Artists and Technologists: The Computer As An Imaging Tool

Lucinda Furlong

Despite the fact that the computer is a relatively recent invention, the debate over whether or not computer-generated art works can truly be called "art" has roots in a much older argument about technology. The usual objection to "computer art" is based on the fear that somehow the computer — like Hal in the film 2001 — will take control, eliminating the role of the artist. A less paranoid but equally misplaced response construes the absence of handwork to represent easy art, requiring less skill than more traditional forms. Similar objections were raised when photography was discovered. In 1859, Charles Baudelaire considered photography as nothing less than a major threat to the entire fine art tradition. He wrote:

> It is nonetheless obvious that this industry [photography], by invading the territories of art, has become art's most mortal enemy, and that the confusion of their several functions prevents any of them from being properly fulfilled .... If photography is allowed to supplement art in some of its functions, it will soon have supplanted or corrupted it altogether..[1]

As photography critic and theorist David Jacobs has pointed out, this rejection of photography stemmed from a worldview —prevalent since the Industrial Revolution — which opposed "man" to machine. Accordingly, certain values were attributed to each: "Man was construed in Romantic terms, with emphasis placed upon inspiration and the God-like qualities of creativity. Cameras were mechanistic, without feeling or bias. Depending on how one looked at it, and the photography-as-art question opposed subjectivity to objectivity, art to science, humanism to technology, or God to Satan."[2]

Vestiges of this debate are still prevalent today in the form of would-be doomsayers and visionaries who expound on the pros and cons of life in the computer age. Anyone who has worked with computers is familiar with this set of dichotomies: rather than the camera, it is the computer that has come to represent the mechanistic, objective, scientific sphere. It is incapable of producing art, so the argument goes, because it is a machine, contradicting the myth of the artist who stands poised with paintbrush in hand. The flip side of this belief is the assertion that computers bring out the artist in everyone. The error in both these attitudes is the underlying assumption that technology is a force unto itself rather than a set of inventions by humans who are responsible for their use and abuse. Since technology does not function autonomously, it is as illogical to say that the computer threatens the creative process as it is to embrace the opposite extreme.

Acknowledging that the computer is merely a tool, how can we look at the work in the SIGGRAPH '83 Exhibition of Computer Art? This exhibition is unusual because it brings together work by two disparate and usually segregated groups of people — artists and technologists. These two groups bring very different sensibilities and priorities to their work. For some, computer imaging is a problem-solving exercise: once a particular technique is mastered, the programmer tackles another one. Others are interested in how those techniques might be used to implement an idea or generate meaning that lies beyond the technical problem at hand.

For the observer, the most obvious way to engage a work is from a technological standpoint: one usually wants to know how a particular work was produced, and what it represents in terms of the hardware and software used. Examples of state-of-the-art virtuosity abound in this show, and are significant for their technological achievement. However, this aspect of a work becomes secondary when one attempts to place it in the context of a broader visual history. For as John Berger has pointed out, "when an image is presented as a work of art, the way people look at it is affected by a whole series of learnt assumptions about art."[3]

These learnt assumptions — culturally-determined ideas about what constitutes an interesting and meaningful art work — are held not only by the observer, but by the maker, and are rooted in one's background. Thus, what an artist sees as interesting may be utterly simplistic technologically; conversely, what is impressive technologically may not be so impressive in relation to contemporary art. This is not intended as a value judgment, but to point out that different criteria are used in different contexts. However, since this is an art show — and not merely a display of the latest in technology — it is important to examine the work in the context of the conventions of art.

It would be futile to try to rigidly categorize a group of works whose only common thread is the fact that they were produced with the aid of a computer. However, there are some generalizations that can be made about what traditions these works — consciously or unconsciously — are drawing on. What is unique about the computer is its capacity to generate and process information that may be transformed and displayed in any number of ways — whether it be videotape, plotter print, photograph, or Scanamural. Theoretically, this flexibility presents the artist with a choice as to what format is best suited to his or her idea. In practice, though, the final product often has more to do with the tools at one's disposal.

While most of the works in the SIGGRAPH '83 Exhibition of Computer Art are photographs and plotter prints, a number of pieces expand our understanding of the term "hardcopy." They include: Margot Lovejoy's fold-out, a hand-colored Cloud Book; Luciano Franchi de Alfaro III's The Band, a hand-colored digitized image on handmade paper; Darcy Gerbarg's ceramic tiles entitled Auroale; David di Francesco's stone lithograph; Deborah Gorchos's Eyed 2B, a digitized image transferred to fabric; and Sheila Pinkel's woven plotter print. Dan Sandin's holograms and David Morris's computer-aided sculpture further stretch the boundaries.

