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LEONARDO THINKS

Opinion: : Recovering the Wholeness of Art: Information versus Material

ISSN No: 1071-4391

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Originally published in: *Leonardo* Vol. 24, No. 3 (1991), pp. 259-261

Print: ISSN 0024-094X, Online : ISSN 1530-9282, DOI:

<http://www.jstor.org/stable/1575562>

There is a new trend in the world of 'technoscience art' away from the kind of kinetic art popular in the 1960s and 1970s-art-based mechanical dynamics and ecological (or 'phenomena') art, based on the biological and physical laws of materials. People are becoming more interested in a digital, synthetic type of visual art based on electronic media such as video and computers. Especially appealing to both audiences and artists is the recent appearance of virtual-reality technology. This technology has influenced the mainstream of technoscience art with the introduction of 'interactive art', a world of computer-simulated visual art in which people can participate directly. Within this simulated art world, although sensual experiences with realistic 3D objects is only pseudoscopic, people can enjoy the thrill of a trip, both alone and together with others. People can now walk through cities of the imagination, involving themselves in realistic 3D television games.

But what has happened to the delicate tactile and olfactory senses of phenomena art and of the ecological, kinetic art of the 1960s and 1970s? Are these to be no more than dreams of days gone by, or outcast symbols of materialism? I had the experience of organizing exhibitions of both phenomena art and interactive art in Japan in 1989. I am convinced that there is room for both types of art to coexist. In fact, I see these two types of work as complementary, each compensating for deficiencies in the other.

If we look back, we see that art itself started as a way for the mind, each person's inner self, to experience virtual reality in a wider sense. From cave paintings, through the writing of fiction, to the miscellaneous forms of visual art today, art has always worked as a catalyst to evoke in the imagination each person's sense of reality. It is the imagination itself, however directly or indirectly, that must arouse in each individual memory the sensual experiences of one's daily life. Marcel Proust was able to revive memories of times past just by dipping his Madelaine teacake into a teacup; the tactile and olfactory senses are able to act as a catalyst to inspire this imagination.



When we compare such vivid sensual experience of daily life in times past to the urban life of today's consumer, automation technology, we often feel that we have lost contact with the vividness of nature. The recent appearance of virtual-reality art might, in a sense, be running parallel to the modern sociopsychological human condition.

Although it is no doubt a great challenge and a great act of creation to develop the technology to stimulate a realistic relationship between people and environment, one has to wonder why artists, who are likely to be among the more insightful and sensitive of human beings, must confine their activities to a narrow monologue within virtual-reality digital technology. We need to be more concerned with the role of art as it affects all of us. Art has, of course, always been humanity's highest form of the expression of freedom and imagination. But, at the same time, art might well have started, as Jacob Bronowski suggested, as a tool for human survival. We have relied on the compensating power of art for centuries. Since the Renaissance, we have seen art not merely as a kind of 'sleeping pill' but also as something with genuine healing power, a stimulant to recovery. It is in such society as ours, in which one tends to be unable to distinguish between reality and artificial reality and ends up chasing daydreams, that the healing power of art is most effective.

We understand now what Joseph Beuys wanted to express by using raw materials in his artworks. He used organic and inorganic substances such as fat, felt, beeswax and copper metal in his works not only as a metaphor for his own critical experiences in wartime but also as a form of social and ecological art. His inner motivation is evident in his active membership in the Green Party.

I am not at all against the art of virtual reality. I value it highly and believe in it, frankly, as a way to connect our minds to our environment. In our interactive art exhibitions, we watched how much people enjoyed the artificial-reality art created and presented by such unique pioneers in this genre as Myron Krueger, Jeffrey Shaw, David Rokeby, Vincent John Vincent and Ed Tannenbaum. Rokeby, for example, showed that the media can work as tools to help disabled people make music. He tries to use virtual-reality media not to escape reality but rather to gaze at it more directly. Nor do I overlook the positive role that information media technology such as the television, telephone and facsimile have played recently in helping generate global consensus on environmental problems and issues of human rights.

