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Review on Nicolas Clauss

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1. Skilled Workers as Artists

The arrival of software set an end to complaints about the end of art. Engineers have provided artists with new material to work on and to exhaust themselves with. Whomever had been tired of conceptual art found a new field to devote their energy. Learning programming honours the artes mechanicae again, on which popular definitions of art are based such as "Kunst kommt von Können" (art evolves from skills). Some already consider the programmers the actual artists to be ranked over the pure "idea givers", who do not know how to materialize their concepts: Claus Oldenburg as windbag, his carpenter as genius? Triumph of the hands over brains, technical over aesthetic intelligence? Or will both once again unite?

The Frenchman Nicolas Clauss is an example of someone who shifted from painting, photography, and video to programming and digital multimedia. His website – which opened in spring 2001 appearing as its own gallery with almost 50 pieces by the end of 2002 – introduces Clauss as a: "Paris based painter, who stopped traditional painting to use the Internet as a canvas". Since this end of being a traditional painter, Clauss's work has found worldwide admiration (flyingpuppet.com/press.htm). Viewers and critics especially love his dancing stick figures in a surrealistic landscape, which one can move on the screen with one's hand on the mouse, brushing them against each other, hence initiating another dance and another sound line by Thomas Le Saulnier or Jean-Jacques Birgé. Here users graduate to being choreographers and composers; and if they are competent with computer games they may manage to have all figures dancing and all sound lines playing at once (see "Legato" or "Cellos" or "Moontribe" or "Roundabout").

In view of such magical, hypnotic use of software one hardly believes that Clauss "[is] not interested in code", as he states in an interview with Jim Andrews, and does not consider himself to be a programmer at all, as he declares in an interview with Randy Adams: "I'll never be what you call a programmer. I surely need technical skills to do what I do, but it is not the goal at all."

The promise behind this limitation may be the underlying formula to Clauss's success: if technology is not the actual aim but a means to express ideas and feelings, technical and aesthetic intelligence bind together toward a promising unity.

Clauss's specialization is interactive choreography and interactive image perception. Of course, here interaction means more than what normally happens as inner dialog between the viewer and the work. Since the rise of electronic media, paintings have been created which are different not in content (therefore they do not need new media, just a new era in art history), but in presentation. Clauss calls it the "gestural dimension," which pulls the viewer into the painting.

2. Crumbling Paintings

The perceiver's immersion in the image is to be experienced as early as in "Zerseher" ("Disviewer") by Joachim Sauter and Dirk Lüsebrink in 1992. Here the visitors destroy a painting by looking at it. The parts of the picture they look at fade under their gaze. This effect is produced by presenting the painting on a monitor and by a computer, which pinpoints the viewer's eyes and erases those parts of the painting the visitor is looking at. And of course, in such a digital environment the painting can easily be reset again.
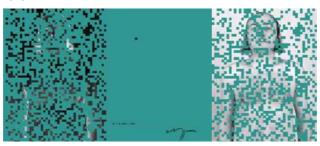

Such eyetracking technology can be applied to every painting. The fact that Sauter and Lüsebrink chose "Boy with a child-drawing in his hand" by Francesco Carotto may have justified even more why the installation "Zerseher" was awarded with the Prix Ars Electronica in the category of interactive art. For with Carotto's painting, the impressive technical effect accompanies an appropriately meaningful frame of associations. One can understand this installation for what it is: it changes the impact the images normally have on their perceivers. This change could be understood as freeing the perceivers from their passive role of perception. However, such a perspective would be as shortsighted as it was in the hypertext-debate of the early 90's in which the mechanical involvement of choosing links was described as an "active" position and ranked over the intellectual involvement of pure perception as a "passive" position. Sauter's and Lüsebrink's installation has more potential than such an approach would allow one to see. One has to reflect on the physical action in its entire complexity.

"Zerseher" is meta reflexive in showing its viewer a person looking at a painting. Such mise-en-abyme – which is readily found in the cinema or the novel[1] – is as popular as it is irritating. Since it is a child looking at a children's drawing, the allusion

is doubled. It thematizes an innocence of both drawing and viewing which has been lost long before the destructive "Zerseher" by Sauter and Lüsebrink. We (at least in the western world) are "adults" in the history of looking and painting. Our eyes have seen everything not only impressionism, which caused scandals once, but even the most abstract presentation seems flat to us. Rescue lies, once again, in the environment of painting, in focusing on presentation of presentation. Since the readymade and the white square on white canvas all have been done already. A technology to "disview" paintings appears just in time – and to "disview" a child looking at a children's drawing seems to be the right symbol to express such a situation: The "Zerseher" is not as much the disviewing of a painting as a view of painting and viewing.

