

Inke Arns

## **Faktura and Interface: Hlebnikov, Tesla and the Heavenly Data Traffic in Marko Peljhan's *makrolab* (1997-2007)**

### **From the pan-optic to the post-optic paradigm**

The exhibition *ctrl\_space*, which was shown at the Centre for Art and Media Technology ZKM in Karlsruhe, Germany, in 2000 – 2001<sup>1</sup>, put forward the problematic (and here polemically exaggerated) thesis, that surveillance nowadays only takes place if a camera is present – which is an out-dated definition if you bear in mind the different forms of 'data surveillance' already in practice today. As the environments in which we move today, increasingly consist of programmed architectures in which data flows circulate in a manner invisible to the eye, I would argue that our very visually saturated media age could simultaneously be termed as 'post-optical'. In contrast to 'pan-optical' (a notion which was favoured by the exhibition *ctrl\_space*), the term 'post-optical' denotes all digital data flows and programmed communication structures which can be at least as easily put under surveillance as any public space but which, however, only consist to a small extent of visual information.<sup>2</sup>

Many artistic and net activist projects which have examined the politics of electronic data spaces (such as the Internet) since the end of the 1990s aimed at making these invisible technical structures visible. A key strategy used by many media artists consists in creating and developing perceptible and haptic-visual surfaces and interfaces which make usually invisible data flows visible and perceptible. This is exactly what the Slovenian artist Marko Peljhan does in projects such as the mobile research station *makrolab* (1997-2007, cp. p. 160-167) I would like to introduce in this article. In this project, Peljhan not only examines the aesthetic and performative (and thus political) options of code<sup>3</sup>, but also explicitly considers the political dimensions of invisible data flows circulating in networks. In this he recurs to the un-realized (technological) utopias which the artistic avant-garde nurtured at the beginning of the 20th century. This applied media archaeology which concentrates mainly on the media theoretical and media technological ideas and utopias which the Russian or Eastern European historic avant-garde(s) advocated, wants to re-use this utopian potential as a corrective to current developments.

---

<sup>1</sup> Cat. *Ctrl\_Space. Rhetorics of Surveillance from Bentham to Big Brother*, ed. by Ursula Frohne, Thomas Y. Levin and Peter Weibel, ZKM Karlsruhe / Cambridge, MA 2002.

<sup>2</sup> Cf. Druckrey, Timothy: *Secreted Agents, Security Leaks, Immune Systems, Spore Wars ...* In: *Ctrl\_Space 2002*, pp. 150-157.

<sup>3</sup> The term 'code' refers in this text to a programme code, that is, all the text (or to be more specific: software) which makes a computer run for example. Cf. Inke Arns: *Inke Arns: Read\_me, run\_me, execute\_me. Code as Executable Text: Software Art and its Focus on Program Code as Performative Text*, in: Rudolf Frieling / Dieter Daniels (eds.), *Medien Kunst Netz 2: Thematische Schwerpunkte*, Springer Wien/New York 2005, pp. 197-207, [http://www.medienkunstnetz.de/themes/generative-tools/read\\_me/textsummary/](http://www.medienkunstnetz.de/themes/generative-tools/read_me/textsummary/)

**makrolab (1997-2007)**

Marko Peljhan's *makrolab*<sup>4</sup> for the first time was installed in 1997 at the exhibition *documenta X 1997* in Kassel, Germany. In the beginning of 2000 it operated in the Western coast of Australia, in early Summer 2002 in Scotland<sup>5</sup> and from June to December 2003 on the island of Campalto close to Venice. *makrolab* is a mobile and autonomous research, work and living unit, which resembles a space station. With the help of a diverse range of technical devices, it maps the "topography of signals"<sup>6</sup> in the whole electromagnetic spectrum – as a sort of private ECHELON system: The laboratory is equipped with broadcasting and receiving aerials that pick up signals at varying frequencies and record the data flows circulating there. These flows of data contain information from the most diverse sources: from private telephone conversations, satellite controlled navigation systems and military and economic communications. Apart from telecommunication, the project also investigates weather developments, electromagnetic systems and migration and navigation.

