

The Aesthetics of Digital Images – Selection and Semiosis

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Rhetoric of Digital Images

One might not expect from pictures to represent things as they have been, commented the Russian philosopher Boris Groys¹ on the affair of a manipulated war photograph of Beirut in August 2006: A blogger uncovered the doctoring of drift smokes above a residential area in the inner city; the photographer was fired by Reuters.²

The relationship between a picture and its represented object has never been that of true indication. Theories of Photography have described in detail why. In 1961 Roland Barthes wrote: "The press photograph is a message. Considered overall, this message is formed by a source of emission, a channel of transmission and a point of reception. The source of emission is the staff of the newspaper, the group of technicians certain of whom take the photo, some of whom choose, compose and treat it, while others, finally, give a title, a caption and a commentary. The point of reception is the public, which reads the paper. As for the channel of transmission, this is the newspaper itself..."³

Following Groys, to transform pictures in the way the war picture was transformed, does not refer to its validity, but to its visual rhetoric, which becomes more dramatic and more expressive through transformation. Photographic transformation corresponds to the method journalists apply to

make punchy their texts and reports. And since digital media have been providing picture processing this method is being transferred to digital images.

Thereby, it is not about a pictorial turn to have taken place, but a transformation of picture into script. Digitalization, in this sense, means the encoding of pictures into signs, and consequently their belonging to language. Digital pictures are sentences, within which we have to differ between validity and rhetoric, and within which we have to search for opinions not for truths. Transformation of pictures, as Groys comments, should be treated in means of rhetoric not in means of manipulation (fig. 1, 2).

Computer Commands

Consisting of discrete elements digital images differ from analogue ones in being saveable, transmittable and processable. Taking Groys seriously, we actually cannot call them images, but texts that are convertible to machine language. Finally they are computable binary digits represented by one and zero, formally arranged with the help of the logical gutters AND, OR, and NOT, and, in this way, they are algorithms or instructions for computers. Digital images are therefore regarded as sequences of computer commands, which can be treated in all ways possible within a machine of von Neumann architecture. They can be generated, transformed, printed, output as sound, etc. (fig. 3, 4).⁴

The computer does not differ between 'forms', that is, between different representations of data. To represent digital data to different interfaces does not change information for the computer, but only for us; even more: digital information for us only is contingently represented information on an interface.

Digital technologies undermine, and at the same time, universalize all other media, just knowing a digital logic with discrete elements and combinatory rules. It is a question of selection:



Fig. 1, 2: Image rhetoric of analogue picture processing: During the Stalin era, Soviet officials frequently vanished from official photographs after falling out of favour at the Kremlin. With airbrush or ink spot, the photo censors worked quite precisely (left: original photograph, right: treated photograph)

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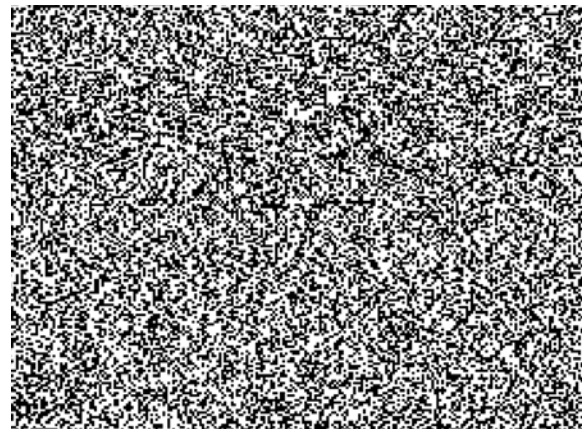


Fig. 3, 4: Cutouts of the output of a self-programmed software, showing the Bauhaus Colloquium website as binary data of zeroes and ones (left) and as monochrome pixel graphics (right)

Digital image processing can generally be taken as selection and transformation of specific algorithms, although application programs are visualizing these processes for interfaces like screens, where users apparently are working on images with the help of pencils, brushes, paint buckets, etc. But taken without the 'iconic masquerade', these operations are selected, pre-programmed instructions processed by the computer.

Selection takes us back to Boris Groys, who describes modern art as some kind of aristocracy, with artists behaving like nobles, who no longer create artworks, but who select them among every day life objects. They select, grasp, modify, edit, move, combine, reproduce, arrange, put in a series, exhibit or put away, but they do not create. They select in an innovative and completely 'artificial' way, things that other people would not even notice. But, according to Groys, people notice the artist's selection and custom as avant-garde strategy continuously extending the borders of art.

