

## MOSS ON THE NORTH SIDE

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The attached article may be considered a continuation of my argument that computers are only tools -- in this case, artists' tools. One of the minor points in the article that fascinates me is the way minor programming bugs (causing somewhat unexpected computer behavior) turned out to be an advantage for this use. By the way, this is also an example of the interactive use of a computer, which will be the dominant type of use pretty soon; that's as opposed to the older type, alluded to in the article, where you do all your planning (i.e. programming) ahead of time, dump the stuff into the computer, wait a while, and then get a chunk of stuff out of the computer (which you take back to your room for work on the next cycle). For artists, I see this as the difference between using the computer as a paintbrush versus merely a printing press.

### MAILING COMMENTS:

PAULINE: I recall disliking LANGUAGES OF PAO intensely, though at this late date all I can remember is a feeling of great disappointment at what should have been a fascinating use of linguistics in SF. I think my major objection was to the oversimplification -- as I recall, Vance essentially makes the language all, so that it becomes the complete determiner of the social structure. Not having the words for a concept makes it harder to get it across to someone, but people are adept at coining words for new concepts. Unfortunately, to use linguistics realistically in a story it has to be part of fully realized societies, which means it's no longer a "gimmick" ~~xxx~~ story (which LANGUAGES OF PAO was).

DAVID: I like your definition of art as relationships, no matter what the subject matter -- for one thing, it allows for art in mathematics, which deals ~~wh~~ with the relationships between concepts. But isn't there also an aesthetic component? One of the differences between "good" mathematics and "bad" is an elusive quality usually referred to as "elegance". In essence, an elegant proof is a thing of beauty -- it is usually concise, but not always; it will often have a quality of I don't know, surprised obviousness? The surprise that something is true combined with an "of course, it was there all the time" feeling? That kind of balance between surprise and expectation you get in music, for instance. The proof that the square root of 2 is irrational is elegant, and takes up about half a page; it requires nothing more than a knowledge of arithmetic. The proof of the 4 color theorem involved, I believe, a computer examination of some quarter of a million special cases -- it is not elegant. Obviously "aesthetic" is a highly subjective term -- but do you have art without some concept of it? (And can we assume that human beings have enough in common that we can use the word for some shared experiences?)

ROBERT: I'm finding your China trip report fascinating -- do keep it up. The Hong Kong commercials you describe give me a feeling of horrified fatalism about the Westernization of the world. Wu Fang soap crystals, indeed. Incidentally, re middle class ads for lower class audiences, I think one of Vance Packard's books shows that people will try to raise their social status by buying (or claiming to buy) more prestigious products (e.g. they will tell interviewers that they drink a higher-priced/better quality liquor than they actually do); so you, too, can feel middle class by merely purchasing one small package of Wu Fang soap crystals -- the brand that schoolteachers use!

"Canadians have no constitutional rights except to make sure that the proper level of government is oppressing them."

-- Jennifer K. Bankier, ORCA 2



A P.S. to the Hong Kong TV comments: Do you have any idea how many TV's there are in Hong Kong? That might be the quickest way to estimate the size of the middle class.

JEANNE: Do you feel that communicating is in any way a part of art? Skirting for the moment the case of the unpublished Shakespeare (if a tree falls when there is no one to hear it, does it make a sound?), do you really feel that all connections are art, even when they are not even theoretically in a communicable format (keep away from her, she's got a communicable concept!)?

I'm thinking this out as I type, so it will be somewhat incoherent -- speaking as audience, I do agree that connections are the essence of art; but in addition, it seems to me that what an artist does is take these perceptions of connections and transmute them into a form that can be communicated to others. Further, the form itself has aesthetic qualities -- let me amend that -- the form plus content, the whole communication, has aesthetic qualities or can be judged aesthetically. That's where the value judgement comes in, and also where the skill enters. There is skill involved just in making the connection; there are other, more technical skills involved in "executing them in some non-ephemeral substance." Does this make sense?

