Acta Univ. Sapientiae, Film and Media Studies, 9 (2014) 141–154

10.1515/ausfm-2015-0007

Rheo: Japanese Sound Art Interrogating Digital Mediality

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Abstract. The article asks in what ways the Japanese sound artist, Ryoichi Kurokawa's audiovisual installation, *Rheo: 5 Horisonz* (2010), is "digital." Using professor Lars Elleström's concept of "mediality," the main claim in this article is that *Rheo* not only uses digital technology but also interrogates digital mediality as such. This argument is pursued in an analysis of *Rheo* that draws in various descriptions of digital media by N. Catherine Hayles, Lev Manovic, Bolter and Grusin among other. The article will show how the critical potential in *Rheo* is directed both towards digital media as a language (Meyrowitz) (or a place for representation) and towards the digital as a milieu (Meyrowitz) or as our culture (Gere). The overall goal of the article is not just analyse this singular artwork, but also to show how sound art can contribute to our understanding of our own contemporary culture as a digital culture.

Keywords: digital aesthetics, sound art, audiovisual installations, mediality, glitch.

In 2010 the Japanese sound artist Ryoichi Kurokawa (born in 1978)[1] received the prestigious Ars Electronica Prize in the category Digital Music and Sound Art for his audiovisual installation *Rheo: 5 Horizons* (from here on just "Rheo"). The installation consists of an eight minute long video loop that is projected onto five large plasma-displays.[2] On these five screens we see a mesmerizing combination of field recordings and HD pictures of nature, juxtaposed with digitally-crafted, vertiginous patterns. Each display is connected to a small loudspeaker and has its own audio and visual output. The sounds and movements on the individual screens are, however, highly synchronized and function as one unit. For instance patterns often move across the five screens [Fig. 2].

1 See more information on the artist's website: *http://www.ryoichikurokawa.com/*. Last accessed 24. 09. 2014.

2 Samples from the video can be found online. E.g. http://vimeo.com/31319154. Last accessed 24. 09. 2014.

Why is *Rheo* a particularly interesting case for a festival for "art, technology and culture?"[3] And why is this a particularly interesting artwork in the category digital music and sound art? An obvious answer is that we in *Rheo* see something that is only possible due to digital technology: for instance the extremely tight syncronisation of the audio and visual elements is an overwhelming effect that is only possible due to digital technology. Furthermore the main part of the video-loop consists of visual patterns and sounds that could never be made without the use of digital software. This is for instance seen in the way the images are dissolved into layers or the use of glitches in both images and sounds. However, most of the music, the films, and the audio-visual imagery we are surrounded by today is already deeply depended on digital technology and could not be made using analogue equipment. Just think of the well-defined, compressed soundscape of the Hi-Fi recording on an average pop-song. So why is *Rheo* a particularly digital artwork? In this article I will argue that this installation is not only dependent on – or using the possibilities of – digital technology. It also interrogates and exposes the characteristics of digital media as such. It is therefore an artwork that "talks about" digital, contemporary culture.

Digital Mediality

In more recent research on intermediality there has been an increasing focus on the specificity of media, their "mediality." In the Swedish professor Lars Elleström's analysis of "mediality" this is not defined as a prescriptive concept (Elleström, 2010). His argument is not within the discourse of a modernistic, puristic paradigm. Rather his goal is to establish a more descriptive vocabulary concerning how we describe or define the specific way in which a media is a media. Using Elleström's vocabulary we can talk about the "medianess" or "mediality" of digital media, without talking about the specific gadgets or the technology. Using Meyrowitz's distinctions between different understandings of what a media is one could perhaps claim that Elleström offers a more refined way of talking about "media as language" (Meyrowitz, 1997).

In the following analysis the strategy is to claim that what scholars such as Lev Manovich, Jay David Bolter, and Richard Grusin, and N. Katherine Hayles are describing when they talk about "immediacy" "hypermediacy" (Bolter and Grusin 2002), the "cultural layer versus the computer layer" (Manovich 2001,

3 This is how The Ars Electronica festival describes it self at its homepage. *http://www.aec.at/about/en/*. Last accesed 01. 09. 2014.