In concerns of digital image processing, Groyasian terms of selection, modification, edition, and combination seem to perfectly describe the informational condition.

Talking of selection in terms of digital image production, however, implies the topic of context, as artists and architects of informational society have to do strategic and innovative selections within huge networked contexts. Apart from encoding scripts, images, sounds, and even smells as digital data, and digital data as scripts, images or sounds, computer technology provides this second aspect of digital networking: The addressable memory, which is growing to amazing dimensions, already provides, within one computer, a huge hypertext structure. The memory, thereby, is accessible in a non-linear, rather associative way, permitting to jump for and back, up and down. Actually, programmed links transform texts into hyper textual canvas, and linear image sequences into hyper medial structures of clips and takes. Auto generated linear orders are

endorsed by navigation and programmed interaction.

In 2004 Hardt and Negri wrote: "It is not that networks were not around before or that the structure of the brain has changed. It is that network has become a common form that tends to define our ways of understanding the world and acting in it."⁵

Internet finally opened the computer to the online world, wherein anything can be found in practically endless variation. These variations not only concern contents, but as well data structures. François Lyotard even claimed, that under informational condition, it is not only the content, which is essential, but also structural order and combination of data.⁶

Among images we can find various data structures, that is types of graphics, let alone the number of file formats: there is a so-called raster graphics, which is a data file representing a rectangular grid of pixels, or points of colour; and there is a so-called vector graphics, which uses geometrical primitives based on mathematical equations. Raster graphics is practicable for realistic photograph's representation, but it is not scaleable to a higher resolution; vector graphics is practicable to all models for 3D rendering, and it is easily scaleable, but not that realistic.

Architects usually develop their models as vector graphics; their renderings are raster graphics providing highest image quality (fig. 5, 6).

Selection and Semiosis

Abstracted from purely biological contexts of evolution, selection was scientifically discussed by the cyberneticists of the forties and fifties.

Claude Shannon developed a technical model of information transmission within his mathematical theory of communication.⁹ A sender selects, encodes as signal, and transmits information, which then is decoded by a receiver. In his essay, he concentrates on the problem of how to restore a message at



Fig. 5: MVRDV, renderings of Liuzhou dwelling 2006

*"Next to Liuzhou, a city in the south of China, on the edge of this exceptionally beautiful natural Karst mountain range, a World Heritage protected site, a lime stone mine is situated. In this mine, 5 of these beautiful mountains are dramatically cut into half. By 'cladding' the escarpments with the houses, the potential continuation of the park can be arranged. It restores the beauty and creates a continuation with the surrounding landscape, it can protect the eroded mountains from further erosion, and would create houses with a view and ventilation. The building appears like statues in the park, like the four presidents in Dakota."*⁷



Fig. 6: OMA, renderings of Shenzhen Stock Exchange, competition 2006, realization 2007

*"The essence of the stock market is speculation: it is based on capital, not gravity," Rem Koolhaas says. "In the case of Shenzhen's almost virtual stock market, the role of symbolism exceeds that of the program—it is a building that has to represent the stock market, more than physically accommodate it."*⁸

the destination, which is encoded and transmitted across a disturbed channel. Thereby he refers to physical entropy, a measure of disorder within a system, to develop information entropy as the measure of noise within a communication system, which determines the uncertainty of a message to be selected. By including Norbert Wiener's probability theory, Shannon actually invented the field of information theory, which is a theory of virtual events, which, in this way, does not ask for the sense of information, but for its probability to be selected out of a number of possibilities. The higher the amount of improbability, the higher—the more surprising or innovative we could say—is the information.

It was the philosopher Max Bense, who, in the sixties, brought forward information theory to fields of art and architecture. His information aesthetics has more or less been forgotten, as it wants to quantitatively measure aesthetic information, which is understood as a heretic try to quantify art. We think it contains a quite interesting model of aesthetic production in a technical context, working upon the terms of communication, selection, and semiosis. Thereby selection is understood—in terms of information theory—to produce innovation, and semiosis is understood to create signs, which are necessary for communication processes.