At a phylogenetic rather than an ontogenetic level, such disviewing of the innocent view can be read as a comment on the evolution of our own perception. The fact that the observed disappears in the process of our observation can be understood by the way that we lose the objects in approaching them. In bringing all our acquired concepts and perspectives to these objects we only read ourselves into them – in contrast with children, who may still be open to the world. The theory of constructivism claims that our perception is governed by our self-referential, rather closed cognitive system. Constructivists must love a piece like the "Zerseher."

There are other types of destructive images, like Wolf Kahlen's self portrait "Selfless", an installation of a photograph which materializes selflessness in three steps. First, one sees the negative of a portrait of Kahlen from 1969, which looks like a mosaic missing a lot of pieces. These pieces have been taken away every time a visitor came to the site. On a second, blank page the visitors then find their "personal pixel" at its original position within the photograph. This image is numbered and signed by Kahlen to be printed out; here the numbered, signed, and printed copy is not without humour. On a third page all the pixels taken away by visitors add up to the positive version of Kahlen's portrait. The transfer from the first to the third involves the disappearance and reappearance of Kahlen's self, his transformation from the negative into the positive print. The viewer's view (or rather, their click) "disviews" the image only in order to reset it in its proper version. "Selfless" is a romantic project, which (re)creates the author's self as a result of a collaborative user action.

Both versions of interaction in the "Zerseher" and "Selfless" share a common trait; the perceivers do not "own" the moment of perception anymore. Their observation is observed either directly, resulting in image destruction, or indirectly in the process of image reconstruction. The viewer is within the image; the freedom and peace of contemplation, which was possible even in front of the most abstract, irritating painting, is lost. Thus, a very different end of painting has arrived than what has been declared in the course of art history so far. Nicolas Clauss dedicates one of his first digital paintings to this very aspect.

3. Writing Images

Clauss, as well, plays with the idea of the self on his biography page. He offers a multiple of portraits, which on mouse contact are layered with several different versions of hair and beard styles. The disconnection of mouse contact allows the last version of this layer to run-through so that finally the piece has turned into a series of variations on the same portrait. This is already a funny though suggestive comment on Clauss's own identity. Part of this identity is that Clauss replaced the canvas with the screen.

The end of painting is verbally expressed in Clauss's "Mechanical Brushes". This piece displays the tools of traditional painting, Clauss's own well-used brushes, palette knives and spoons; all still full of paint as if they were in the middle of a job. But the subtitle says: "A moving still life with used brushes (a provisory goodbye to painting)". While these brushes may have a glorious past, they do not seem to have any future (though the adjective "provisory" leaves room for hope). Indeed, they only serve as background for a handwritten text. The text itself moves like a brush back and forth over the page, rendering itself invisible over the black background color around the actual brushes.

"Mechanical Brushes" could easily have been a bold statement with static text: as a presentation of painting tools already useless for their own representation as a photograph. In this form, "Mechanical Brushes" could very well be exhibited in a traditional gallery as a traditional image reiterating the impact of photography on painting. Of course, the animation requires the digital medium, as do the interactivity and sound (if one moves the mouse over the image, the brushes begin to rotate to a mechanical sound). The painting tools have become a mechanical construction, which visually and conceptually are reminiscent of Futurism. At the beginning of the 20th century, materials were used in a similar manner – that is, in ways they were not intended to be used. Elements have been animated, deconstructed and strangely rearranged. The work of Picasso or Braque comes to mind. Fernand Léger's "Ballet mécanique" serves as an equally good example within the film medium. As Clauss points out in his interview with Adams, he already (as a "conventional" painter) used found objects "in the tradition of Duchamp with ready-mades, Schwitters with collage, or Rauschenberg with »combine paintings«." Is Clauss's brush-mechanism a revisitation of a Futuristic gesture?