In Kassel, *makrolab* tapped into telephone conversations and other forms of communication which were routed via international INMARSAT telecommunication satellites. The American artist Brian Springer, who had worked for some time in the *makrolab* wrote later: "We approached the sky above Lutterberg as a living library [...] out of the shelves of which voices, images and data communication flew towards us."<sup>7</sup> It was, for example, investigated who used the INMARSAT satellites and for what purposes, "how specific power structures [...] made use of technology and what was hidden in this"<sup>8</sup> and the vulnerability of private telecommunication, too. In this sense, the *makrolab* is at the same time an opaque faktura and an interface to 'abstract' information spaces. The objective of the *makrolab* as Johannes Birringer puts it, is "to transcribe invisible and micro-environmental activities, to render and document found data which can be sensed in the abstract areas of the electromagnetic spectrum only via suitable interfaces and specialized knowledge."<sup>9</sup> *makrolab* which has been planned as a ten year research project, is installed far away from large cities or exhibitions at as remote locations as possible (such as Lutterberg near Kassel, Germany, Rottneest Island just off the Western coast of Australia, Athol Estates in Scotland) and consequently should be completed in 2007 with an installation in Antarctica. Peljhan pursues a strategy in this project which he calls "insulation/isolation"<sup>10</sup>. This consists of a combination of complete physical isolation and, at the same time, total technological interconnectedness to the exterior world which seems to be a radical implementation of McLuhan's

<sup>4</sup> *makrolab*, <http://makrolab.ljudmila.org>

<sup>5</sup> Cp. cat. *makrolab*, ed. by The Arts Catalyst and Zavod Projekt Atol, London 2003.

<sup>6</sup> Daniels, Dieter, in: *cITY. Internationaler Medienkunstpreis 2000*, SWF Baden Baden, Karlsruhe 2000, pp. 94-97, here: p. 95.

<sup>7</sup> Quotation according to Baumgärtel, Tilman: Kunst als Lauschangriff. Ein Gespräch mit Marko Peljhan über dessen Projekt Makrolab, in: *Telepolis*, 6.10.1998 <http://www.heise.de/tp/deutsch/special/info/6299/1.html>

<sup>8</sup> Peljhan, Marko, in: Baumgärtel, Tilman, [*net.art*]. *Materialien zur Netzkunst*, Nürnberg 1999, pp. 136-141, here: p. 138.

<sup>9</sup> Birringer, Johannes: Makrolab: A Heterotopia, in: *PAJ: A Journal of Performance and Art* 60 (September 1998), p. 66-75.

[http://muse.jhu.edu/journals/performing\\_arts\\_journal/toc/paj20.3.html](http://muse.jhu.edu/journals/performing_arts_journal/toc/paj20.3.html)

<sup>10</sup> Peljhan, Marko: *makrolab* | lecture 310897. the *makrolab* lecture in the 100 days program, presentation, *documenta X*, Kassel 1997.

<http://makrolab.ljudmila.org/reports/marko.html>

prosthesis model<sup>11</sup> and which should allow the *makrolab*'s crew independence from and reflection upon social conditions (which are to a large extent conveyed by the media). The marked and declared withdrawal from the spectacle or from the *society of the spectacle*<sup>12</sup> should open a space for calm and reflection which offers a bird's eye view onto the topography of signals which circulate among the centres. Furthermore, this 'insulation/isolation' should also create the conditions for a (more) intensive communication among crew members. Peljhan's thesis is, that few individuals in such intense isolation will produce more "evolutionary code" than large political movements.<sup>13</sup> The elite model of a small group of researchers described here remains strangely ambivalent because of its role model function to society as a whole. Because of the 'insulation/isolation' on the micro-level of the *makrolab*, however, a specific subjectivity, an "affective sociality"<sup>14</sup> develops which differentiates the *makrolab* from most other projects which link science and the arts, as Kodwo Eshun puts it.

