# PETER WEIBEL
## ARS ELECTRONICA *(1994)*
*An Interview by Johan Pijnappel*

*p. 27-31*

**ARS ELECTRONICA**

**Johan Pijnappel** – *In 1979 Ars Electronica grew out of an idea of Hubert Bognermayer's, of an electronic music and video symposium. What was the initial aim of Ars Electronica at that time?*
**Peter Weibel** – Hubert was an electronic pop musician, and he wanted to make an event around electronic pop music. So he approached Dr Hannes Leopoldseder from the ORF (Upper Austrian Broadcasting and Television), the Austrian radio and television station. They started together with scientists and artists like Herbert W Franke, who was a chemist and one of the first people to move into digital art in the way of Max Bense; an art based on calculation. He chose the name Ars Electronica. They wanted to make a more or less popular event, showing the influence of electronics on pop culture.

*Since 1984 there has been less concentration on spectacular inventions, and more on Utopian social possibilities. What were these, and did they work?*
– There was a change in 1984, because they invited me to participate as an artist, and consultant, and in 1986 a new director, Karl Gerbel, was appointed at the Brucknerhouse, who wanted greater influence on Ars Electronica. It should be mentioned that Ars Electronica is supported by two institutions, the ORF and the LIVA (Linzer Veranstaltungsgesellschaft) or Brucknerhouse. The ORF has dealt with the *Prix Ars Electronica*, since 1987, whilst the Brucknerhouse finances and represents the festival.
   Initially as artistic consultant, and later as artistic director, I changed, with Gerbel's support, the profile of the festival from popular entertainment to art. We wanted to go more into the heart of the beast, that is electronic art. I see media art and experiments in art and technology as a very logical continuation of the first phase of the avant-garde movement, which I call modern art, like Malevich and Mondrian, and also of the second avant-garde, which I call neo-modernism, meaning Fontana and Yves Klein. An interest in space technology can be discerned in the work of Malevich; indeed one of his closest friends, Tsiolkovsky, was a pioneer in the Russian space programme. In 1925, Malevich made his famous *tableau d'analyses* that illustrated states of technology and corresponding pictorial representation: Suprematism and airplanes, Cubism and

assembly line, Futurism and wheels. Thus there was clear pictorial evidence of how technology influenced his artistic thinking. The manifesto *Movimento Spaziale,* by Fontana in 1952, says: 'True art should happen on television' and was itself transmitted by television. So televisual art, video art did not start, as people believe, with Nam June Paik. He did his first experiments in 1963-65, but the very first experiments were executed in 1952-56 when the people at Ampex invented the magnetic image recorder. Among these people was RN Dolby, the inventor of Dolby noise reduction. Fontana's slashing of a painting was influenced by his feeling that one should leave the pictorial space and look for another telematic space; more evidence that pictorial thinking was influenced by technology.
   We have to see Ars Electronica as a continuation of these impulses of the Modernists, Neo-Modernists and even Post-Modernists. In the visual arts Post-Modernism, as defined by Lyotard, is a radical criticism of the weaknesses of Modernism, but from a Modernist point of view. For some Modernists, Modernism was not modern enough and totalitarian concepts made it possible for the Modernist movement to come together with Fascism; just as Futurism was the official art movement of Italian Fascism and Mies van der Rohe and others were occasionally associated with German Nazism. Post-Modernism criticised this aspect of Modernism and wanted to radicalise the Modern movement by, for example, the appropriation of art. Therefore, I tried as far as I could to give a new outline of what electronic art could be, and invited theoreticians such as Flusser, Virilio, Baudrillard and scientists to give the background frame of reference for this movement. My view is that the artist is always influenced by the world view of the scientist. Pictures which are given to the world by electronic artists are closer to the models of the world given by the scientist and therefore are closer to reality. The advantage of electronic art is to give us a more advanced picture and model of the world than other artistic media.