"Mechanical Brushes" is undoubtedly comprehensible as a glorification of technology. Similar to Léger's "Ballet mécanique," this glorification takes place in terms of content and method as well. Clauss's old tools are not only nailed (of course just virtually—the real brushes remain untouched for the promised return to painting) and misused as reading background. The new medium shows the new possibilities already in action. The statement is performative; the manifesto is its own artifact. The message is already to be found in this artifact's subtitle: "a moving still life." The encountered animation explains the contradiction: digital painting is painting in time; it is not just a fixed moment of the past, for it inhabits future moments to be revealed in the interaction with the viewers. Digital painting is potentially kinetic. As the "still" life under discussion shows, such painting in time is not silent either. As a consequence of such a constellation of painting, the brush no longer embodies the appropriate tool. It can only serve as a symbol of its own lack of necessity. The brush of digital images is the code; painting, in its materiality, has become text.

To a certain extent every digital painting is a goodbye to painting. In digital paintings, colors are not mixed anymore with brushes, knives or spoons but written as hexadecimal numbers. There are no lines drawn anymore with the brush, there is actually no line at all but a certain depth of pixel perceivable as a line. On the screen of course the code appears as color, the pixels as line. The ambition of digital painting is to hide the difference from analog painting and to feign a line by a sufficient arrangement of pixels; one may call it a kind of modified pointillism. "Mechanical Brushes" is a good example of such ambition, since it needs quite an amount of effort to display a handwritten text without ugly pixel steps.

The subject matter becomes more complex and the difference from analog painting becomes more significant with paintings, which use the digital media purposely to expand the potential of expression as in *Zerseher*, *Selfless* or *Mechanical Brushes*. In these cases the surface of the visual is connected with hidden text, which governs the presentation of the visual (and sound). This text is placed either in the picture or its frame, i.e. in the image-file or in the HTML-file in which the image-file is integrated. In the case of "Mechanical Brushes" the image-file is a Director-file; its code, only accessible within the Director-program, rules which brush moves on mouse contact, how fast they move, and which sound plays. The HTML file, on the other hand, includes the title and regulates the location and size of the image-file on the screen; in our case "width=640 height=480", aligned in the center of the table positioned at the top left corner.

Thus, the digital painting contains several layers of text governing its appearance on the screen, its performance in time and its reaction to user inputs. Since at the end everything is text (colors, line, sound, action, even nailing the brushes), the paradox of such an interactive audio-visual painting is that one can transmit it (its code) easily via letter or phone, meaning one can write or speak the painting. How should one not announce the end of traditional painting in view of such conditions? How should an artist – and real artists are always challenged to push the limits of their medium – not get excited in view of such new prospects and say goodbye to painting, with a Futuristic sensibility.

4. Artifacts, Software, Genres

"Mechanical Brushes" announces the goodbye to painting expressis verbis in its subtitle. However, Clauss undertakes such a goodbye already with the first piece he put in his digital gallery: "Simple Paint" - a paint program (see as well "Typed Paint"). Clauss does not offer the viewers a painting but a tool to create their own paintings via keyboard and mouse movement. Hence Clauss found the perfect way to render the shift from traditional to digital painting. Traditional painting is departed from by

symbolically tearing down the border between painter and viewer, suggesting the latter to be an artist himself. In the system of traditional painting, such a suggestion would have meant to hang brushes and paint into the frame as a kind of readymade although still intended to be used. Digital painting starts by taking back such an offer: the presented tools actually *are* the work of art; the real artist is not who is creative with these tools within the programmed algorithm but the one who is able to program the algorithm. The brush of the digital painting is not the mouse but, again, the code. Thus a second opposition accompanies the one I mentioned before: besides the tension between the pure idea giver and those who program this idea is a tension between the idea giver/realiser and those who use the programmed program.

The confusion perfectly expresses the way materials have changed in the shift from canvas to screen. The digital painter is not just somebody who uses a program to produce digital paintings; the digital painter is somebody who *creates* this program. Because if the material of digital painting is the code, the paint program is not material but the work of art itself, a product of a creative process of coding. This perspective is plausible in view of the narrow frame of actions Clauss's *Simple Paint* (as well as *Typed Paint*) offers to the "viewer-painter". One feels reminded of examples of combinatorial poetry or aleatoric music, where the reader or interpreter creates variations on the basis of the given frame of options. Such works certainly can be called "a machine for the production of variety of expression," as Espen Aarseth does with respect to cybertext[2]. On the other hand, such machines of combination can be seen as their own pieces of art whose specific quality is exactly this frame of options as with Quirinus Kuhlmann's combinatorical poem *Libes-Kuß* (1671), or *The Dicionary of the Khazars* by Milorad Pavic (1984), or Michael Joyce's hyperfiction *Afternoon. A Story* or Simon Biggs' text generator *The Great Wall of China*.[3] To consider and name such machines of combination as works of art themselves is not only common with regard to text combination. An example in the field of music is the *III. Pianosonata* by Pierre Boulez, which requires the interpreter to design the order, speed and volume of the offered modules. Why should a paint program, which allows the combination of several visual patterns, not equally be considered a work of art itself?