Peljhan understands evolutionary code as the experimental investigation of strategies and behaviours in contemporary and future societies which are initially tested in the laboratory situation of the *makrolab* in order to be later implemented in real, everyday life. This is exactly where the potential of the *makrolab* lies. It is all about initially becoming aware of the immaterial data space which overlays the material space like a new dimension. The second step consists of clarifying the antagonistic power interests existing in this data sphere including the strategies of collecting data, of surveillance and of control. The *makrolab* – and this is the third step – develops a tactic of 'counter-surveillance' against these strategies. This tactic consists in a turning-around or a democratisation of such strategies (as they are used in ECHELON for example), which can normally only be pursued by institutional, governmental or business entities.

Passing on any information obtained in such a way is, however, not legal. Peljhan and his colleagues are therefore still looking for legal opportunities to bring this information to the general public in order to inform them about the structure and content of this usually invisible information space. Peljhan and his fellow researchers would like to provide the public with the tactical, technological and legal means to develop their own understanding of surveillance and control methods and possibilities which normally are restricted to military or government bodies or large global corporations or media conglomerates.

### **Faktura and Interface: LADOMIR-ΦAKTYPA (LADOMIR-FAKTURA)**

*makrolab* is part of a project series which Marko Peljhan and the project Atol have been implementing since 1994 under the title *LADOMIR-ΦAKTYPA*. *LADOMIR-ΦAKTYPA* relates, as Peljhan says, to "findings derived from the works of Velimir Hlebnikov, his mathematical works on time and history, his linguistic research [...] as well as his poems and literary works."<sup>15</sup> Velimir Hlebnikov

<sup>11</sup> Marshall McLuhan (1911-1980) considered media to be extensions of the human being. Media (or generally: apparatus) were externalised sense organs the human being had separated from (self amputation). The media thus turned into prostheses of human perception and action. Cp. McLuhan, Marshall: *Understanding Media: The Extensions of Man*, 1964.

<sup>12</sup> Cp. Debord, Guy: *Die Gesellschaft des Spektakels*, Berlin 1996.

<sup>13</sup> Peljhan, *makrolab* lecture 1997.

<sup>14</sup> Eshun, Kodwo: *Makrolab's Twin Imperatives and Their Children Too*, in: *Makrolab* 2003, pp. 6-14, here: p. 7.

<sup>15</sup> Cp. Peljhan in: *Cat. ostranenie 95. 2. Internationales Video-Forum an der Stiftung Bauhaus Dessau*, Dessau 1995, p. 324.

(1885–1922) was one of the most important representatives of Russian futurism.<sup>16</sup> The project's title contains a direct allusion to the poem *Ladmir* by Hlebnikov which was published in 1920, which according to Hlebnikov describes the universal empire of the future<sup>17</sup>. It also indicates one of the main artistic techniques which Russian formalists<sup>18</sup> had defined: *faktura*. Peljhan himself uses the formalistic term of *faktura* "as a technical designation of the method of work, which is struggling to give a sensorial and tactile quality to abstract elements in art and science."<sup>19</sup> This *faktura* is materialising for the first time in the form of the *makrolab*: here, it describes a method by which Peljhan creates tactile, sensually perceptible surfaces for invisible data spaces through which immaterial data flows pass. In the following, I would like to link the formalistic terms of 'faktura' and 'poverchnost' (surface) to the term interface.