*Each year Ars Electronica has a theme. What were the developments and what artists represented them?*
– I entered this field, in 1984, with the publication of my book *The Aesthetics of the Digital Art*. Therefore,

the exhibition in 1986 reflected this and was centred on media art, telematic projects, terminal art, digital art, video art, and multimedia events. However, I started to rethink the structure systematically. It was evident that a lot of progress was being made in sound: the first data glove experiments had been done very successfully by Stein in Amsterdam, and there were other very advanced interface technologies. I realised that besides prepared pianos and electronic guitars we had new interfaces and it was evident that these new interfaces were more advanced in sound than in the visual arts. So, in 1987, I organised a symposium on this subject named *Open Space, Free Sounds*. It illustrated that the behaviour of the audience could change the nature of a performance. In a traditional concert presence is passive, only the performers can alter the sound. This concept was introduced by John Cage and I realised that this liberty could be given to the audience, so the audience could walk around changing the modulation of the sound.

In order to demonstrate this, two Americans, David Dunn and Stephen Wilson, formed what I call sound environments. They installed sources in the environment, and the audience – by its motion, its activity – created the sound. This was the first strategy of interaction, the work could only exist through the participation of the audience. We also had other performances, especially from Stein, who has invented new instruments, or rather new interfaces between performer and instrument, and with these early data gloves a new sound could be created. I saw audience participation as the most important facet of the use of electronic media, and also as a Utopian function. This was already part of the Happenings arranged by such groups as Fluxus, Spoerri, Allan Kaprow, and even part of Op art in the 1960s. They were all looking for participatory strategies for their audiences, which could be shown very clearly in sound.

Between 1986-88, I concentrated more or less on sound. The festivals do have a theme at their centre, but naturally other things are included. In 1986 we started with a symposium of artists and scientists, involving evening events and exhibitions. Most of the sound experiments were done in the open air, in the park. Today this has become popular under the terms 'Techno' and 'Ambient Techno'. The idea goes back to Erik Satie's *Music d'ameublement*; but we were the first, I think, in 1986-87 to deal with ambient art and environment art purely on the sound level. For example, David Dunn had a marvellous piece in which the birds in the environment created a sound. A computer processed the sound in real-time, and it was played back to the birds. Then the birds reacted to the sounds and this sound was
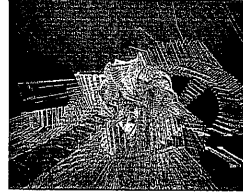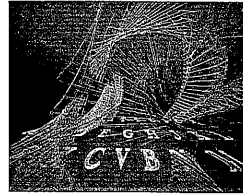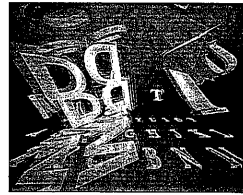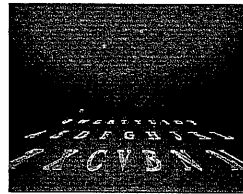
again processed back to the birds. So the birds, the real elements, became a kind of virtual element. What was later done by Cyberspace was already somehow anticipated by these sound environments.

Then I realised that performers not only used audio art elements and interfaces, they also used visual interfaces, so I suggested we concentrate on the research in this field. For two years, under the title *Art of the Scene*, I focused almost exclusively on multimedia experiences; computers as universal machines creating and processing pictures as well as sound. This was seeking a scientific connection between the pictures and the sounds because normally music is just illustration. I therefore concentrated on artists with one instrument, one interface which could create a simultaneous sound and pictorial event. This allowed performer and audience to enter a kind of multi-sensory event horizon together.

Early in 1989, there was the idea of the net, which I called *In the Network of Systems: For An Interactive Art*. This was the first time that anyone perceived the net as a facility to create a trend, or to introduce concepts. My aim is not just to make a festival that records contemporary trends. I'm not waiting at my table to see what might come in; that's a very important difference from other festivals. I know myself through research, and my own artistic practice, the areas in which to work. I always feel a little bit ahead of the next step – sometimes two years, sometimes one, sometimes ten. I use this festival to enforce a trend, or even sometimes to create one, by exhibiting new concepts, terms and ideas about the electronic media world. That is why we introduced the idea of the net in 1989, saying electronic art should not be seen as a product but as an activity in the net. The exhibition itself featured artists like Myron Kruger, Jeffrey Shaw, myself and Lynn Hershman, and one year later, the *prix Ars Electronica* introduced a new category for interactive art. Ars Electronica was the first forum to make evident, world-wide, how important interactivity is in connection with the electronic media.

