

art did away with the dualism of image and object, because here the apparatus is explicitly inserted between them:



Whereas the artist's hand could traditionally be neglected as a machine, this was no longer the case in photography. In a second stage, apparatus art eliminated the object and images could now only be generated by machines. Here is where autonomous worlds of images began to emerge.



The classical ontological aesthetic



became a semiotic aesthetic.



The world of apparatus world continues what painting began, what it was forced to do by machines and what painting was unable to fulfill: the emancipation of all elements from art, giving rise to various worlds with intrinsic laws and qualities. By the same token, media art is a continual (postmodern) redefinition of the project of modernity. Non-identity, context, interactivity, observer have replaced identity, text, closure, author. That this heroic art of the apparatus world meets with resistance and protest, even though it has founded the logic of modernity to which it adheres, can only be explained by the ideological ban motivated by man's fear of the void created in modern civilization and modern art by the autonomy of the machine and the disappearance of a familiar reality.

exhibition "The Apparatus World - A World unto Itself" shows the wide range of these sound and image worlds, where the signal itself is no longer a carrier for depicting the object world but rather the image itself; autonomous worlds of sound and image that can be manipulated by both the observer and the machine. An artificial world of sound and images is emerging, one which can be generated by machines alone. These worlds can serve as a model for further artificial realities. The fifth stage - the machine-generated, calculable image of the computer - unites not only the characteristics of all the four stages of technical imagery but also reveals new characteristics: virtuality and interactivity. Interactive computer installations and simulations facilitate the illusion of the "animated" image as the presently most advanced stage of development in the art of the technical image. The interactive "animated" image is perhaps the most radical transformation of the understanding of image in the western world.

The scandal of machine-supported art, from photography, video, to the computer, uncovers the fiction that art is a human place, a place for human creativity, unique individuality. Machine art mocks this bourgeois illusion in an unrelenting way. Fox Talbot already sensed this. Even though he explicitly states in the title of his first paper that the traditional tools of art had disappeared and that the image was now made by the machine itself instead of the artist, he sensed an ideological resistance to the exclusion of the subject. Instead of calling his main work "The Pencil of Machine" he gave it the wrong title "The Pencil of Nature" (1844) and this in spite of the fact that he understood the autonomous value of photography. Talbot does not mention the machine, the *raison d'être* of photography. To the contrary, he transfigured it in ideological fury to a work of nature, if not of God. This way the sovereignty of the bourgeois subject remained untouched, at least in ideological terms. The autonomy of the photographic machine was the first model of "autonomy" to trigger the logic of modern art, which consisted in the progressive development of its autonomous elements. The three stages included 1) analysis and shift of focus (stressing or neglecting a specific aspect), 2) emancipation and absolutization (leaving out or absolute primacy of an element), 3) substitution and exclusion (exchanging or replacing an element). In modern art this was reflected in the development of different "own" worlds, from the intrinsic quality of color to that of light and that of material. This autonomous nature of the mediums of modern art provided the basis for the autonomy of art, but at the same time also posed a threat to it. The autonomous world of apparatus stands at the beginning and at the end of this development. From the outset media art endorsed the concept of autonomy of its world, its values and laws. In this respect it is part of the prerequisites, history and future of art. The world of the apparatus as a world unto itself does not just follow the logic of modernism, it has also created its conditions and context. This is what accounts for the self-referentiality of modern art. As Fox Talbot alludes to, machine

founded modernity. Here I will try to explain why there is still such a strong ideological resistance to machine and media art. It has to do with what is genuine about modern art but also what makes it disquieting: its autonomy. Machine-supported art also radically implicates the independence of machines from man.

Photography brings a new definition of the author into play which is irreconcilable with the classical definition of the author as *deus artifex*, as the one and only God of creation. Already the father of modern photography, i.e., the positive/negative procedure, Fox W. H. Talbot pointed to an axiomatic disappearance in his first publication ("Some Account of the Art of the Photogenic Drawing, or, the Process by which Natural Objects May be Made to Delineate Themselves without the Aid of the Artist's Pencil" in: *Royal Society Proceedings*, IV, 1839, p. 120f and in: *Philosophical Magazine*, XIV, 1839, pp. 196-208). The disappearance that he was referring to was that of the pencil (or of the hand) of the artist. In a letter written in 1839 he describes what replaces the artist, the automation: "...that by means of this device [the photo camera] it is no longer the artist who makes the picture but it is the picture that makes itself. The artist does not have to do more than set up the device in front of the object, the picture of which he wants." The device makes the picture - by itself is "auto" in Greek. The photographic device is thus an automatic and autonomous machine. By means of the autonomous mechanism of this device an image is made without the artist. The machine has become a rival of man in creating a work. The machine as an autonomous producer provides a first and fundamental model for all the autonomy movements that followed in modern art. The first stage of the "autonomous" image was the machine-supported production of images in photography (1839). The transmission of images over long distances (telegraphy) by means of the scanning principle, the dissolution of a two-dimensional image in a linear sequence of temporal points took place at about the same time. The separation of messenger and message in the electromagnetic age (1873: Maxwell; 1887: Hertz; 1896: Marconi) made it possible to produce signs without a body or material in a telematic culture. It also resulted in the disappearance of space and time. Telephone, telecopier, the "electronic telescope" (TV system, developed by P. Nipkow in 1884) are systems for transmitting sound as well as static and dynamic images. The machine-supported generation of images was followed by the machine-supported transmission of images (second stage). Machine-moved images, film, the illusion of the moving image, were the third stage.