A number of people have begun using the computer as an extension of their work in photography and electronic imaging. Among them are Sonia Landy Sheridan and Ron MacNeil, a faculty member at M.I.T.'s Visible Language Workshop. MacNeil's 12 x 12-ft. air brush plotter print, Dog Rock, raises the issue of scale: like large-scale paintings and photographs, one must view the image from close-up and distant vantage points. Sheridan — a pioneer in xerography as an artist's medium, and theorist of what she calls "generative systems" — exploits the computer's serial possibilities in the print, Stretching Jim in Time. The distorted portrait lies somewhere between the still and moving image, becoming an artifact of the passage of time. Works by Grant Johnson, Copper Giloth, and Phil Morton demonstrate a similar concern, underscoring the idea that the serial image is perhaps more reflective of the computer's potential than the singular image.

The computer's flexibility as an imaging tool also means that the final product can take on the characteristics of other media. Thus, much of the work in the exhibition draws on the visual conventions of more traditional forms. Ralph Hocking's plotter print of a semi-abstract nude resembles an etching; Nancy Gardner's Polaroid print,

June Blues, mimicks watercolor with its horizontal "washes" of pastel colors; Monique Nahas's and Herve Huitric's Souvenir de Vacances looks much like a pointilist landscape; and a good number of people — Frank Dietrich, Eleanor Kent, Eudice Feder, Michael O'Rourke, and Alice Kaprow, to name a few — have produced works that rely on the same formal ideas as modern abstract painting. This fact has been a source of criticism: if it is merely mimicking other forms, why bother to use the computer? People forget, however, that whenever artists work in a new medium, they initially draw on their visual antecendents. Early photography was discussed in terms of 19th-century painting, and early abstract videotapes of the late 1960s and early '70s were compared disparagingly to modern formalist painting. What's most important is for artists to acknowledge this visual history as such, and use it as a point of departure.

Not all the work in the exhibition specifically reflect conventions of fine art. Probably the most common use of the computer is for commercial graphic design and illustration. There are a number of examples of fine graphic work, among them Collette Gaiter-Smith's Showers, and untitled works by Jean Tracy, Laurence Gartel, and Mike Newman. Contemporary illustration is represented by Marilyn Abers's untitled Cibachrome print, Joe Pasquale's Hello Plugs, and Ned Greene's Mondo Condo.

The 20 videotapes included represent a number of different approaches to the medium. Probably the most traditional — if that word can describe such a young art form — is the integration of electronically synthesized images and music. Guenther Tetz's V and Dots, Stan VanderBeek's Spectrum Six, Dean Winkler's and John Sanborn's Act III, and Calypso Cameo, a collaborative work by Winkler, Vibeke Sorenson, and Tom Dewitt, all explore variations on graphic and aural themes.

Other tapes are more akin to the "concept videos" of Music Television, in which a popular song is illustrated. These include JoAnn Gillerman's Clone Baby, and Big Electric Cat, by Sanborn, Winkler, and Kit Fitzgerald. Still another genre is the dance tape. Both Oua Oua and Digital Dancer by Ed Tannenbaum, and Moving Along with X, Y Axis, by Roberta Hayes and Robert Coggeshall provide fine examples of how digital effects can transform and accentuate — rather than merely record — a dancer's movements.

Some tapes don't fit neatly into any category. Jane Veeder's Floater addresses one aspect of the phenomenology of seeing — how our eyes perceive movement — by using real-time animated graphics as retinal stimuli. Barbara Buckner's Greece to Jupiter: It's a Matter of Energy is a series of graphic depictions of how energy changes in space and time. In Bob Snyder's Trim Subdivisions, images of tract houses are manipulated in such a way that the tape becomes a play between two-dimensional flatness and three dimensionality. In Yoichiro Kawaguchi's Three Pieces, geometric forms come to life as clay-like fantasy characters that perform a series of sophisticated movements.

Citing photography's recent mainstreaming, some artists who work with computers feel it is only a matter of time before their work is also accepted, and to some extent, this is true. However, it should be kept in mind that "acceptable" is usually synonymous with marketability. For example, all talk of whether photography was "art" or not subsided when that medium was assimilated into the art print market around 1978.[4] Similarly, it is the reality of the marketplace that will play a bigger role in the computer's acceptance — not rhetorical debates over its merits and deficiencies as an artist's tool.

