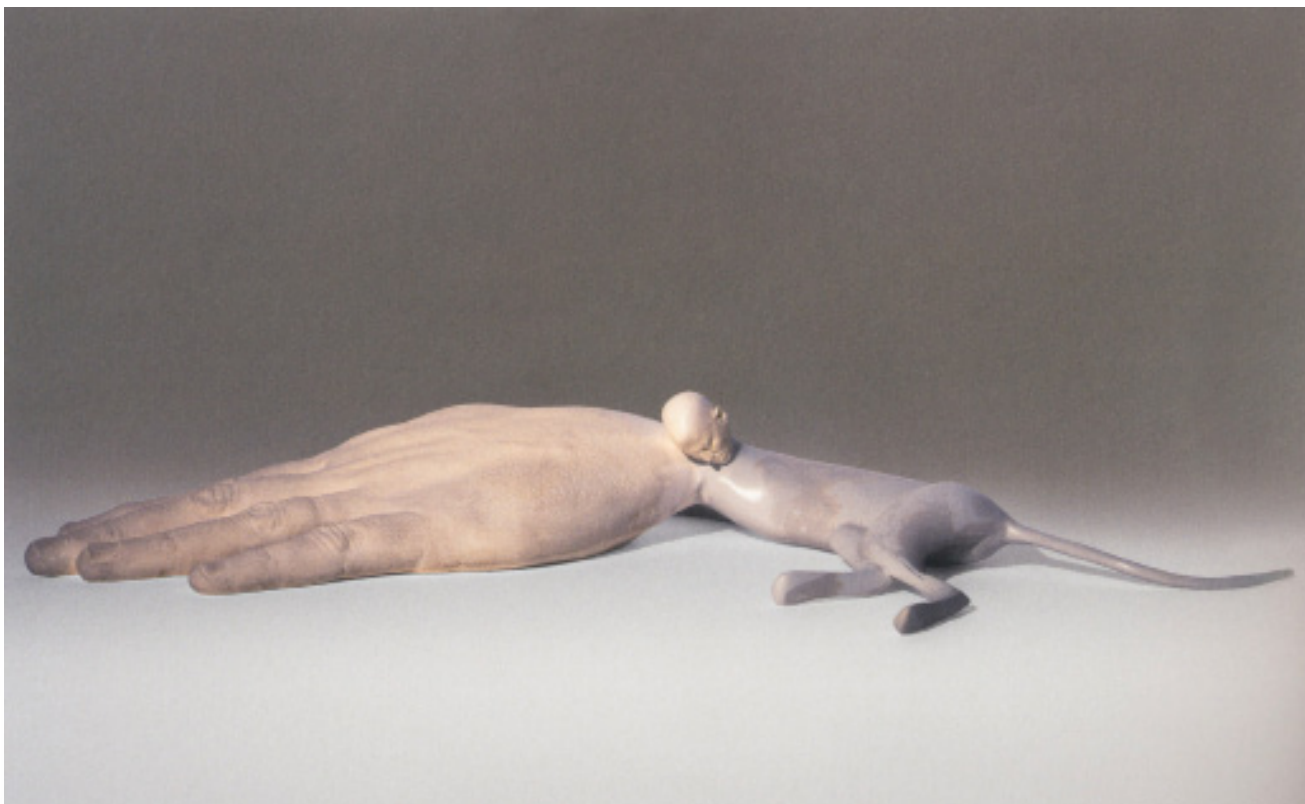


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PONDICK AND TECHNOLOGY

ESSAY BY *George Fifield*



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RONA PONDICK: THE ART OF USING TECHNOLOGY

George Fifield

All art, with the possible exception of conceptual art, is formed by technology. It is often artists themselves who are responsible for the technological innovations that shift the direction of artmaking. Initially, their use of such discoveries tends to produce work that has a sort of “gee-whiz” quality, showing off new capabilities but remaining limited in its emotional and aesthetic effect. Artists enamored of a new technology, however, continue to explore it and begin to develop imaginative and unique approaches. Some completely understand the emotive potential of the new tools and use them in perfect balance with all the advances that have come before, constructing artworks of such power that we do not need to understand or even be aware of the technology that has built them.

In 1998, Rona Pondick embarked on a new series of sculptural work, combining life casts of her face and limbs with sculpted interpretations of animal bodies. She had created work with other body parts before, using teeth and ears to nightmarish effect, but she discovered new possibilities in the process of casting from life with silicone rubber, which could capture every pore and bump of the skin. Pondick’s life casting shares with mechanical reproduction an immediacy and lack of pretense that counteract the inevitable distortions of a hand-sculpted portrait, which cannot help but change the appearance of the subject – whether idealizing or caricaturizing it – while striving to capture a likeness.