Now, consider the difference between a painting and a window. The painting is already a transmutation of reality -- things have been selected, connections have been highlighted or de-emphasized -- the painting is reality filtered through someone's mind/hands. The window is the pristine reality, in all its "booming, buzzing confusion" (William James). From my outlook, vaguely Taoist as it is, this pristine reality simply is. It has no message to convey, no axes to grind, and you get out of it what you put into it. (I have a computer scientist friend who does frighteningly accurate Tarot readings which he rationalizes as imposing his patterns on the cards; he says the card symbols are rich enough to support an infinite variety of connections.) My reactions to it are very different from something which is presented to me as a human artifact. I could not help but react differently to the same lump of wood if told a) it was sculpted or b) it was a product of erosion. That's one reason why I'm disturbed by paintings that appear to be totally random paint droppings (I put random computer art in the same category as works of nature -- it may be accidentally pleasing, but there's no meaning in it).

To the extent that one believes the world is a conscious work of art, and that the Artist can be seen through the work, I suppose there shouldn't be much difference between what one brings to the window vs. the painting.

Shouldn't there be a difference between the random events you encounter on the street and, say, the Micro-theatre in Delany's TRITON? Or is it just that there ought to ~~be~~ more connections produced when one experiences an artifact than when one sees raw nature? Hmmm. The difference between the painting and the window is that the painting shows a little more skill? (Mind you, it's not as rich in potential as what is outside the window, where the connections are infinite, but just restricting ourselves to the visual impact of this small rectangle ...)

On value judgements and universals -- suppose there was a non-circular definition of "universal". So that you could point a meter at a painting and say, on a scale of 1 to 10 this rates 7.36 universality. Or, let's say, 87.6% of all the possible North Americans can appreciate it, 67.3% of all the possible human beings can do so, and 36% of all live-bearing sentient beings with similar color vision can learn to do so. Just suppose. Would this have any bearing on whether you thought it was art? Or good art? (Suppose that your personal aesthetic judgement agreed with the meter.)

I don't think the actual audience a work reaches should be relevant -- only the potential audience, so that vagaries of geography and economics should be irrelevant to a judgement of quality. One must somehow pretend that the unpublished Shakespeare was published, that the ballet was seen by the whole world, past, present, and future. Oops, out of room. See you at Norwescon.

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# Computer Broadens Sculptural Vocabulary

## *Without Detracting From Work's Organic Character*

By Marguerite Zientara

CW Staff

NORTHFIELD, Minn. — In an effort to intensively explore sculptural form and shape and to "expand his vocabulary," an artist developed a complex process of computer manipulation that enabled him to reduce three-dimensional sculpture to two dimensions.

"Although sculpture is three-dimensional, we see it as a series of silhouettes; the edges of shapes are always very important," according to Ray Jacobson, a sculptor for 20 years and currently the chairman of the art department at Carleton College here.

"I wanted to emphasize the silhouette aspect by starting with the three-dimensional form and then extend it into a flattened image," he explained.

To implement his plan, Jacobson created six small-scale sculptures cast in bronze to be analyzed by computer. While his sculptures can be classified as "vitalistic," or echoing the vital,

growing and changing forces in nature, he planned to use the apparently contradictory technological tools of the day to dissect those factors.

"It was an adventure on my part, as well as a friendly overture to the computer so that I could come to a better understanding of it and a closer, friendly position to it," he said.

"One clear reason I wanted to use the computer for this piece of work was that, being quite aware of the impact of the computer on our daily lives in this technical culture, I wanted to try to utilize it as a tool rather than something to be feared or suspected," he added.

In beginning his project last spring, Jacobson first approached the DP personnel at the college seeking two technically oriented students who might have the "initiative, sustained interest and flexibility" to work on a student-teacher team effort of this kind. The students were recruited, and Jacobson began laying the groundwork for the

actual computer interaction.