The term 'faktura' or 'material structure' describes, as the Slavist Aage Hansen-Löve writes, the "totality of all those material and plastic characteristics of the picture surface which in Cubo-futurism no longer mimetically simulates the space but has been reified to an independent three dimensional object ('relief') of haptic perception (tactile sense)."<sup>20</sup> The historic avant-garde, and pre-revolutionary Russian futurism in particular, aimed at eliminating illusionism in painting (or literature), and thus the eradication of the referential or symbolic character of the picture or the word. The – explicitly non-illustrative and radically de-semiotized – painting or word artefact which was reduced to its pure materiality thus gained more reality as a 'word having a value in itself' in the eyes of the futurists. This radical de-semiotization led to an increased perception of the material and an increased attention to the 'surface quality' of the 'material artefact'. The *faktura* which Il'ja Zdanevič described as "surface condition of a canvas"<sup>21</sup> and Vladimir Markov as "material sound" or "noise"<sup>22</sup>

<sup>16</sup> Russian (Cubo-)Futurism is radically different from its Italian counterpart. Russian Futurists, whose main representatives were the painter David Burljuk, the poets Aleksej Kručnych, Velimir Hlebnikov and Vladimir Majakovskij, did not share the enthusiasm of the Italian futurists for technology and modernity. They were more interested in linguistic research and linguistic constructions. Cp. Günther, Hans: *Befreite Worte und Sternensprache. Der italienische und der russische Futurismus*, in: *Literarische Moderne. Europäische Literatur im 19. und 20. Jahrhundert*, ed. by R. Grimminger, J. Murašov, J. Stückrath, Reinbek 1995, pp. 284-313.

<sup>17</sup> Combination of 'lad' (old Russian for harmony, creature) and 'mir' (peace, world, universe) – „both these parts are conjoined by the vowel O, for which Hlebnikov has devised the meaning of THE LETTER THAT INCREASES SIZE”, Peljhan, *makrolab* lecture 1997.

<sup>18</sup> Russian Formalism or the so-called Formal School to which literary theorists like Viktor Šklovskij, Boris Ejchenbaum, Jurij Tynjanov and Roman Jakobson belonged, existed between the mid of the 1910s to the end of the 1920s. The Formal School turned into the germ cell of modern linguistic and literature theory of the twenties and had a particular and lasting impact on French Structuralism.

<sup>19</sup> Peljhan, Marko: *Information on Pact, Collaborators and Projekt Atol*, in: *Projekt Atol* (ed.): *LADOMIR-ФАКТУРА: Četrta površina – površina stika! Ritmično-scenska podobe. Materiali [LADOMIR-ФАКТУРА: Fourth surface - the surface of contact! Rhythmical-scenic structure. Writings]*, Ljubljana 1996, p. 16.

<sup>20</sup> Hansen-Löve, Aage: *Faktur/Gemachtheit*, in: *Glossarium der russischen Avantgarde*, ed. by Flaker, Aleksandar, Vienna/Graz 1989, p. 212-219, here p. 212.

<sup>21</sup> Zdanevič, Il'ja: *Nat. Gončarova. M. Larionov*, Moskva 1913. Quotation according to Hansen-Löve 1989, p. 212. The author and dramatist Il'ja Zdanevič was member of the futurist group 41° which existed in Tiflis between 1917 and 1920. The group 41° specifically addressed the theoretical and practical development of the 'Zaum', a 'transrational' artificial language located 'behind the intellect' (*za um*).

thus generates firstly an intensification of the general sensual perception, secondly it generates an alienation effect of "*denudation*" or "*uncovering*" of the process which turns the overall structure of this artwork into the object of reflection<sup>23</sup>.

What comes into focus now is the connection between the facturated 'speaking' surface and the concept of the (technical-artistic) interface, as it has been developed by Marko Peljhan in his *makrolab*. I would argue that both, the faktura and the *makrolab*-interface, make transparency or invisibility impossible by making transparent matter visible. Whereas the transparent and illusion generating application of colour in academic painting corresponds to "*the hiding of the procedure, of materiality*" and thus to a reduction of the sign structure to a mere "*means to serve the purpose*" of generating a reference<sup>24</sup>, the (Cubo-)futuristic 'surfaces' which are stacked upon each other and put into a collage each imply an *own* reference, referring to itself.<sup>25</sup> "*The whole work of the artist – the poet as well as the painter – is mainly reduced to,*" as Viktor Šklovskij wrote in 1923, "*creating a continuous thing which can be felt at any spot, a 'facturated' thing.*"<sup>26</sup> Such a thing which can be 'felt at any spot', such a 'facturated thing' turns transparent layers and invisible structures opaque. In an era of space shaped by information and signals which withdraw from sensual perception such a faktura might be the only possibility to translate signals of one system into signals which can be interpreted by another system.<sup>27</sup> In contrast to the conventional understanding of the technical term interface, such a 'facturated interface' does not stress the aspect of functionality but it creates obstacles for the eyes and other human senses. Thus it corresponds to the formalistic procedure of more complex form and estrangement by which, as Šklovskij says, the arts break through the automation of perception.<sup>28</sup> This movement of de-automation leads, as we could conclude from Šklovskij, not only from recognition

