sadie Plant, page 66
[7] Ornament und Abstraktion, Fondation Beyeler, Seite 223
[8] Kente Textil http://users.erols.com/kemet/kente.htm
[9] Annemarie Seiler, Interview 04.07.2001

Bibliography

[b] On Kawara 1973 – Produktion eines Jahres, Kunsthalle Bern
[b] On Weaving, Anni Albers, Westleyan University Press, Middletown, Connecticut
[b] Ornament und Abstraktion, Fondation Beyeler, DuMont Buchverlag, 3-905632-13-6
[b] re:play, ultimate games graphics, Liz Faber, State Design, ISBN 1-85669-140-3
[b] Der Auftrag, Friedrich Dürrenmatt, Diogenes Verlag, ISBN 3-257-21662-9
[b] 1984, George Orwell, Ullstein, ISBN 3-548-22562-4
[b] Nullen und Einsen, Sadie Plant, Goldmann Verlag, ISBN 3-442-15074-4
[b] Digital Mantras, Steven R. Holtzman, MIT Press, ISBN 0-262-08228-4

[w] Credit information http://www.creditbase.com
[w] Positioning of mobile phones http://www.friendzone.ch
[w] Security in the net http://www.sicherheit-im-internet.de
[w] GPS – Transmitters for humans http://www.digitalangel.net
[w] GPS – Transmitters for anmials http://www.lotek.com