The titles of these new sculptures are simple: *Cat*, *Cougar*, *Fox*, *Pine Martin*, and *Dog*. The obsessively detailed human body parts are joined with smooth and hairless animal shapes that by comparison seem fetal. This is especially true of those she cast in stainless steel, polished to look like liquid mercury and recalling the work of Constantin Brancusi. Pondick thereby seamlessly conjoins two of the great dialectical themes of the nineteenth and twentieth centuries: the technological perfection of mechanical reproduction and the artistic need to escape that perfection to develop new forms of personal expression.

But the power of these works is deeper than that. The animal

parts tell one story as subject matter while their abstracted shapes speak of another. The human figure is identified with the animal body, but at the same time is put at a distance from it. The sculptures convey the idea of animal not as a reality but as a concept. The human parts, with their extraordinary detail, convey our contemporary obsession with self. Pondick combines these two narratives with a third that reaches back to the earliest sculpture, in which the human and non-human are brought together to make an additional “other.” In her hybrids, Pondick references mythology and its contemporary relationship with science. These are monsters in the original sense, as in “monstrum,” an omen or dire warning. They embody cultural fears of experimental mutation and genetic manipulation. Rational biological research today can produce exactly the chimerical creatures that mythology created to terrify and titillate. Yet for Pondick a strong sensuality outweighs terror. As she says, “Fear and desire are two words I’ve always thought of to describe my work.”¹

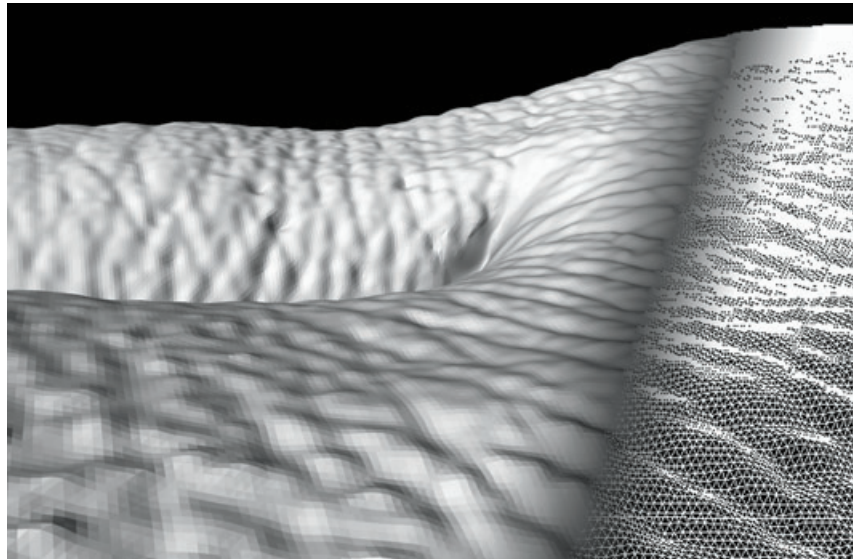
Pondick began exploring the new digital tools of three-dimensional reproduction in preparation for the complicated sculpture *Monkeys* (1998–2001). This piece comprises an entwined group of eight modeled animals that include life-size casts of parts of the artist’s body. While working on *Monkeys*, Pondick decided that “I wanted to attach two of my own heads to two of the monkey bodies. I wanted these heads in the same scale of the other six monkey heads so they felt totally integrated into the mix. I needed my head to be six inches tall and I didn’t want to model it. I wanted it to feel like a life cast with skin texture and detail, like a death mask. A friend suggested to me that if I used 3-D computer scanning and 3-D computer printing I could take a life cast of my head and reduce it to any size I wanted.”² These files can be printed out as objects, using the new rapid prototyping three-dimensional printers that have brought sculpture into the digital age.