43), or the "flickering signifiers" (Hayles 1993, 77) is *digital mediality.* I will analyse how these concepts relate to Kurokawas installation in order to pursue my argument that this audiovisual installation is in fact interrogating digital mediality.

However, during this analysis I will also show how *Rheo*, in its investigation of digital mediality, seems to transgress this understanding of media as language and instead unfolds a more broad investigation of "media as a milieu," which is Meyrowitz's third category (Meyrowitz 1997). In this part of the analysis I will also include Mark B. N. Hansen's discussion of what the computer is to us today. He argues that Manovich's description of how the computer has changed from a "number crunching machine" to a "media synthesizer" needs to be expanded because the computer today is more than a media synthesizer. Today computer rather combines or connects human experiences (Hansen 2009). I find this argument interesting because it shows the limits of an analysis that focuses very specific on Elleström's level of mediality. In conclusion, my article is not just about Kurokawa's installation but also serves as an example of about how we analyse art works that question digital technology.

A key concept in Elleström's description of mediality is that each mediality is composed of four basic modalities (Elleström 2010): the semiotic, the sensoric, the tempo-spatial, and the material. I have chosen to structure my analysis according to these modalities. In the literature on sound art the question of the sensory modes is very common, e.g. Helga de la Motte-Haber's seminal book on sound art or *Klangkunst* (Motte-Haber 1999), where she describes sound art as an art form to be both seen and heard. The tempo-spatial modality is also well-described in Motte-Haber's analysis because she deals specifically with sound installations and sound sculptures, where the installations and sculptures are given an explicit temporal dimension due to the sound. The question of materiality is also very present in the literature on sound art. Here the focus is primarily on the materiality of sound (Labelle 2007, Voegelin 2010). The semiotic modality is, however, neglected. Or rather, it is consciously marginalized because sound art is described as an art form that escapes representation and semiotics (Labelle 2007). This is in many texts seen as the main quality of sound art. However, in the analysis of Rheo I argue that the semiotic dimension is important. It is, however, quite easy to import analytical tools from either digital poetry of general thought regarding digital remediation. All in all, my analytical approach is in its core intermedial and interdisciplinary.

The Semotic Modality: Signs and Representation

During the last decade, there has been a growing discourse on the use of glitches, failures, microsound, and such in sound art. The artist and writer Kim Cascone's essay *The Aesthetics of Failiure: Post-Digital Tendencies in Contemporary Computer Music* (2002) is one if the defining texts on this topic (Demers 2010). Cascone explains that while digital technology in more conventional musical productions aims to conceal itself, the use of malfunctions such as glitches and microsounds are essential to this new "post-digital" aesthetics (Cascone 2002). The main conclusion in Cascone's essay is that the use of glitches makes us aware of that which we normally perceive as the *background* when we interact with media, and in particular digital media.[4] In that sense the use of glitch is a way of "questioning technology" because it leaves a gap in the hermeneutical process (Cascone, 2002).

In *Rheo* there is an extended use of malfunctions and glitches in both sound and image. However, *Rheo* seems to be something else than an "aesthetics of failure," because the main effect of the disturbances of the images in *Rheo* is not only that gaps are inserted in the hermeneutical process, but rather that our attention is being swirled around in a roller-coaster ride: from the imagery to the processuality of software codings, from the represented space in the image to movements on the screen, to movements in the actual space in which the large panels are exhibited.

When we look at the naturalistic still-images of nature on the five large screens in *Rheo* we can to see "through" the screens and experience the pictures, the colors, the compositions, the tactile structures in the depicted materials, the contents and the fictional space of the barren landscapes, etc. This is what Bolter and Grusin call the "logic of immediacy" (Botler and Grusin 2002).