---

<sup>22</sup> Markov, Vladimir: *Principy tvorčestva v plastičeskich iskusstvach. Faktura*. [*Principles of Creation in the Plastic Arts. The Faktura*], Petersburg 1914. Quotation according to Hansen-Löve 1989, p. 213. Vladimir Markov's *Russian Futurism: A History*, Berkeley, CA 1968, which he wrote in the West, is one of the first treaties on Russian Formalism which he had still experienced in Russia.

<sup>23</sup> Cp. Hansen-Löve 1989, p. 213.

<sup>24</sup> Cp. Hansen-Löve 1989, p. 214.

<sup>25</sup> Hansen-Löve refers here to I. Aksenov's 'Process of the Sliding Surface': Aksenov, I.A.: *Pikasso i okrestnosti*, Moskva 1917. Quotation according to Hansen-Löve 1989, p. 213.

<sup>26</sup> Šklovskij, Viktor: O fature i kontr-rel'efach [On faktura and contr-reliefs], in: *Žižn' iskusstva*, No. 587. 1923. Quotation according to Hansen-Löve 1989, p. 214. Viktor Borisovič Sklovskij (1893-1984) was a Russian literary theorist and author. In 1916 he was co-founder of the society for the study of poetic language (OPOJAZ), one of the germ cells of Russian Formalism of which Šklovskij was a main representative. Cp. also Striedter, Jurij (Hg.): *Texte der russischen Formalisten*, 2 Vols., Munich 1969; Hansen-Löve, Aage: *Der russische Formalismus*, Vienna 1996 [1978].

<sup>27</sup> This corresponds to a very general definition of the term 'Interface', compare American National Standard for Telecommunications: *Telecom Glossary 2000* <http://www.atis.org/tg2k/>: "1. In a system, a shared boundary, *i.e.*, the boundary between two subsystems or two devices. 2. A shared boundary between two functional units, defined by specific attributes, such as functional characteristics, common physical interconnection characteristics, and signal characteristics. 3. A point of communication between two or more processes, persons, or other physical entities. 4. A point of interconnection between user terminal equipment and commercial communications facilities."

<sup>28</sup> Cp. Šklovskij, Viktor: *Kunst als Verfahren*, in: Striedter, Jurij (ed.): *Russischer Formalismus*, Munich 1967.

to seeing but also from a state of transparency to a factuated visibility and a sensual perception of otherwise unintelligible data spaces.

### **Peljhan/Hlebnikov: „An Uncannily Contemporary Vision“**

Velimir Hlebnikov describes a future scenario in *Ladomir* (1920) which is created by wars, the destruction of an old order and the creation of a new order. Hlebnikov's "*science of the individual*", by which he understands a form of synaesthesia of abstract scientific and tactile-sensual processes, is a training and test stage for getting in contact with this newly shaped environment. According to Hlebnikov, wireless radio and wireless communication play an important role in the discovery of new time and space concepts. The individual has to gain experiences in this new spatial time and has to reflect in a scientific manner on the changing constellation of harmony (old Russian *lad*) and peace/world (Russian *mir*).<sup>29</sup> For this purpose, the strategy of 'insulation/isolation' is of core importance, as Marko Peljhan wrote in 1994<sup>30</sup>. The aim is to equip the individual with modern interfaces in a situation of 'intense isolation' which allow him to orient himself in spaces which are increasingly shaped by immaterial and informational structures. Johannes Birringer summarizes: "*For the exploration of evolutionary social conditions in a world of increasingly complex intelligence systems, the individual needs to make appropriate physical, psychic and material preparations for survival in post-territorial and perhaps ungovernable information societies.*"<sup>31</sup>