The next step was *Cyberart, Cyberspace and Virtual Worlds*, in 1990. There was a mix of scientists, writers, and philosophers, including Minsky and Gibson. The festival in 1992 involved the concepts of nano and endo, as in nano-technology and endo-physics. The basic idea of nano-technology is going into a very, very small micro-world that corresponds to the microchips and microminiaturisation of electronic technology. We could make a link between the artificial world of microtechnology and the real world, the so called physical world, through which we can go down into these micro-universes with the aid of the technological world.

Endo-physics is a term created by two scientists,









PAGE 26: *Peter Weibel,* Virtual World 2: The Object World; *ABOVE: Peter Weibel,* Virtual World 3: The Text-World

David Finkelstein and Otto E Rossler, in the late 80s. Classical physics is based on the assumption that we are external observers of the world and that our observation does not change the world. However, after quantum physics it was clear that observation, on a micro rather than macro level, does alter what is viewed, and this is the Heisenberg principle. Endophysics states that in physics all laws are relative observations, as we are internal observers. Therefore there are no absolute internal laws.

I realised that this is in fact the point of electronic media. In the natural world we have the illusion of being external observers; when touching something it appears not to change. But in the electronic media the basic principle is interactivity. Even a painting, like a star, exists when not being watched, but you have to put a video cassette into a recorder to watch it. This is the lowest degree of interactivity. All these multimedia events only come into existence through one's observation. In the electronic world we are merely internal observers, the world becomes an interface problem. The art product is not a picture anymore, it is not a two-dimensional window on the world but a door to multi-sensorial events; an artificial environment consisting of a dynamic system of different variables. One enters into a new kind of event horizon. These events can be visual, tactile, or audio. The observer is both an external and internal observer – inside the event, part of the system that is observed. A Head Mounted Display unit allows virtual worlds to be entered, but what is seen in the helmet includes fragments of the observer's own body, part of this virtual world.

The electronic picture is no longer just a picture but a dynamic system of variables controlled by the observer or the context. What we are doing is constructing context controlled event worlds, built on the virtuality of the storing process, where information is not locked, but free-floating and therefore immediately changeable. The instant variability of the information stored creates a dynamic system with lifelike behaviour that I call viability. Virtuality, variability and viability are the main characteristics of interactive electronic media.

This concept led to my interest in genetic algorithms, or the rules of growth. So in 1992, I organised *Genetic Art – Artificial Life*. This festival was attended by many people including many individuals from the Santa Fé Institute – renowned as the birthplace of the complexity theory – and many female artists like Orlan, from France, who performs plastic surgery on her own face.

Through our exploration we have had virtual worlds, endo and nano physics and it became clear that the computer not only creates virtual environments and worlds but also infects the real world, allowing its

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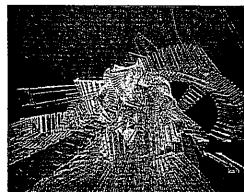onment created
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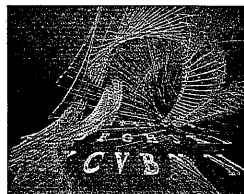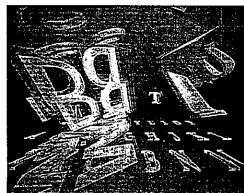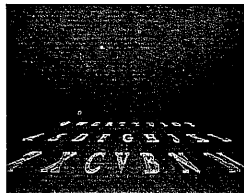birds. Then the
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intelligence into our physical environment. That is why I came up with the title *Intelligent Ambient*, to convey that we no longer have this clear separation between the virtual and physical worlds. I wanted to show that they are merging. The idea of Intelligent Ambient was conceived to illustrate that computers are gaining control of our physical environment and slowly turning it into a system of variables. Man invented technology to control the natural environment, which can be dangerous for us. Now our own environments, like cities, can become dangerous for us. We have to control our own technical environment. This is what I call Intelligent Ambient.