In *Rheo* this "logic of immediacy" is disturbed as the still-images are being transfigured and distorted by digital manipulation. Our gaze is forced away from the representational image, with its Euclidian space, and instead focused on the movements of the patterns on the screens. We now rather look at the screens as a hypermediated space. Following Bolter and Grusin's vocabulary we can say that there is a shift from immediacy to "hypermediacy." Bolter and Grusin explain that: "If the logic of immediacy leads one either to erase or to render automatic the act of representation, the logic of hypermediacy acknowledges multiple acts of representation and makes them visible" (Bolter and Grusin 2002,

4 Although Cascone also mentions glitches in a piece of paper, his main concern is the use of failures in computer music.

33). With the many shifts from images to patterns it seems as though immediacy in *Rheo* becomes just an effect of hypermediacy or just an aspect of an overall hypermediated space.

Another well-known dichotomy that is easily transferred to *Rheo* is Manovich's distinction between "the cultural layer" and "the computer layer" of new media. The cultural layer is what we see on the interface – the text we write or the images we see on the screen, while the computer layer is what the computer "sees." Here, the image or text is something completely different than "an image." It is rather a file, a set of data, etc (Manovich 2001, 46). With the extravagant use of digital manipulations of images and sounds *Rheo* seems to exemplify this difference between the cultural layer – the images that the human eye can interpret – and the computer layer. However, these disturbances of the images do not just result in a loss of meaning, but seem to be a celebration of a new potential for meaning formation as the images are turned into beautiful, vertiginous patterns that move not only on the singular screens but also across the five screens combining them. With N. Katherine Hayles, one could say that *Rheo* does not just *cut off* the relation between the signifier and the signified in the image, but instead reveals that the signifiers we see are, in fact, to the computer, the signified. Hayles explains that: "Intervening between what I [the writer, red.] see and what the computer reads is the machine code that correlates alphanumeric symbols with binary digits, the compiler language that correlates these symbols with higher-level instructions determining how the symbols are to be manipulated, the processing program that mediates between these instructions and the commands I give the computer, and so forth. A signifier on one level becomes a signified on the next higher level. Precisely because the relation between signifier and signified at each of these levels is arbitrary, it can be changed with a single global command. If I am producing ink marks by manipulating movable types, changing the font requires changing each line of type. By contrast, if I am producing flickering signifiers on a video screen, changing the font is an easy as giving the system a single command" (Hayles 1993, 77).

Hayles's distinction between the two dynamically interacting languages, is similar to Lev Manovich's distinction between "the cultural layer" and "the computer layer," but Hayles is more elaborate and specific in her analysis of the semiotic processuality of the computer *in use* in the singular speech acts than Manovich, and therefore she is useful in the specific analysis of *Rheo*.

It is characteristic to *Rheo* that there is no movement in the static pictures of nature. The only movement in the video comes from the digital manipulation. Here,

for instance, we see how the pictures are dissolved into separate layers or how they are dissolved into abstract patterns that move in one wavelike formation across the screens. We do not, of course, see or hear the complex algorithms themselves, but we can sense the way these flickering signifiers perform in the audio-visual material.

The Sensory Modality

In the entire video, visual movements are tightly synchronized with movements in sound. For instance, a flickering in a picture is followed by a flickering in sound and a horizontal movement across the five screens is followed by a movement in sound from one loudspeaker to the next. This is a general feature in the entire video, but it is for instance seen at 0:13. Such effects are possible because each display is connected to a mono-channel speaker. The most dominating sound in *Rheo* is the complex, high-pitched drone. The drone has several dynamical crescendos that lead up to a change in the visual material, and simultaneously with those changes in the visual, the drone's pitch changes.

The tight synchronization of sound and image has at least two main effects: first of all it is a way to make present digital mediality, because in digital media the auditive and visual materials are not read by two separate, sensorial systems (as in the human perception). Once an image or a sound has been digitalized it is in one way "the same" to the computer, namely data (Kittler 1999, Manovich 2001). The sound and image we hear or see on the screen are thus merely two different ways of representing data. Where the conventional movie would present sound and image in a way that imitates the human sensory perception, *Rheo* makes *explicit* that what we see and hear in digital media is conditioned by a non-human system that is fundamentally different from the human-system.