Rejecting earlier techniques of art interpretation, Bense aims at contributing to a modern techni-

que of observation: Because art and architecture can only achieve total interest as an intellectual object, they shall be treated within a process of comprehension. From information theoretical point of view, comprehension (Shannon's decoding) is a problem of transmission, and can thus be discussed as a part of probabilistic processes. Bense stated that every artwork is a channel, which transmits a special kind of information, called 'aesthetic information'. In other words: Artworks are constituted of material distributions, which carry aesthetic states. Contrasting to physical states, which are usually determined, controlled by laws, and thus of high probability, aesthetic states are of extremely low probability. The beauty of a painting cannot be foreseen; in general the aesthetic states are undetermined, and unfixed. Whereas physical states are categorized within conformity, aesthetic states are categorized within originality, or uniqueness. Following Bense, aesthetic objects like images should somehow be original, they should be artificial productions of low probability or deviation from the norm, for aesthetic structures contain aesthetic information only insofar as they manifest innovation. The aesthetic information is a function of probabilistic selection, and increases with the freedom of choice, which is its improbability, the disorder of the system out of which is selected. But, as Bense continues, it is obvious that the aesthetic value of

an artwork not only depends on its originality, it rather depends on two information theoretical aspects: originality and what Bense calls style. Thereby, style is constituted of redundant factors, for the 'improbability' of information not to reach such a high degree, that it cannot be understood. These redundant factors have a ballast function, in that they facilitate the understanding of information, but also add superfluous components.

Max Bense elaborates in detail, how to understand information based communication. Information is constructed out of signs, or more precisely: all components of an artwork like colours, sounds, lines, etc. must be understood as signs, because only signs can appear in a communication scheme. Bense's sign concept relies to the semiotics of Charles Sanders Peirce, which states, that anything—for example a digital image—could become a sign when entering in relation to an interpreter, to an object, and to the sign itself.

The interpreter-relation thereby is the most complicated side of a sign: It is the source of all interpretations a sign can be given, and of the operation, which makes us explain signs again and again through other signs. Bense explains: "The interpreter-relation of a sign is really the empire of meanings. Because meanings are not stated but interpreted, they do not exist as complete so-being, but are manufactured."¹⁰ And they depend upon the coherences and the contexts of their signs. Meanings can be regarded as contingent functions of signs, the latter tending to disappear. Or to put it the other way round: Signs absorb their physical contexts, and, in this way, they blur the borders between semiotic and ontological systems, between consciousness and physical world.

Since images usually do not have a stable context, interpretations become completely arbitrary. We can compare two different interpretations of Liuzhou (fig. 5), illustrating Bense's empire of meanings, which highly depends on viewers' context and on the redundancy of its signs.

From a blog on MVRDV Liuzhou design:
"FAKE PLASTIC RENDER
Posted by aTT on 1/3/2006 8:17:00 AM
we inhabit in bogota, colombia (tats south america, fellas) and the project that mv proposes is nothing different from the reality of CIUDAD BOLIVAR, a gigantic poverty settlement where 2 million people live and thus have built it themselves, meaning, no design, rather spontaneous order, FAR MORE AUTHENTIC AND INTERESTING than mere fake plastic renders simulating chaos. Pathetic. MVRDV: WE THE POOR INVITE YOU TO A FACE YOU FACE CONFRONTATION IN THE MIDDLE OF CIUDAD BOLIVAR IN BOGOTA, WHERE THE REAL THING IS GOING ON."¹¹

The designer's interpretation in contrast states: "It restores the beauty and creates a continuation with the surrounding landscape, it can protect the

eroded mountains from further erosion, and would create houses with a view and ventilation."¹²

An image of a Chinese landscape is one of the first Google hits for 'China': It is not only that MVRDV wanted to establish with the Liuzhou images a connectivity to typical Chinese landscape photographs, but they were probably affected themselves by these 'romantic pale views', populating the WWW (fig. 7, 8).

The redundancy of signs within specific contexts not only determines interpretation, but also aesthetic opinion, because, as Bense argues, the redundant and recognizable is considered as beautiful.