Notes

1. In "The Salon of 1859: The Modern Public and Photography," reprinted in Modern Art and Modernism, edited by Francis Frascina and Charles Harrison (New York: Harper and Row, 1982), p. 20.
2. In "Of Cretans and Critics: In Search of Photographic Theory," Afterimage, Vol. 10, No. 7 (February 1983), p. 9.
3. In Ways of Seeing (New York: Penguin Books, 1972), p.11.
4. See Jacobs, ibid.

Lucinda Furlong is a critic, and a frequent contributor to Afterimage, a journal of photography, video, independent film, and artists' books. She is currently working on a history of the "image processing" genre of video art, through a grant from the New York State Council on the Arts.

A Medium Matures: The Myth Of Computer Art

Gene Youngblood

We embark upon SIGGRAPH's second decade with a growing conviction that the leading edge of culture is no longer defined by the fine arts community — by what's being shown in galleries, purchased by museums, published in art magazines or talked about in SoHo lofts. The excitement and power and significance today seems to lie in electronic technology, especially the computer, which we are convinced will reveal the way to unlimited new aesthetic horizons and produce wholly new art forms. And yet the idea of computer art — of an art unique to the computer — remains after twenty years an unrealized myth, its horizons barely in view, its forms still to be manifest. For, ironically, most of what is understood as computer art today represents the computer in the service of those very same visual art traditions which the rhetoric of new technology holds to be obsolete.

For this reason, one might well take the view — only partially as Devil's Advocate — that there is in fact no such thing as computer art. In the first place, art is always independent of the medium through which it is practiced: the domain in which something is deemed to be art has nothing to do with how it was produced. Art is a process of exploration and inquiry. Its subject is human potential for aesthetic perception. It asks, how can we be different? What is other? It is a mode of consciousness, a way of being in the world. This requires a medium, of course, but the properties of that medium, the techniques that define it, do not constitute the exploration they facilitate. It is not paint that makes a painting art — even if the subject of the painting is painting itself.

In the second place, the boundaries of computer art as we know it today are circumscribed by a much larger history — that of the fine arts tradition — which contains all visual art and defines its possibilities. The use of the computer in the production of drawings, prints, textiles, ceramics and sculptures does not suddenly transform these ancient traditions into "computer art" — they remain painting, drawing and sculpture and their status as art will always be determined by art-historical concerns, not by any consideration of the computer's role in producing them. The myth of computer art is that it is visual art.

This is not to imply that computers do not give us new visual experiences. Three-dimensional animation, for example, is not only unprecedented in a visual sense but may well qualify as a truly new art form. Combining the objectivity of the photograph, the interpretive subjectivity of the painting and the gravity-free motion of hand-drawn animation, "digital scene simulation" is by far the most awesome and profound development in the history of symbolic discourse. It is possible to view the entire career not only of the visual arts but of human communication itself as leading to this Promethean instrument of representation. Its aesthetic and philosophical implications are staggering, and they are ultimately of profound political consequence. But the question whether a particular work of 3-D animation is Art will be addressed in a historical context that need not — and should not — take into account the medium through which it was produced, no matter how dependent on that medium it may be.

Art and Ontology

This seems sufficient cause to question the whole premise of Art and Technology. On one level this movement has simply been the art world's way of acknowledging that new technologies have a lot of cultural significance, and Art is a status-conferring label that means "this is culturally significant." But this validation is frequently bestowed on technologies whose actual significance may have nothing to do with what has traditionally been understood as art. Perhaps the "and" in Art and Technology should be changed to "or," for so many of our entrenched assumptions about art are inappropriate to new technologies and actually prevent us from realizing their unique potential.
The true aesthetic significance of the computer will be revealed only when we begin to explore that which is unique to it regardless of whether the results are art-like or not, or whether the art world acknowledges it. Whatever the case, I suspect it will not have much to do with producing anything at all — for what is most unique about the computer is precisely its intelligence, that is, its interactivity. In other words, the great value of the computer is ontological rather than phenomenological — it has more to do with processes of being in the world (ontology) than with the consequences of our being here (aesthetics, phenomenology). This is repeatedly confirmed by computer artists themselves, whose testimonies are almost always ontological, seldom phenomenological — always about the processes of producing the art through in-