The tight syncronisation gives us the impression that the images and the sounds are also controlled by the same code or programme. This is only partly true: in his speech at the Ars Electronica in 2010 Kurokawa explains that he uses both a controlling software and manual manipulation in the computer programs in order to synchronize sound and image. Another Japanese sound artist, Ryoji Ikeda, has made the tight syncronisation of sound and image his trademark. In his audiovisual performance *Test Patterns* (2008) we see a constant flux of black and white patterns flowing across a screen and simultaneously we hear glitching, digital sounds that are intimately connected to the movements of the pictures. On his webpage Ikeda writes: "Taking various forms – installations, live performance and recordings – test pattern acts as a system that converts any type of data (text, sounds, photos

and movies) into barcode patterns and binary patterns of 0s and 1s. The project aims to examine the relationship between critical points of device performance and the threshold of human perception, pushing both to their absolute limits" (Ikeda, no date). In Ikeda's *Test Patterns* we actually experience an audio-visual output that comes from the same data source. This is not the case in *Rheo*.

The Tempo-Spatial Modality: A Time-Based Sculpture

Another effect of the syncronisation of sound and image is that the movements of the visual material are dramatized sonically and thus enhanced by the sounds. Kurokawa calls *Rheo* a time-space sculpture (Ars Electronica, 2010). Where a more conventional sculpture demarks a space around itself, *Rheo* conditions both the space it inhibits and the temporal dimension. The Danish composer Karl Aage Rasmussen says that music has two different kinds of time: the time it lasts and the time it conditions (Rasmussen 1998), which is a useful analytical distinction in relation to *Rheo*: *Rheo* lasts eight minutes, but similar to a piece of music, its temporal unfolding conditions our experience of time. While at some points, all movement in the video freezes and time pauses; at other points, the movements are extremely fast, many things happen and we experience that time moves faster. Adding to the dynamic temporality of our experience is the way the dynamic crescendos of the drone point *towards* an action that is about to happen, and then happens in the climax of the crescendo. We are positioned in a "before," a "now it happens," and then in the "after" of the climax.

One radical effect in the temporality is that it seems not to be specifically designed for the human sensory ratio: this is for instance seen in the 15 seconds from 4:05-4:20 where the images on the five screens change so fast that we cannot see the individual pictures. The German media theorist Peter Weibel says that the implosion of spatial and temporal constants is characteristic to digital aesthetics (Rötzer 1991). We could conclude that we in *Rheo* thus experience the difference between the system of human perception of time and space, and the digital tempo-spatiality, which is without constants. A similar gesture can been found in Ikeda's *Test Patterns*. *Test Patterns* is full of sounds that are in the periphery of human perception, for instance frequencies that are too high, or moving upwards passing by the threshold of the audible.[5] Thereby the audience experience both the limitations of the human perception and the fact that the digital data are on a fundamental level not based on the human sense perception.

5 As experienced in a performance in Aarhus, Denmark, in 2011.

In *Rheo* it seems as though we do not just experience the *difference* between the human system and the non-human system but that we also experience how digital mediality *expands* the human field of time and space (Hansen 2009). In *Rheo* it is not just the temporal and spatial constants of a fictional space that are indeed rendered unstable but also the sense of time and space of the actual social time-space as our attention is being swirled around in several different, juxtaposed spatialities: the fictional space of the images, the flatness or abstract three-dimensionality of the screens, and the actual space of perception.

We are not offered an unmediated, direct access to any of these spaces. Not even the actual social space. They are *all* mediated.