In his research into Hlebnikov, Marko Peljhan wants to underline the core terminology and the core ideas of the Russian futurist. Among these are Hlebnikov stressing the positive impact of the use of new media as for example the radio as global conscience<sup>32</sup>, underlining the importance of the dimension of time or the 'time axis' for a future spatial-temporal global order<sup>33</sup> or his idea of a 'stellar language' which can also be understood as the conception of a global medium (see below). Hlebnikov's importance for Peljhan's retro-utopian position lies, as Lisa Haskel says, in the author's almost uncanny actuality.<sup>34</sup>

In *Lebedija Buduščego*, Hlebnikov speaks of so-called 'skybooks' which he describes as high white walls or clouds onto which the latest news are projected and which thus remind of "*large books opened against the dark sky*". "*News flashes about Planet Earth, the activities of that great union of worker's*

<sup>29</sup> Cp. Birringer 1998.

<sup>30</sup> Peljhan, Marko: *Science of the Individual – Mapping of Ladomir*, 1994, Re-print in: Peljhan, Marko: makrolab. In: *Politics-Poetics: das Buch zur documenta X*, Ostfildern 1997, pp. 784-785.

<sup>31</sup> Birringer 1998.

<sup>32</sup> Hlebnikov, Velimir: *The Radio of the Future [1921]*, in: *Collected Works of Velimir Khlebnikov*, Vol. I: Letters and Theoretical Writings, ed. by Charlotte Douglas, Cambridge, MA, 1987, pp. 392-396.

<sup>33</sup> Apart from the *Tables of Destiny* (1922) in which Hlebnikov describes how he discovered the "*pure laws of time*" in Baku in 1920, especially the *proposals* of the 'presidents of Planet Earth' (1914/1916) are of interest. Hlebnikov proposes here, for example, to replace all measurement units by temporal measures "*to usher in everywhere, instead of the concept of space, the concept of time*" and "*to establish recognized classes of geagogues and superstates*" (Hlebnikov 1987, 357-361). And, he declared in 1917 in the *Appeal by the Presidents of Planet Earth*, that the "*government of Planet Earth*" had declared the old and deteriorated territorial state a thing of the past and would only recognize the "*pure laws of time*" (Hlebnikov 1987, 333-335).

<sup>34</sup> Cp. Haskel, Lisa: *Pretty Good Pirates*, in: *Mute* No. 9, 1998  
<http://makrolab.ljudmila.org/reports/haskel.htm>

*communes known as the United Encampments of Asia, poetry and the instantaneous inspirations of members, breakthroughs in science, notifications for relatives and next of kin, directives from the soviets*<sup>35</sup> are projected onto the sky. Marko Peljhan and Brian Springer use Hlebnikov's poetic term of 'skybooks' as a metaphor for the immaterial world of signals which was only in development during Hlebnikov's times. A metaphor for invisible radio connections, which run nowadays via military and civil communication satellites through the sky and the 'opened pages' of which, according to Peljhan, should not only be legible to intelligence services.

Hlebnikov was not only convinced that with the help of the laws of time which he deduced from history, one would be capable of predicting the future<sup>36</sup>, but he devoted the time from 1915 to his early death in 1922 to the construction of a universal language, the so-called 'stellar language'<sup>37</sup>, which "*links spaces and movements [...] (and does not do what language had done until then: that is separating)*"<sup>38</sup>. It thus corresponds to the utopia of understanding between nations which was popular at the beginning of the 20<sup>th</sup> century<sup>39</sup> and which was mainly propagated by the new medium radio.<sup>40</sup>

It is the creation of such a comprehensive and holistic system which makes Hlebnikov's works so interesting for Peljhan. For him the development of such a complex and interdisciplinary system is nowadays the only possible form to develop appropriate 'sensorial organs' or metabolic/machinic interfaces appropriate for the new im/material communication spaces. In this, Peljhan does not want to simply 'apply' or implement Hlebnikov's idea; it is his interdisciplinary way of thinking which makes him so appropriate again today, in a time of renewed 'tectonic movements'.