The discovery of the electron and the cathode-ray tube (both 1897) provided the basis for the electronic production and transmission of images. The magnetic recording of the image signals (instead of sound signals as before) by means of the video recorder (1951) combined film and TV (image storage and emission) in the new medium of video. This fourth "stage" increased the possibilities of manipulating the image by means of machines. This

resulted in an obsession with the laws of the newly discovered world (of color). The autonomous value of color called for a scientific, non-subjective method. Overcoming the subjectivity (of impressionism) and the signature of the painter, the scientific grounding of painting on the objective laws of vision, color and light were the expressed goals of post-impressionism, divisionism and pointillism. These intentions of painting at the end of the 19th century were also already the premises of photography since the mid-19th century. We can assume that this development of painting to autonomous worlds of color and surface, lines and forms and the grounding of painting on a scientific method and depersonalization was influenced by photography, the machine production of images.

Further stages of modern art in its search for greater autonomy, making the emancipation of its constitutive elements, were the preoccupation with the autonomous value of light (Robert Delaunay, 1912, to Zdenek Pesánek, the father of light kinetism, who introduced real neon light in 1933) and to the preoccupation with the autonomous value of the material (from Tatlin to Beuys). In his preoccupation with the autonomous value of material, Tatlin had come close to machine art, parallel to the machine art of the abstract avant-garde film of the twenties. (See the banner made by R. Hausmann and G. Grosz: "Long Live Tatlin's machine art.")

After the elimination of the external reference through the ban imposed on the object, a phase followed in which the external reference was replaced by an inner reference. The non-objective colors and forms began to represent internal states (e.g., the world of the soul) instead of external states (e.g., the world of objects). Abstraction briefly became a doctrine of signs for structures of existence, the soul, the cosmos. This internal reference, however, was already attacked by the Russian Constructivists and Productivists. After the external reference had been eliminated, the internal one was done away with as well, and art became self-referential. Through the gradual emancipation of all of its elements as autonomous values and autonomous methods, art began to produce worlds of its own. The declarations of independence of color and form on which the autonomy of modern art was based entailed new aesthetic strategies such as depersonalization, deletion of the artist's signature and scientific methods of production befitting in keeping with the times. All of this, however, was more an aesthetic grammar introduced by photography than with that of painting, the former representing the notorious grammar of machine-based production of imagery.

Machine and machine-supported media art is not only a logical consequence of the visual arts, it is indeed the prerequisite of modern art. In 1839 (after the invention of Daguerre photography) Paul Delaroche put it somewhat ambivalently: "From now on painting is dead." This, of course, refers to historical painting. The introduction of machines in the world of art revolutionized art and

THE APPARATUS WORLD—A WORLD UNTO ITSELF

P e t e r W e i b e l

The development of modern art is inseparably linked to the notion of autonomous value. Autonomous value in the context of modern art implies the autonomous value of artistic mediums on which modern art makes its claim to autonomy. The discovery of the autonomous value of artistic material is a logical consequence of the onset of abstraction at the beginning of the 20th century. This value continued to increase exorbitantly.

At the end of the 19th century the autonomous value of color was discovered. A number of artists made statements testifying to the liberation of color as an autonomous medium. Maurice Denis (1896): "In keeping with my definition from 1890 the picture has become a surface on which color is arranged according to a certain principle." Vincent van Gogh: "I am totally absorbed by the laws of color - if we had only learned them in our youth! The true painters are those who do not create local colors, that was what Ch. Blanc and Delacroix spoke about one day. The painter of the future, he is a colorist as there never was before him."

Eugène Delacroix was accused by Maxime Du-camp of the following: "Semblable à certains littérateurs qui ont créé l'art pour l'art, M. Delacroix a inventé la couleur pour la couleur." Cézanne, the father of cubism destroyed the object by adhering only to the logic of color and coloristic construction: "Il y a une logique colorée, parbleu. Le peintre ne doit obéissance qu'à elle." Painters never ceased to preach the abstraction of color from the object. Paul Gauguin: "La couleur pure! Et il faut tout lui sacrifier. (Don't work so much after nature. Art is abstraction.)" The liberation of color from its representative function, from its local color led to the abstraction of color from the object. This abstraction of color, this triumph of the autonomous value of color led ultimately to the object being banned from the

picture by abstraction. The abstracted autonomous value of color laid the foundation for abstract non-representational art.

This analysis of color on the basis of the dispersion of light was influenced by scientific works such as:

Charles Blanc, *Grammaire des arts du dessin* (1867).

Michel Eugene Chevreul, *De la loi du contraste simultané des couleurs* (1839). Translated into English as *The Principles of Harmony and Contrast of Colours, and Their Application to the Arts* (London, 1854).

Ogden N. Rood, *Modern Teaching of Colors* (1881).

Charles Henry, *A Scientific Aesthetics* (1885).

The analysis of color not only increased the autonomous value of color, of the material, it also increased that of the method. Painting was no longer a personal, romantic improvisation but a scientific method. "I paint my method," Seurat said, "nothing else." Paul Adams wrote in 1886: "Through uncompromising application of a scientific representation of color and its strange innovative qualities Pissarro, Signac and Seurat ostentatiously represent the definite trend of impressionistic art." In 1887 Pissarro called himself a "scientific impressionist", looking for art "that is in keeping with our times." Félix Féneon described the post-impressionist technique as a "conscious and scientific style, an impersonal and in a certain sense abstract treatment."

The discovery of the intrinsic quality of color ushered in abstraction. Abstract painting became an autonomous world of colors and forms. The break with the outside world, the ban of the object, the rejection of external references automatically