Materiality

There is a general agreement among scholars that even though we surround ourselves with digital technology, we are generally very unaware of what digital technology is or how it operates. This unawareness has to do with the fact that when we use our media gadgets, what we see and hear is conditioned by a layer that *escapes sensation* – namely the mathematics of software (Parikka 2012). Furthermore, we do not need to know what happens behind the interface in order to use for instance our Iphones. On the contrary: new media are specifically designed so that the technology is as invisible as possible. And as we use new media, we are primarily focused on the media content it represents: the text, the image, the music, etc., and not on the technology or the digital processes (Gitelman 2006). In *Rheo* we get to sense what we normally cannot sense, namely the fluctuating mathematics of software. Of course we do not sense the mathematics as such, but we sense the performance of a code or a programme in the audio-visual material. From that perspective the critique in *Rheo* is very modernistic. With *Les Demoiselles D'Avignon (*1907) Paplo Picasso investigated the two-dimensional space of the canvas (Bolter and Grusin 2001) and *Rheo* investigates the multi-dimensional space of the digital display. However, *Rheo* also draws on a more avantgardistic or literal trajectory (Fried 2003). Because this installation is not just exposing the grammatical level of the digital media, it also insists on the literal presence of this technology in our actual social space.

When I experienced *Rheo* I heard the installation, as a distant humming, long before I saw it. And, as already described, when I experienced the installation my head jilted from side to side in order to follow the movements of the pictures

across the screens. Perhaps the digital mathematical processes are hidden from our senses, but these processes leaves traces, they surround us with this humming sound that comes from the constant flow of data that is being recorded, manipulated, and transmitted.

The German thinker Martin Seel says that to come out of and to enter into resonating is something that we often experience in modern sound art (Seel 2005). Resonating is, according to Seel, an occurrence without a phenomenally determinable something that occurs. Seel mentions the American composer John Cage's seminal silent piece*, 4'33"* (1952) as an example of an audible resonating silence. In *4'33"* the instrumentalist goes on stage with the instrument, but plays nothing for 4 minutes and 33 seconds. In this silence, the audience experience that the supposedly toneless presupposition of musical sound is actually full of sounds. This is to be understood on a very specific level because the silence of the musician enables the audience to hear the many sounds existing in the concert hall that the music from the scene would normally oppress. In that way what otherwise forms the vague background of perception comes to the fore, "without however being released out of its vagueness" (Seel 2005, 149).

I think it is the same kind of resonating that we experience in *Rheo.* It is the background of our perception in a digital culture that is foregrounded.

Digital Media as "Media Synthesiser and Manipulator" or "Transcendental Technicity"

According to Manovich the computer was initially thought of as an "analytical engine suitable for crunching numbers," while today it functions rather as "a media synthesiser and manipulator (Manovich, 2001, 26). Due to the focus on the digital manipulation of sound and image, it is easy to think of *Rheo* as a critique of the computer as a media synthesiser and manipulator. Or as a critique of digital media an integrated part our acts of representation or our language. However, as mentioned in the analysis above, *Rheo* is more than just a critique of the immediacy of the computer image. What happens in the installation is not just happening *in* the pictures or *on* the screens, but also in the actual, social space, where we move our eyes (and perhaps also our heads) in order to follow the audio-visual movements across the five screens that combines them. Mark B. N. Hansen argues that the computer today cannot be explained by Manovich's model. He says that we should rather distinguish between two distinct functions of media: "whereas media in the first, traditional sense mediates human experience

itself (its content is that experience), media in the second sense mediates the technical condition that makes possible such experience – the 'transcendental technicity' underlying real experience in our world today" (Hansen 2010, 180). *Rheo* can be read as such a transgression from one program to the other; from "the archiving of individual experience to the generation of collective presence and of connectivity itself" (Hansen 2010, 180n), as the individual pictures on the individual screens are being dissolved and moved across the screen that then become parts of a network.

However I also want to modify this conclusion. Because the individual pictures of landscapes that we see in *Rheo*, do in fact *not* seem to reflect an individual, human experience. If we look at these pictures they all have the same characteristic low horizontal line and none of them have any spectacular content or scenery. There seems to be randomness and automation in the selection and the composition of the pictures. The overall impression is therefore not that we are experiencing something that a warm, living subject has experienced, but rather that we are seeing what a "perception machine" (Virilio 1998) has perceived.