### **Radio-Visions: Nikola Teslas „World-System“**

A number of joint performances, which Marko Peljhan and Carsten Nicolai (and other changing colleagues) staged since 1997, focussed on the ideas of the Serbian engineer and inventor Nikola Tesla (1856-1943), who emigrated to the United States in 1884, and, around the year 1900, while there, turned into the "*ultimate visionary crank*"<sup>41</sup>. As Tesla was the first one to propagate the idea of a global wireless transmission/communication, he recently is being increasingly

<sup>35</sup> Hlebnikov, Velimir: *Lebedija* [Swanland in the Future, 1915/1928], in: Hlebnikov 1987, pp. 344-346. here p. 344.

<sup>36</sup> Cp. Urban, Peter: Epilogue, in: Hlebnikov 1985, pp. 606-642, here: p. 624. In the year 1927, twelve years after Hlebnikov's *Lebedija Buduščego*, László Moholy-Nagy's conception of a "*house-pinakothek*" emerged in which he anticipated a "*service of radio pictures*" which was supposed to succeed in globally spreading pictures and "*pervasive, colourful creations*" and thus to contribute to the "*levelling and raising of the general state of mankind*". Cp. Moholy-Nagy, László: *Haus-Pinakothek*, in: Moholy-Nagy, László: *Malerei Fotografie Film*. Bauhausbücher Volume 8. Dessau 1927, p. 23.

<sup>37</sup> Cp. with this respect Oraić-Tolić, Dubravka: Die Sternensprache, in: *Glossarium der russischen Avantgarde*, ed. by Flaker, Aleksandar, Graz/Vienna 1989, p. 448-455.

<sup>38</sup> Urban 1985, p. 623.

<sup>39</sup> Cp. Einstein, Albert: Die wahre Aufgabe des Rundfunks. Einzigartige Möglichkeiten zur Völkerverständigung, in: *Beiträge zur Geschichte des Rundfunks*, 3/1978, 12. Jg., p. 89f.

<sup>40</sup> Cp. Daniels, Dieter: *Kunst als Sendung. Von der Telegrafie zum Internet*, Munich 2002.

<sup>41</sup> Davis, Erik: *Techgnosis. Myth, Magic and Mysticism in the Age of Information*, New York 1998, p. 68-75, here p. 69.

rediscovered in the context of media art projects.<sup>42</sup> Tesla received official recognition in the area of high voltage technology and for discovering alternating current which conquered the world once it had succeeded against Edison's direct current. Apart from this, Tesla had started very early, that is from approximately 1893, to do experiments in radio technology. From these activities stems the ongoing debate whether he or Marconi should be given the recognition for the invention of the radio.

The first two joint performances by Peljhan and Nicolai, *Wardenclyffe Situation No. 1* and *No. 2* took place in 1997.<sup>43</sup> The titles of these performances create a direct link to Tesla's 'World-System' or to his never completed world-energy-transmission tower in Wardenclyffe, Long Island (1900-1917). Frank Bretschneider describes Tesla's idea of the 'world-system' and his experimental research on a global wireless (and at the same time publicly accessible) transmission of energy and information as "visionary".<sup>44</sup> During the performances of approx. 45 minutes, specifically designed aerials were used (in Dessau, several aerials of a length of seven to eight meters, which consisted of wires fixed above the auditorium) to transmit and receive signals which were at the time passing this area. These were signals from satellites, radio signals and other wireless transmissions which were analysed in real time. On the stage, which resembled a physical experimentation unit with its three Tesla transformers, additional acoustic and electromagnetic signals were generated which altered the signals received and which were then re-transmitted in their altered form to the ether. The objective of this was not, as Bretschneider stressed, to improve the aesthetics of the signals received, but to analyse and highlight the signal structure.