Let me make clear at this point that what I am arguing for is a balance between both types of art in this age. A harmony is possible in our personal and social lives between the art of synthetic reality, based on information technology, and the art of the five human senses, based on material.

I have a vivid memory of a visit, in 1971, to the Museum of Fine Arts in Boston, where I saw an exhibition called *Earth, Air, Fire, Water: Elements of Art*. It was an eye-opening show for the public: the flow of liquid, the power of surface tension, hidden solar energy and the behavior of natural phenomena. The experience reminded me of the philosophical point of view expressed by Gyorgy Kepes in *New Landscape*, his collection of essays and photographs on natural materials and phenomena as seen from a scientific perspective [1]. A similar approach to art can be traced back to Goethe or Rudolf Steiner and is



more closely related to the ecological problems we face today. It was also reflected in the adventure-filled Exploratorium as a place for everybody to participate with their own five senses in the wonders of art and science.

Even more memorable than my visit to the Boston exhibition was an earlier exhibition on the East Coast of the United States. It was a 'software' show at the Jewish Museum in New York, full of information technology. In it were many pioneering technoscience artworks in virtual reality. Even Nicholas Negrapontes's Seek, an experimental model of the computer city of the future, was displayed there. There were also many examples of an integration between computer technology and natural phenomena in this show.

On my way back to Japan from the United States in 1971, I visited the University of Utah and experienced a very innovative, head-mounted device containing a 3D viewing glass. This glass enabled the wearer to walk around in a wire-framed computer-graphics image floating within the room. It was actually the prototype of the 3D viewing helmet in its earliest stages. That was a time, the early 1970s, in which people participated in both types of technoscience art and switched back and forth from one type to the other.

Of course, it is not necessary for artists to do both types of art. One unique computer-graphics artist, David Em, recently told me that he has switched back to 260 Editorial making sculptures because he felt a strong desire to be able to put his hands on real substances.

There must be several ways for the two types of art to coexist, even now. It is possible to integrate both the computer and material-handling technology. Also it might be useful to find new types human interface between the body's muscular power and virtual and visual environments. Another possibility is the combination of electric discharge phenomena or magnetic-field phenomena and computer-generated images to create a virtual environment. If new sensors could be invented to detect all kinds of delicate types of sensual stimuli, and were it possible to synthesize a more realistic artificial flavor for taste or smell, the sensors would deepen our experiences in the future with virtual-reality art. At the same time, however, this innovation would lead to another paradoxical dilemma within such virtual 'total experience': we could easily lose reference to reality within such a hyperreal environment. The trick would be to keep the subtle sensitivity we possess in identifying the difference between real and artificial flavors, for example. The more sensitivity we nurture in our senses, the less we shall be satisfied with virtual reality, although we would not want to lose the contribution of virtual reality to art.

In providing art education to young children, it is urgent that we find a balance among art activities. If all they learn in school is computer literacy, is it really enough that we turn out computer hackers? There must be an alternative way to lead them to interactive dialogue with materials by means of their five senses. Computer power can be connected to both real-life activity and to the creation of mixed-media sculpture and both kinetic and phenomena art. Group training could be conducted to improve the chances of children making contact with the natural environment more often. A good example of this is the Vivarium Project, directed by Alan Kay and Ann Marion, in which children participate not only by creating a computer simulation of the behavior of sea creatures but also by experiencing the actual seaside and interacting



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with fish and seaweed in their ecological environment. The project has a healing power over the 'virtual-reality syndrome' from which children often suffer.

David Bohm has said of modern science that it has lost its wholeness and become reductionist. If the main trend in art today continues to follow its present course toward virtual reality, it too will be reductionist and lack a wholeness. It is this wholeness that art today must maintain if we are to ensure the vitality of our future.



Endnotes

[1] Georgy Kepes, *Neuw Landscape* (Chicago: Theobald, 1956).

Bio: Itsuo Sakane, an essayist and critic in the field of media art and culture, is the Emeritus President of IAMAS. He has received many awards for his work including the Japan Design Award 82, Golden Nica of Honor for Life Achievement at Ars Electronica 2003, the Commissioner for Cultural Affairs Award Japan, 2003.