*In 1988 the symposium* The Philosophy of New Technology *made huge developments in the theories developed, in USA in the 70s, by the Art and Technology movement. What were they?*

– First of all it is important to make clear that media theory no longer comes only from America. We have had Baudrillard and Heinz von Forster, a cybernetitian and so a lot of cybernetic ideas have come from Europe. It created a new philosophical subject, a kind of vague logic, a fuzzy border between objects and subjects. The Post-Modern electronic world created a fractal situation that is no longer absolute, but exists as variable positions of the subject: you are not defined any more. However, it is a situation which can be changed, that is necessary to survival. It is essential that there is change in the real world to access the various positions of one's subjectivity. The classical subject was defined by controlling objects. Now due to interactivity, it must be learned that one is not a master by enslavement. Up until now human beings had been the only creatures who could process signs, creating symbols and giving them meaning. However we now have computers that can do this, therefore we no longer have a monopoly. The situation is changing its position and the subject has to learn not to be master by having slaves around. Love is an example of how to be a subject and yet merge with somebody else. The aim of love is not mutual domination. You melt, becoming a covariant with another subject that you feel in tune with, which has the same ideas, the same emotions. Technology teaches us to understand how we can be subjects without control principles.

The second point, which is easier to understand, is the future of geopolitics. The telematic global city means urbanity, freedom, individuality and when this happens the political borders and geopolitical behaviour will no longer be valid. In Italy the people have said they don't want politics any more, they want media. And America was very close to saying the same when considering Ross Perod. The question is how to make politics in a telematic age.
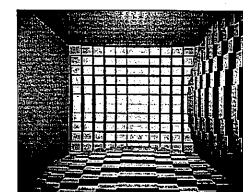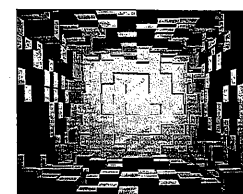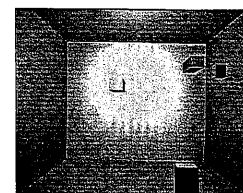
*Peter Weibel, Virtual World 1: Space and Architecture*

Politics founded on geography is barbaric – one only has to consider the situation in Bosnia – even when you think of the city, which is an obvious geopolitical idea of how to organise social life in a certain territory. It doesn't exist anymore; today politics have to be made without cities, without borders. This was one area which remains unresolved, but a start has been made rethinking technology, territory and politics.

This point was discussed in my essay *Technology and Territory* and Baudrillard spoke about this subject and about the fractal subject. Kittler and Heinz von Forster, as a cybernetician and a constructivist, raised the problem of how the real world is vanishing. More and more, simulations of the world and reality become equals and reveal how the real world is artificially and socially constructed by us.

I always compare this to avant-garde music when the pause was emancipated by Cage and Webern. Webern was the first, in his famous *Bagatelles,* to say that a pause is equally as important as a sound. Then there is the famous book called *Silence* in which Cage says a silence is the same as a sound. Now instead of break and pause we have fiction, symbolic, imaginary and simulation. These elements are as important as reality in our actual world. Reality in electronic worlds becomes a wall built by fictitious bricks and therefore variable, changeable, and controllable by man. These three arguments have been put forward as a contribution from media philosophy to the electronic world.

*Technological progress is very fast and has a tremendous influence on the way men look and deal with themselves, and the earth. What are the important subjects that influence our view of life?*
– I will answer this question in two ways, as it has consequences in both the art world and the so-called real world. New technological interfaces had such a deep influence on our perception that art changed completely in the 60s. These experiments with art and technology became known through Robert Rauschenberg and others, including Andy Warhol. People realised that the eyes didn't see as well as a camera, which is why when Frank Stella was asked who the greatest artist was he gave the name of a baseball player. He was fascinated by the player's eye because he could synchronise so many things, like a specifically trained mechanical eye. Therefore, in minimal art and in media art the mechanism of perception became the art itself. There is a piece, *Enforced Perspective*, by Bruce Nauman, from 1976, where 36 different cubes exist. He realised you can't see a cube as a cube, because it is always seen from a different point of view, so you can only show different forms of perspective using distorted cubes.
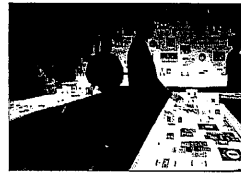
The next step was to explore the technology itself, and experiment with this new medium of perception. Natural perception could be substituted with the technological; this was the answer of the structuralist avant-garde, whose film structure was based not only on perception but also on language. Conceptual art was leaving the arena of natural perception and moving to another area, where language was the model and not perception. Then came video and computer art which fuse technological and artificial perception together with language to form context art. An excellent example of this medium is Jeffrey Shaw's *Legible City*. This is the state of technological art in the 90s, social context is used as a model for the text and the context becomes the text.