Admittedly, the border is fluid. If Clauss's paint program offered as much functionality and freedom of choice as *Photoshop* or *Director*, one would have difficulty understanding it as a work of art rather than a tool. *Photoshop*, *Director* or *Flash* are both the result of coding (and as such artifact itself) and a program for further coding (and as such instrument to create artifacts). *Simple Paint* on the other hand is not just a very simple program but very simply programmed as well. Clauss uses the built-in tools available in *Director* library, which is an easy act and may not justify understand *Simple Paint* as a product of a creative process of coding. However, rather than focussing on the complexity of the underlying

program one may understand *Simple Paint* as an installation, as a kind of readymade based on the clichés available in a meta program. The aim of this installation may be to question authorship with respect to such readymades. Even Clauss, who created his *Simple Paint* with *Director*, does not occupy the first place in the process of coding and creating. He works within the limits *Director*'s library and code language Lingo sets; his paint program cannot go further than the meta-program. And the creativity of the user of *Simple Paint* cannot pass this program's limits.

The end product relies on all involved levels of programming; it is the result of a more or less unavoidable, unreflected "vertical collaboration" in which the author of a level always has been the user of the previous level. Espen Aarseth describes this aspect with regard to Hypercard in 1997: "For the developers of Hypercard, I am a user. However, if I use Hypercard to write an application, I too am a developer-but on a lower level. If that application were a system for constructing, say language training lessons, my users would also be developers-on yet a lower level. And so on. The end users (the users of my users' language training lessons) might also be differentiated by their ability to change or subvert the software. If, on the other hand, I had access to Hypercard's code in C, I could reprogram Hypercard and become a developer on the highest level" (174) - one may add the 'highest level' is beyond C; it is machine language. Hypercard is a metaprogram to develop other programs: "The strength of metaprograms is that they take away most of the pain involved in programing an application from scratch; their weakness is that they limit the programer by presenting a predefined range of operations that the programer must use." (ibd.) Aarseth's conclusion about the nature of computer generated text equally holds true for digital painting: "Thus they are seldom the work of a single individual and are often comparable to a rule-based, premodern poetics, where the poet creates within a framework of clearly defined elements and constraints laid down by others." (ibd.)

Thus we enter the wide discussion of genre as a frame of semantic and syntactical parameters, which influence the artist's creation and the audience's expectations. Could one understand software as a similar frame? One can certainly say that the specific composition of a specific software or code generates a specific style. A genre is made up of narrative conventions, hence generating certain expectations and options for experiences (a novella has an unexpected incident; a western has horses and colts). In a similar way, a specific technology sets a frame of expectations and experiences. David Rokeby entitles one of his essays' "The Construction of Experience: Interface as Content" and takes hypermedia as an example, where the reader always experiences alternative navigation regardless of the actual content. Another example would be Rokeby's own *Very Nervous System*-software, which confronts the audience in different variations of a closed circuit installation always with the experience of an unclear interaction with a video

camera, computer and monitor/loudspeaker[4]. Though in all cases the content changes, the software constitutes a quasi genre-specific paradigm of performance and interaction. Rokeby refers in his essay to McLuhan's slogan "the medium is the message". Could one specify and state: *the technology is the framework* and: *the framework is a genre*?

The subject matter of genre demands a thorough, methodical discussion. Here, it was only to be raised as an issue with regard to Clauss's paint program *Simple Paint* as an artifact, instrument or genre. In the case of Clauss, the issue of genre is relevant also with respect to Adams's and Andrews's remarks about repetition and code similarities in several pieces. This remark triggers two questions: Is repetition pejorative? Does repetition constitute a genre?

The first question is answered by Clauss from the perspective of painting before its technological upgrading: "If I decided to display still images on flying puppet (just like paintings) would one say that it is repetitive just because they would all be still?" (private email) With regards to the dancing stick figures in "Legato", "Cellos", "Moontribe" or "Roundabout" there is indeed (with the exception perhaps of *Roundabout*) a repetition of the same paradigm with different music. Clauss does not call it a genre but a series - which of course is part of the creative process to test and exhaust a new form. However, in these cases repetition happens in both form (as a certain rhetoric of interaction: to bring the objects together hence initiating another action and sound) and content (the objects are always dancing figures). Therefore it may be appropriate to speak of a genre - the genre of user controlled dance choreography.