The performances which were staged in the following years at different locations represent a continuous further development of the initial *Wardenclyffe* concept. *Solar: A Wardenclyffe Project* (Linz, 1998) and *Signal-Sever!*<sup>45</sup> also consisted of the stages receiving, modulating and re-transmitting – but they lasted between eight to ten hours from dusk until dawn of the following day. It is certainly thanks to the organizers of the Riga RIXC media laboratory that not only new and self-constructed technology could be used for the premiere of *Signal-Sever!* but also the large radio telescope which had been exclusively used by the Red Army until 1992 (diameter: 32m) as well as the shortwave antenna of the International Ventspils Radio Astronomy Centre (VIRAC) in Irbene, Latvia. However, this also indicates Peljhans' great interest in changing the use of and converting military technology to a civil, publicly accessible means of communication.

---

<sup>42</sup> Cp. PROJECT:BROADCASTING dedicated to Nikola TESLA, 2001/2002, <http://projectbroadcasting.mi2.hr>. On Tesla's influence on popular culture compare the film by: Baldwin, Craig: *Spectres of the Spectrum*, film script, 2000 [typescript].

<sup>43</sup> These are co-productions between the project Atol (Marko Peljhan and Aljoša Abrahamsberg, Ljubljana/SLO) and Rastermusic/Noton - Archiv für Ton und Nichtton (Carsten Nicolai, Frank Bretschneider, Olaf Bender, Chemnitz/D) respectively, <http://www.rastermusic.com/>. *Wardenclyffe Situation No. 3* took place at V2 in Rotterdam in April 1998.

<sup>44</sup> Bretschneider, Frank: Raster Music. A Profile, in: *angbase 2*, Spring 1998, <http://www.angbase.com/angbase2/raster.html>

<sup>45</sup> *Signal-Sever!* was performed at the following locations: 09/2001 in Riga (Latvia), 03/2002 in Kwangju (Korea), 04/2002 in Glasgow (Scotland) and 09/2002 in Ljubljana (Slovenia). Cp. rx:tx (09/2002), <http://www.rx-tx.org/signal.html>

## Retro-Utopism

*makrolab* is part of an artistic approach which I call retro-utopism.<sup>46</sup> By this, I understand the artistic examination of the historic avant-garde, which from a retrospective and media archaeological view assesses the avant-garde's utopian vision with respect to its inherent, yet never actualized media technological potentialities. These unrealized (technological) utopias of the historical avant-garde are, according to Dieter Daniels also the reverse of the anticipations of the historic avant-garde which have been realised (in the mass media). Retro-utopism is the result and part of a comprehensive paradigm shift in the artistic avant-garde's perception in Eastern Europe which started at the beginning of the 1990s and which mainly manifests itself in a new relationship to utopia. Whereas these historic technological utopias initially seemed to be a fascinating object of media history, their importance for current developments becomes clear on closer inspection. The retro-utopian recourse to and the "*movement in the deep times of media-technological thinking and operating*"<sup>47</sup> thus often serves as a corrective for current developments.

---

<sup>46</sup> Cp. Arns, Inke: *Objects in the mirror may be closer than they appear! Die Avantgarde im Rückspiegel. Zum Paradigmenwechsel der künstlerischen Avantgarderezeption in (Ex-)Jugoslawien und Russland von den 1980er Jahren bis in die Gegenwart*. PhD thesis. Humboldt University Berlin 2004, <http://edoc.hu-berlin.de/dissertationen/arns-inke-2004-02-20/PDF/Arns.pdf>

<sup>47</sup> Zielinski, Siegfried: *Archäologie der Medien. Zur Tiefenzeit des technischen Hörens und Sehens*, Reinbek 2002, p. 320.