The artist first made the six small bronze sculptures (approximately 4-by 3.5- by 3 inches high) and had them photographed from several different angles (Figure 1). He then made simplified drawings from the photographs, recording the contours as well as the dark and light areas of the photographs.

### Customized Grid

With the help of the students, Jacobson transferred the simplified drawings onto a specially made, transparent grid placed over the drawing, coding each point of the drawing according to its gray, black or white value.

The customized grid was calibrated in squares 1/16th of an inch square, totaling several hundred points and resulting in an exact record of the drawing's configuration against the grid.

That information was input through a Tektronix, Inc. 4006 printer terminal

to the school's Digital Equipment Corp. PDP-11/60 minicomputer running under the RSTS/E operating system. The result was 24-inch-long printout sheets holding the factual information about each drawing.

Next a Carleton student wrote a "rudimentary" program whereby Jacobson's shapes could be stretched, shrunk, expanded and juxtaposed on a CRT. The school's summer recess took that student away, and the work was continued by another student, Andy Luebker, now a sophomore at Carleton.

### Manipulation on CRT

Working in Basic Plus, Luebker refined the original program to allow full manipulation of the drawings' shapes on the CRT (Figures 2, 3 and 4). "I could expand each drawing in horizontal or vertical directions [at the CRT] just by changing the scaling of the screen," he explained.

To do that, he used Middlebury





*The acrylic on canvas (above), painted by Jacobson, incorporates aspects of all the computer-generated images. Jacobson considers it 'two-dimensional sculpture.' Its actual size is 48- by 60 inches. In photo at left, the artist is shown at work in his studio.*

College's Plot 06 plotting program, which would allow him to plot horizontally or vertically any number of units per inch.

"I had to write my own routines for some things, like rotations," he noted. "There were instances when I set out to do something, and the routine I wrote wouldn't do exactly what I had planned. This would give it a controlled randomness that I found Ray liked, whereas I just thought of it as a software bug."

Luebker and Jacobson sat at the CRT "by the hour and by the day," working with the images "in an ongoing way, responding to the images on the spot in a direct minute-by-minute manipulation of the computer," Jacobson recalled. He acted as the artistic director while Luebker handled the technical details.

"We used the computer truly as a tool, giving enough information to get a very brief result, responding to that result and constantly changing the im-

age, guiding the computer toward usable results," Jacobson commented. "In that way it was like working on a canvas."

#### Computer 'Very Seductive'

According to Jacobson, his artwork using the computer differs from other computer artwork in its flexibility. "Others may input a rather complete program to the computer and the result comes out reflecting that program, whereas ours was a very flexible, inquiring experimental approach," he pointed out.

"Very importantly," he added, "I didn't permit the computer to give us any forms that weren't a direct reflection of the bronzes. I know the computer is very seductive and can produce some very interesting imagery, but for me it tends to be a 'junk image' and we tried to avoid that."

While the students were "conditioned" to try to eliminate errors in programming because of their proficiency in computer science, in the artwork the errors could work to the advantage of an image. "This was a kind of an enlightenment for the students," the artist said.

After producing 100 workable images reflecting the characteristics of

the three-dimensional bronzes on a flat surface, Jacobson selected five of the images printed by the computer and had them photographically enlarged to 40- by 60 inches (Figures 3 and 4).

These large sculptures dramatize the computer language itself and the shape qualities derived from the small-scale bronzes. "I don't think there's any way that I or probably anyone else would have come up with those images starting with pen, brush and paper," he remarked. "They are totally the computer's."

#### Paintings Represent Composite

From those large, two-dimensional "sculptures," Jacobson went a step further and painted five large acrylics on canvas (Figure 5), which he also calls two-dimensional sculpture.

The acrylic paintings are a composite of all the previous processes — bronze sculptures, photographs, drawings and computer programs. "Although the acrylic images hark back rather directly to the sculpture, they also are very reflective of some of the computer images [not shown here]," he noted.