With regards to the second question, two examples may illuminate that code similarities do not automatically constitute the same experience. In "One Day on the Air" as well as in "Massacre" the mouse movement modifies image and sound. While in the former the user navigates through a range of radio stations, in the latter the user pushes an image of Mona Lisa over the screen. However, in this case the title (as well as the sound) indicates a much more dramatic action. The massacre takes place when the user pushes Mona Lisa off the scene. Soon one hears a cry. Moving back the cursor brings Mona Lisa onto the stage again now as Jesus Christ with the crown of thorns. Of course, Jesus Christ is nobody else than Mona Lisa with a beard.

The same code and the same rhetoric of interactions constitute a much more ironic and puzzling experience than in the radio piece. It starts with the title, which in both cases seems to be confirmed by the interaction happening: the radio day condensed in the mouse movement and the massacre instigated by the mouse movement. However, Mona Lisa's beard is an allusion to Duchamp that deconstructs title and interaction. The massacre, one feels reminded of, has, as an avantgardist iconoclasm, been happening for a long time. Da Vinci's *Mona Lisa* is a

productive example in this regard, if one thinks not only of Duchamps *L.H.O.O.Q.* from 1919 but also Fernand Légers *La Jaconde aux clès* from 1930 and Andy Warhols *Thirty are better than one* from 1963. The announced massacre by Clauss is just another step with the help of digital technology. We, the viewer, are neither really able to initiate such a massacre nor to stop it. We are actually the real victims, again and again, for Duchamp's disrespectful approach to Da Vinci's classical example of western culture was as much an attack of the contemporaries' expectations as Clauss's playful mocking of Duchamp's classical example of avantgard art is now.

The comparison between "One Day on the Air" and "Massacre" proves that different content gives different meaning to the same code or rhetoric of interaction. In many cases one can certainly subscribe to Rokeby's statement that "interface is content", while in many other cases one should rather state that the content specifies the interface.

5. Sign and Design

The nostalgic feeling in Clauss's Futuristic sentimentality is revealed in the fly (and the fly flap), which one hears if one spends enough time with "Mechanical Brushes". This seems to announce the ideal of a summerhouse atelier flooded with light in contrast to keyboard and mouse at the desk in a generic information-age office. On the other hand, the fly could also be understood as a quote from Pink Floyd's "Uma Guma," where the chase of a fly is to be heard from loudspeaker to loudspeaker thereby showing the new captivating possibilities of generically producing natural sound on a keyboard. In this view even the fly in Clauss's manifesto would embody the Futuristic gesture.

However, why not imagine the computer at the porch of a summerhouse target for one or two flies? The summit between fly and computer is equally possible as the summit of technology and idea in digital media, which only creates something like art. Whether the latter is as probable as the former still has to be proven. Nicolas Clauss, it seems, is a good guarantor. His "deceptively simple piece," as Adams appropriately describes "Mechanical Brushes", demonstrates the marriage of technical finesse and conceptual depth one hopes to see. This holds true for many pieces of his work as varying as "Sorcière" with the interactive burning of a witch and "Loup" with the bewildering and mystifying interactive film sequences in the attic, to name only two. Randy Adams conclusion is enthusiastic but fitting: "If you're looking for an artist whose work successfully embraces the computer medium - look no further."

The most fame Clauss gathered however, was for his ballet dancers. It is certainly a delight for the eye and ear reconnected to the fingertips. In "Legato" and "Cellos" only the user's skills keep all dancers moving and all sound files playing at once. The choreography happens spontaneously on the mouse bed: if the users do not try hard enough, they will, as in Cello, neither hear music nor see dancing. Such pieces fit into an aesthetic of interaction, which fulfills old utopian agendas of viewer involvement. Therefore such pieces are often applauded quite categorically. However, they also always risk combining physical activity with cognitive passivity. One feels involved, considers the piece fascinating and certainly will recommend it – but sometimes this is all one has to say about it. When Adams asks about the playfulness of many of his pieces Clauss declares:

> "Legato is cute, but far from me now. I was experimenting with tools and interactivity. But slowly, and especially for a year now, I have returned to things more in tune with my real concerns. Probably more foreboding as you say, more deep I hope &"

This statement may surprise. However, it responds to the flaw of the new medium, in which spectacle and contemplation wrestle for predominance.