It is clear that how we perceive the world is the product of millions of years of evolution. We cannot accelerate this process, but we can accelerate the technological interfaces that make it possible to see, think and act faster. The world is becoming increasingly complex; we have more and more information to process and we need the help of televisions, telephones, computers and satellites just to be able to function. Our bodies could not cope with requirements of this technological world unaided, so we have been forced to create the virtual body. As technology improves so do our own abilities.

A virtual body does not have to look like a robot: that is an old-fashioned idea because there is no need to imitate existing hardware. What the virtual body is doing, is imitating the software. There were people who said a robot should be like a body and should do everything at the same time, write, think, and have emotions, but this is neither possible nor necessary. Instead, you will have many, many little robots around you, who don't look human, and who have only very small, local functions; for instance, a machine based on muscular reaction for opening a door. This will be our virtual body and we have already started: we have telephones, televisions, and a variety of other appliances which are starting to create this virtual body, which creates a radical transformation in our perception of the world. We need virtual organs to help us to function, to improve our quality of life, in this environment.

*By the end of 1995 there will be a permanent Ars Electronica Institute, in addition to the festival. In what direction does the future of Art and Technology lie. Will it be more game oriented or will the bias be towards simulations of biological processes?*
– The answer is the transfer of the experiences in the art world to the real world. To understand this we should consider other examples of transfer. In the 50s and 60s there was avant-garde cinema and it



*Perry Hoberman,* Bar Code Hotel, *interactive installation, Banff Centre for the Arts, Banff, Alberta, Canada, 1994*

produced MTV. This is a model of the transfer of knowledge which is the real function of the avant-garde. It will be similar for the electronic media. Artists like Jeffrey Shaw, Lynn Hershman, Cyber Worlds, Paul Sermon and myself are working with high-powered computers, anticipating the real world in ten or fifteen years. All the subjects we have at my institute for new media in Frankfurt, and at Ars Electronica – telematic communications, networks, virtual bodies, multimedia environments, computer-controlled environments – will be consumer durables in ten years time, everyday items in regular households. There will be intelligent buildings and more intelligent households.

What I see is that our research and experiments will not only have an enormous influence on the consumers but also in hospitals, factories and all other public areas. When you go into a railway station or museum you will be surrounded by machines helping you to communicate; whilst the virtual body will have an enormous input into medical technology, from drug design to virtual operations. People who now experiment on the real body can do simulated operations, before they try the real body. Scientific visualisation will have an enormous effect on how fast people learn. They will learn in a transcontinental environment, wired to a network controlled by autonomous agents that are capable

of learning and adjusting themselves.

I have nothing against video games Hoberman's *Bar Code Hotel,* because bar very interesting philosophically. The wor three levels of codes. First we have a real c boxes, which are not things in their own are all alike so are neutral. Then there ar words on the boxes – but in fact the word you anything more. The real information code, the third level. We do not interact o of objects or language any more, but on tha

This is my final idea about the worlc communication between different codes faces, more or less immaterial. When the Dutch artist Mondrian introduced Neo-plas realised that the picture became three-di and that form has to be substituted by G which he called *Veve Gestaltung.* At the of the century we talked about *Gestaltung,* next century we will talk about codes. We variable positions of the subject but we variable zones and types of visibility. Some be visible as a picture, a word or a cod code will always be dominant. In *Bar Code* codes make the decision of how it is visibl is visible and in what form, or *Gestalt,* it This world of codes will be central in century, and this is what has to be explore

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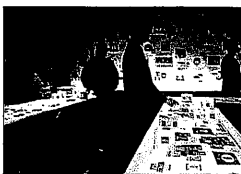ferent forms of

perspective using distorted cubes.