In the future, Jacobson may execute larger, three-dimensional sculptural forms working from the computer-

generated images he has.

The use of the computer in sculpture has broadened his sculptural vocabulary, Jacobson said, without taking him in a different direction from the usual "organic" nature of his work.

#### 'Erosion Effect'

"There was an erosion effect going on," Jacobson explained. "Just as natural forces wash and shape a rock with water, sand or wind and give shape to the world around us, I was nursing these forms, orchestrating the shape of the computer images."

"These works represent a combination of natural forces and technology."

Jacobson thinks that the computer art that exists today "is only the beginning of what is possible. I think perhaps the computer will become more blended with the creative process and will be used as a traditional art tool in a more flexible way than it has been previously."

Although Jacobson intends to use the computer "from time to time" in his artwork, he has no idea what the ultimate result might be. "I don't have any particular end or direction in mind, I just know it is potentially very useful and I'll do some further exploration with it," he said.

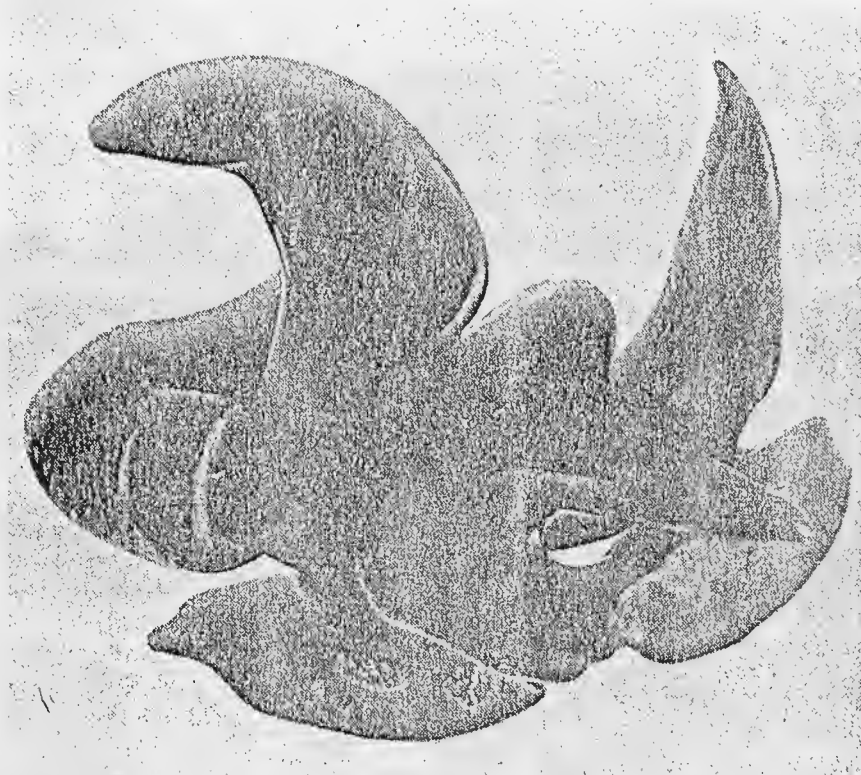