It is Paul Virilio who in 1998 talks about the vision machine, and the "splitting of viewpoint, the sharing of perception of the environment between the animate (the living subject) and the inanimate (the object, the seeing machine)" (Virilio 1998, 62). This "splitting of viewpoint" that Virilio describes in 1998 has indeed become a standard part of our life in 2014. There is, in particular, one point in the video that supports the notion that we are experiencing the extreme speeds of the digital processes of data organization and retrieval – or the "transcendental technicity" – and that is in the 15 seconds (from 4:05–4:20) when the images on the five screens change so fast that we cannot see the individual pictures. Virilio stresses that when we talk about the automation of perception by machines the word "image" is an empty word **"**since the machine's interpretation has nothing to do with normal vision [...]. For the computer, the optically active electron image is merely a series of coded impulses whose configuration we cannot begin to imagine since, in this 'automation of perception,' image feedback is no longer assured" (Virilio 1998, 73).

In *Rheo* it is as though the generosity and playfulness by which the audiovisual material is tossed around demonstrates this fact: that no return image is needed. That imagery is optional to the digital non-human interpretation.

It is a basic condition that we cannot see what is behind the image, behind the interface, but in the mesmerizing speed of the images and in the tight synchronization of sound and image in *Rheo,* we can sense that which we cannot sense, namely the non-human system of interpretation.

The Background of Perception Foregrounded

In Steven Lisberger's movie cypermovie *Tron* (1982), a hacker is abducted into the world of a computer, "the Grid." He is forced to participate in gladiatorial games, but gets help from a security program. In *Tron,* we see a visualization of what it is like to be inside a computer. For instance, the space is without specific constants, and several times it almost transcends into a two-dimensional space, as a line on a black background. In comparison to *Tron,* it is obvious that the *Rheo* is not directly creating a new narrative about what it is like to be human in a digital culture. But still there are many symbolic elements in *Rheo* that signifies something "digital" such as the use of audible and visible glitches in the material. But, as the analysis above has shown, the ability to question our current media-situation lies not merely in the symbolic exchange where the recipient "decodes" a given set of symbols. Instead, *Rheo* establishes its critical potential due to the singular, sensuous act of reception it affords, in which something appears to the recipient's senses.

In his essay on glitches Cascone (2002) states that the use of failure explores the background of digital technology, in the same way the Italian Futurists shifted the focus from the foreground of musical tones to the incidental background noises. In my analysis I have shown how *Rheo* in a similar way allows us to experience the "background" of digital technology that we normally are not aware of. But due to the intervention in the social space of the viewer, *Rheo* also draws our attention to how digital technology actually forms the background of our entire culture. The critical potential of *Rheo* is therefore not just aimed towards the digital media as a language, but also as a milieu (Meyrowitz 1997) or culture (Gere 2008).

It is a common statement among researches in new media that we are already a digital culture (Gere 2008, Manovich 2001). Not just due to the amount of digital technologies *in* our culture, but because these technologies have transformed our culture. We might think that we use media as a channel through which we communicate our general understandings of the world, but several scholars asserts that it is in fact the other way around: our way of thinking is evolved within and for our current "media ecology." A change in our media situation is therefore a change in us (Gere 2008). When Gere wrote the afterword to the second edition of his book on digital culture in 2008, he added: "The need to keep questioning our situation [...] remains more pressing than ever, especially as the technology itself is more and more invisible as it becomes an integral part of the very fabric of existence" (Gere 2008, 224). Such a questioning will of

course take place in academia, but as I have tried to show in the analysis above, music and sound art can also participate in a questioning in their own right, not by creating new narratives about digital culture or technology, but by affording an aesthetic, sensuous experience of digital mediality and digital culture. *Rheo* allows us to experience this "integral part" that we otherwise cannot experience. The background of our perception is foregrounded, as a background.

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Figure 2. Screenshot, Kurokawa: *Rheo: 5 Horizons,* 2010.