Then again, Clauss, as a painter, is not only interested in concepts and contemplation. This becomes clear in the further course of the interview:

> "I like playing with ideas and concepts but I see them as bonus. I believe in the depth of matter, I believe art –for my concern, I respect other approaches– is something which takes you in another dimension far away from rational ideas, right into emotion, poetry, magic and probably some kind of truth. I like improvised music such as free jazz and find that people expect much more conceptual work from artists than from musicians."

This perspective, which avoids basing art on meaningful signs, reveals that "Clauss's attention to subtle detail," as Adams notes with respect to "Mechanical Brushes", does not aim to give deep meaning to all possible details. As the enquiry proves, in "Mechanical Brushes" Clauss did not use a significant quote from art history but an accidental text "only used [...] as a pictorial element with its pictorial qualities". One may bemoan such an approach, considered that a quote by say Cezanne or Picasso concerning new ways of painting would have strengthened the complexity and depth of the announced "goodbye to painting". However, it reminds us that not everything in art refers to something other than itself: what may be received as a sign sometimes is meant to serve only as design. It is reminiscent of the debate of formal aesthetics in the 1910's when the sign in painting (as well as literature)[5] was no longer meant to represent something else (a real object, a concept, a myth) in the production of meaning. The visual sign was considered self-valuable. It was no longer subordinated to a meaning-bearing role, but freed to the "pure visual". Such liberation from dependence on the figure, from illustration of

anything else than itself, makes painting similar to music, as Michel Seuphor notes (*Abstract Painting*, New York: Abrams 1965, 157f.). This seems to signify the break from conceptual work to musical improvisation, the step from rational ideas into "emotion, poetry, magic" (and thereby "probably some kind of truth").

In this light, the accidental text in "Mechanical Brushes" may be seen as return to the avantgarde aesthetics in painting, which once solved the crisis caused by photography's much better representational capability. What, however, would be the "pure visual"[6] in the realm of digital media? The text as pure pictorial element in an interactive work such as "Mechanical Brushes"? The code as self-sufficient presentation on the screen? The autonomous technical effect?

These questions open a new field of more general and more complex discussion, which is to be undertaken elsewhere. Here, it was only to point to this broader horizon – and to suggest we should understand the moving text in "Mechanical Brushes" as the aesthetic remainder above all explanation; like a fly meeting a computer on the kitchen table of a summerhouse.

Notes

1. An example from pop culture is Woody Allen's movie *The Purple Rose of Cairo*. In avant garde film, see Michael Snows' *Corpus Calossum*. A famous example from literature is John Barth's novella *Lost in the Funhouse* about the narrator Ambrose writing a story, called "Lost in the Funhouse," about the character Ambrose who is lost in the funhouse.

2. Espen Aarseth: *Cybertext. Perspectives on Ergodic Literature*. Baltimore und London: Johns Hopkins University Press: 1997, 3.

3. In Quirinus Kuhlmann's *Libes-Kuß*, the reader can choose between 50 words to complete each of the four verses; Milorad Pavic's *The Dicionary of the Khazars* refers, like a dictionary, in each chapter or entry to several other entries to continue reading; Michael Joyce's *Afternoon. A Story* offers several links to follow; the language machine in Simon Biggs' *The Great Wall of China* randomly creates an endless stream of syntactically correct but semantically meaningless sentences out of the words of Kafka's story *Beim Bau der Chinesischen Mauer*. (For variations and predecessors of aleatoric and performative art see Roberto Simanowski: Hypertext: Merkmale, Forschung, Poetik, in: dichtung-digital: 4/2002; for Simon Biggs' *The Great Wall of China* see Roberto Simanowski: Aleatorik als Aufklärung. Mauerbau und Babelturm in Simon Biggs' "Great Wall of

China", in: dichtung-digital 3/2002 and Technology, Aura, and the Self in New Media Art: Interview with Simon Biggs, in: dichtung-digital 3/2002.)

4. For a discussion of Rokeby's work see Very Nervous System and the Benefit of Inexact Control: Interview with David Rokeby in dichtung-digital 1/2003.

5. See Johanna Drucker: *The Visible Word. Experimental Typography and Modern Art, 1909-1923*, The University of Chicago Press 1994.

6. For the term pure visual see Johanna Drucker: *The Visible Word*, and Lambert Wiesing: *Die Sichtbarkeit des Bildes.Geschichte und Perspektiven der formalen Ästhetik*, Reinbek: Rowohlt 1997.