Concerning their sign-relation, digital images are regarded in terms of the technological dispositives they are produced in: they are selections of computational algorithms; they are results of technological models, which work according to their own architecture and rationality. This logic is being communicated in all images: All of our examples are rendered images, which can be understood in terms of a number of visible features, as shading (how the colour and brightness of a surface varies with lighting), texture-mapping (a method of applying detail to surfaces), fogging (how light dims when passing through non-clear atmosphere or air), reflection (mirror-like or high glossy reflection), transparency (sharp transmission of light through solid objects), photorealistic morphing (photoshopping 3d renderings to appear more life-like), etc.

All digital images look highly pristine and aesthetic in similar ways; they usually are produced as central perspective, with the sun as vanishing point, they accentuate the middle, and they are smoothly colour-coordinated. In this perspective, aesthetics of architectural design renderings are comparable to classical aesthetics of central perspective, which is as well characteristic of virtual game environments (fig. 9, 10).

In means of object-relation there is no difference between designs referring to a future reality, and digital images representing virtual environments, because technologies—they specify visual possibilities—are the same. The point is, that digital images exhibit a highly clean but realistic aesthetics that imports aesthetic stereotypes from reality (like a golden sunset), and exports artificial ones, overlaying reality.

Max Bense tries to explain the increasing aestheticizing of the environment as a result of an growing artificiality of technical civilization, in which the artificial catches up to the natural. Artificial aesthetics belongs to the technicism of the world. Not only is the technical progress about the technical function of the world, but also about its aesthetic state; both are components of communication. Therefore, to make the world more technical and more aesthetic is to make it semiotic.

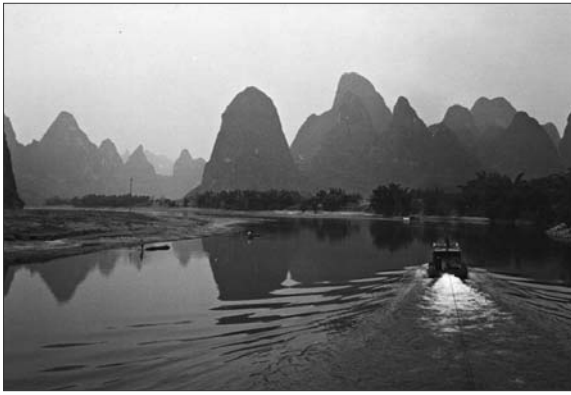


Fig. 7, 8: Photograph of a Chinese landscape (left) and MVRDV rendering of Lhiuzou (right)



Fig. 9, 10: Online game active worlds (left) and OMA rendering of Shenzhen (right)

Notes:

- 1 Interview with Boris Groys: Von der Fotografie darf man nicht erwarten, dass sie abbildet was war, WAMS, August 13th, 2006.
- 2 http://www.pdnonline.com/pdn/newswire/article_display.jsp?vnu_content_id=1002951326.
- 3 Roland Barthes, *The Photographic Message*, in: Stephen Heath (ed.): *Image, Music, text*, New York 1977.
- 4 In the forties, John von Neumann developed this concept of a machine, which differs between software and hardware; today's computers still rely on this concept.
- 5 Michael Hardt, Antonio Negri, *Multitude: War and Democracy in the Age of Empire*, New York 2004.
- 6 François Lyotard, *Das postmoderne Wissen* (french 1979), Wien 2005.
- 7 <http://www.mvrdv.nl>
- 8 http://www.e-architect.co.uk/hong%20kong/shenzhen_stock_exchange.htm
- 9 Claude E. Shannon, *A Mathematical Theory of Communication*, 1948 <http://cm.bell-labs.com/cm/ms/what/shannonday/shannon1948.pdf>
- 10 Max Bense, *Art and Communication*, in: *Lugano Review*, 1965 II.
- 11 <http://www.landliving.com/articles/0000000966.aspx>
- 12 <http://www.mvrdv.nl>

Further literature:

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 Boris Groys, *Über das Neue*, München 1992

Credits:

"The Commissar Vanishes" http://www.newseum.org/berlinwall/commissar_vanishes/
 "MVRDV – Liuzhou Dwelling" <http://www.mvrdv.nl/>
 "OMA – Shenzhen Stock Exchange" <http://www.dezeen.com/>
 "Claude Shannon's communication model" <http://cm.bell-labs.com/>
 "Chinese Landscape" <http://www.georgeandpaula.com/photos/china/china15.jpg>
 "Active Worlds" <http://www.activeworlds.com/>