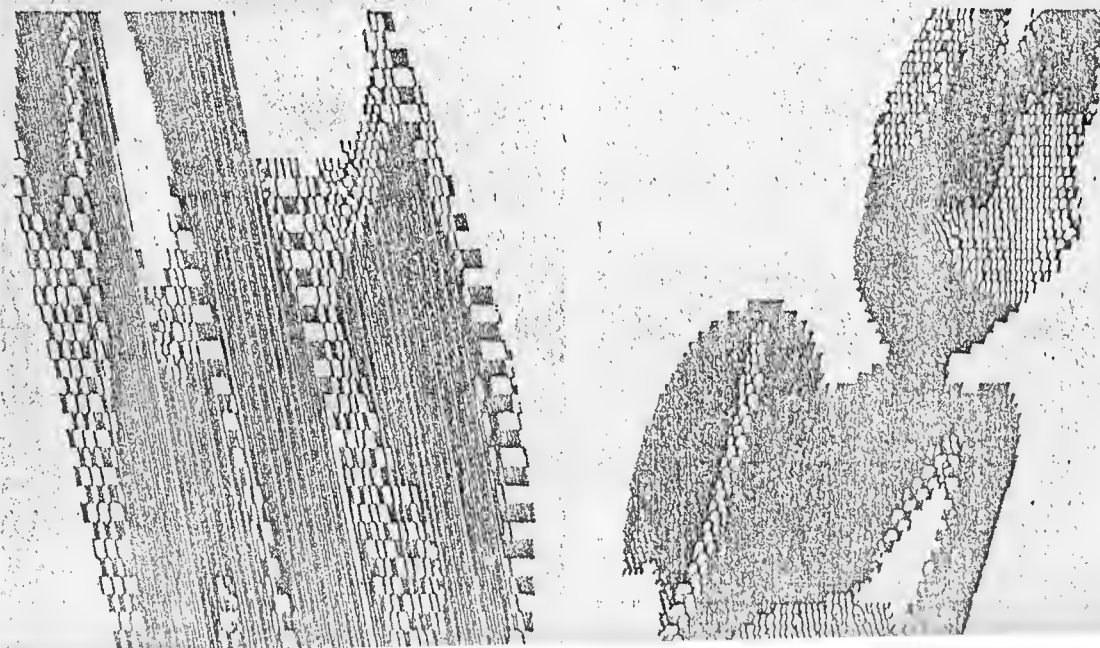
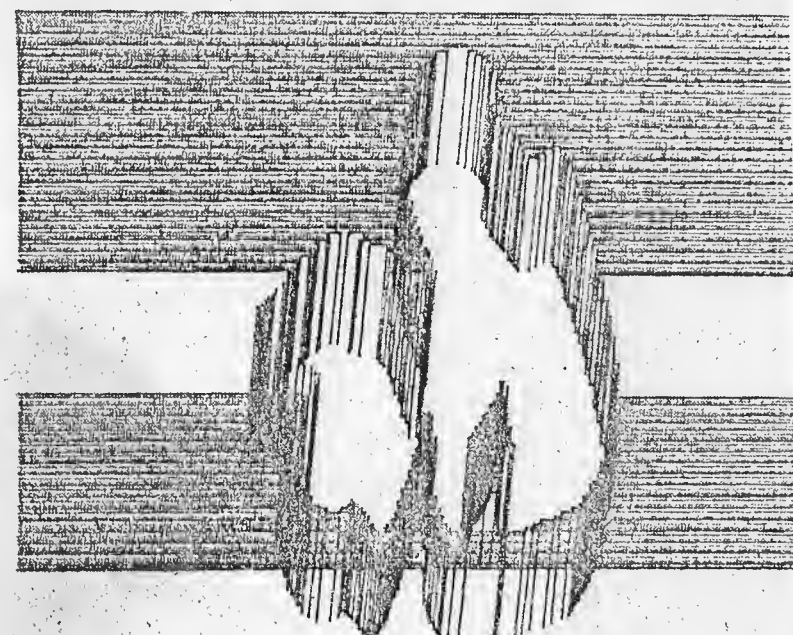
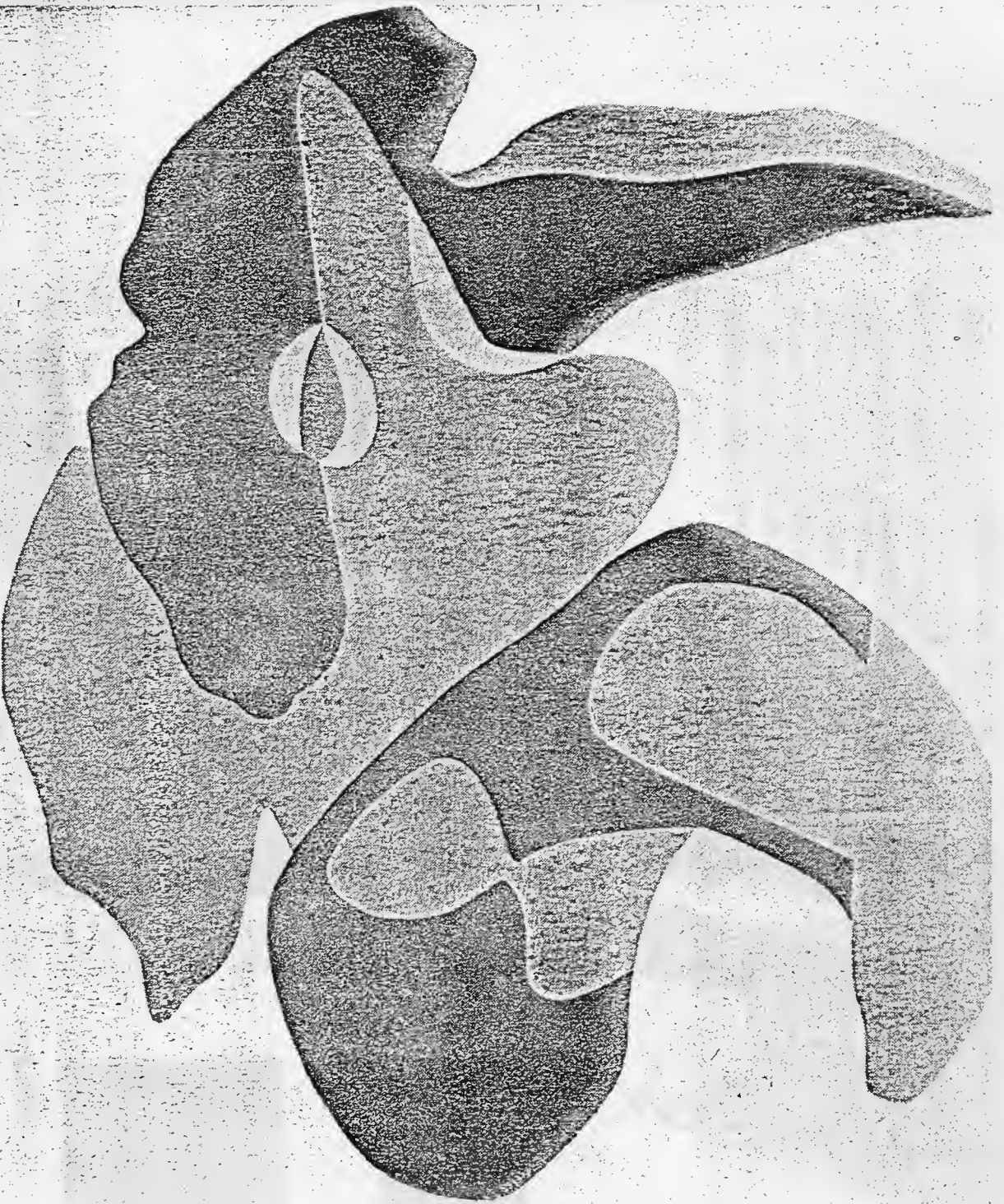


Figure 1

Figure 1 shows one of the six untitled bronze sculptures that served as the starting point of Jacobson's computer-assisted work; Figure 2 is a computer-generated image in which the bronze is reduced to two dimensions. Figures 3 and 4 are enlarged computer-generated two-dimensional sculptures that dramatize the small 'building modules' of a strong, bold image.

Figure 2





The acrylic on canvas (above), painted by Jacobson, incorporates as-  
pects of all the computer-related concepts.