The next step was to explore the technology itself, and experiment with this new medium of perception. Natural perception could be substituted with the technological; this was the answer of the structural-ist avant-garde, whose film structure was based not only on perception but also on language. Concep-tual art was leaving the arena of natural perception and moving to another area, where language was the model and not perception. Then came video and computer art which fuse technological and artificial perception together with language to form context art. An excellent example of this medium is Jeffrey Shaw's *Legible City*. This is the state of technologi-cal art in the 90s, social context is used as a model for the text and the context becomes the text.

It is clear that how we perceive the world is the product of millions of years of evolution. We cannot accelerate this process, but we can accelerate the technological interfaces that make it possible to see, think and act faster. The world is becoming increas-ingly complex; we have more and more information to process and we need the help of televisions, telephones, computers and satellites just to be able to function. Our bodies could not cope with require-ments of this technological world unaided, so we have been forced to create the virtual body. As technology improves so do our own abilities.

A virtual body does not have to look like a robot: that is an old-fashioned idea because there is no need to imitate existing hardware. What the virtual body is doing, is imitating the software. There were people who said a robot should be like a body and should do everything at the same time, write, think, and have emotions, but this is neither possible nor necessary. Instead, you will have many, many little robots around you, who don't look human, and who have only very small, local functions; for instance, a machine based on muscular reaction for opening a door. This will be our virtual body and we have already started: we have telephones, televisions, and a variety of other appliances which are starting to create this virtual body, which creates a radical transformation in our perception of the world. We need virtual organs to help us to function, to improve our quality of life, in this environment.

*By the end of 1995 there will be a permanent Ars Electronica Institute, in addition to the festival. In what direction does the future of Art and Technology lie. Will it be more game oriented or will the bias be towards simulations of biological processes?*
– The answer is the transfer of the experiences in the art world to the real world. To understand this we should consider other examples of transfer. In the 50s and 60s there was avant-garde cinema and it

*Perry Hoberman, Bar Code Hotel, interactive installation, Banff Centre for the Arts, Banff, Alberta, Canada, 1994*

produced MTV. This is a model of the transfer of knowledge which is the real function of the avant-garde. It will be similar for the electronic media. Artists like Jeffrey Shaw, Lynn Hershman, Cyber Worlds, Paul Sermon and myself are working with high-powered computers, anticipating the real world in ten or fifteen years. All the subjects we have at my institute for new media in Frankfurt, and at Ars Electronica – telematic communications, networks, virtual bodies, multimedia environments, computer-controlled environments – will be consumer dura-bles in ten years time, everyday items in regular households. There will be intelligent buildings and more intelligent households.

What I see is that our research and experiments will not only have an enormous influence on the consumers but also in hospitals, factories and all other public areas. When you go into a railway station or museum you will be surrounded by ma-chines helping you to communicate; whilst the vir-tual body will have an enormous input into medical technology, from drug design to virtual operations. People who now experiment on the real body can do simulated operations, before they try the real body. Scientific visualisation will have an enormous effect on how fast people learn. They will learn in a transcontinental environment, wired to a network controlled by autonomous agents that are capable

of learning and adjusting themselves.

I have nothing against video games like Perry Hoberman's *Bar Code Hotel*, because bar codes are very interesting philosophically. The work exhibits three levels of codes. First we have a real object: the boxes, which are not things in their own right; they are all alike so are neutral. Then there are letters – words on the boxes – but in fact the words don't tell you anything more. The real information is the bar code, the third level. We do not interact on the level of objects or language any more, but on that of codes.

This is my final idea about the world being a communication between different codes and inter-faces, more or less immaterial. When the wonderful Dutch artist Mondrian introduced Neo-plasticism, he realised that the picture became three-dimensional and that form has to be substituted by *Gestaltung,* which he called *Veve Gestaltung.* At the beginning of the century we talked about *Gestaltung,* but in the next century we will talk about codes. We now have variable positions of the subject but we also have variable zones and types of visibility. Something can be visible as a picture, a word or a code, but the code will always be dominant. In *Bar Code Hotel* the codes make the decision of how it is visible, when it is visible and in what form, or *Gestalt,* it is visible. This world of codes will be central in the next century, and this is what has to be explored.

*Perry Hoberman, Bar Code Hotel, interactive installation, Cyber Art, Ars Electronica Design Centre, Linz, Austria, 1994*