During the last fifteen years, the computer revolution in the arts has been extended to sculpture. Three-dimensional

Fig. 1
Rona Pondick
Master cast of *Cat*
Urethane and epoxy resin
4½ x 33 x 14½ inches
(11.4 x 83.8 x 35.9 cm)

Fig. 2
Rona Pondick
Cat
2002–05
Stainless steel
Edition of 3 + 1 AP
4½ x 33 x 14½ inches
(11.4 x 83.8 x 35.9 cm)





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design software has long supported artists' search for new ways to digitize, manipulate, and output information, but more recently an array of extraordinary three-dimensional input and output devices has become available. An industry called "rapid prototyping" has evolved to the point where computers can create complex sculptures from a computer file in a matter of hours, days, weeks, or months. With three-dimensional printing, the limitation is only one of resolution. There is also a growing number of ways to input three-dimensional data into the computer without designing with a mouse. Three-dimensional scanners use lasers to map the exterior surface of an object or a person and generate a file. Some are big enough to map the entire interior of a building. When printed, the files these scanners generate produce a factual sculptural likeness.

Much of the first sculptural work that artists produced in rapid prototyping had the "gee-whiz" quality described above. Pondick, however, immediately moved beyond technical trial to complex aesthetic exploration, consciously avoiding the common pitfall of trying out every novel aspect of a technology and ending up substituting effect for meaning. By selecting from the myriad possibilities of the new tool with the express aim of replicating human skin – scanning at very high resolution and manipulating scale – she used characteristics of computer technology that were so compatible conceptually and formally with every other part of her process that, as she says, "the technology disappears."³

About her first foray into digital prototyping, Pondick has said, "The good news was that we did a scan from my cast head. The bad news was that it took a year. The level of detail I wanted made this very difficult. Each time we would scan my head the computer would crash. In the end we needed 3/4 of a million points to create my head. The file was so big the computer was always crashing. What was supposed to take a week to scan took six months."⁴ At that degree of resolution, the computer image captures every pore: "The details are so fine that it worked perfectly when I combined my shrunken heads with the monkey bodies and the casts of my

arms."⁵ Enabled by the digital technology to manipulate the size of her life-cast head, Pondick embarked on a new series with *Worry Beads* (p. 93). Printing her three-dimensional head to different heights – two inches, one and a half inches, and one and three-quarters inches – she strung them together like a headhunter's rosary. At this scale, the resolution was diminished, and details of the skin texture disappeared.

While her head shrank, Pondick's hand digitally grew for the sculpture *Cat* (fig. 2), providing a grotesque tumorlike appendage on the tiny body of a feline form. She started by sculpting the animal body, which she then had scanned at a low resolution. She scanned a life cast of her hand at a higher resolution on another computer, enlarged it from eight and a half to eighteen and a half inches in length, knowing that "I also wanted my skin texture to read clearly on the enlarged hand but I didn't want it to read like moon craters."⁶ Using software called Polyworks and other programs written specifically for this sculpture, Pondick could manipulate the data of the hand and see how it would fit with the cat body before outputting it in three dimensions. To make this task easier, the surface pattern of the hand was removed. "I redrew and reconfigured the contour of my hand and changed the direction and slope of it from my knuckles to my wrist on the computer."⁷ If you place your hand flat on a surface, you see that the height of the hand is highest at the wrist and slopes down toward the tips of the fingers. In *Cat*, Pondick adjusted the wrist to make it lower than the knuckles so the hand would merge smoothly with the animal body. When the computer model of the hand was resolved, she restored the skin texture (fig. 4) and the scan was output to a three-dimensional printer. The resolution Pondick wanted, "fine enough that the pores in the skin were visible in the computer build," made for a huge file.⁸ Containing 10 million polygons (5 million vertices), the hand took 250 hours to build. Three coordinates – X, Y, and Z – define the vertex positions of each polygon in three-dimensional space.⁹ The final output was made in a green transparent thermoplastic (fig. 3), "a very brittle and fragile material. The transparent

Fig. 3
Rona Pondick
Computer-generated
thermoplastic hand
4 x 18½ x 9 inches
(10.2 x 47 x 22.9 cm)

Fig. 4
Rona Pondick
Close-up digital image
showing manipulation
of skin texture on hand
Courtesy of Polich Tallix





Cat
2002-05

surface made it hard to tell which marks were in the material and which were on the surface. The only way I could assess the quality of the build of the hand and see it clearly was to translate it into an opaque material that would show its form," which she then could join with the sculpted cat body.¹⁰

When Pondick saw that the computer-built hand showed the marks of the building process, she set about removing them and etching the skin texture back into the hand. As she proceeded, however, she realized that she didn't want to remove them all. She liked the way the skin texture and the build marks worked together and chose to retain the evidence of the digital process in the final sculpture. But seeing the merged cat body and oversized hand in the studio, she felt that the sculpture looked incomplete and that the hand looked too much like a head. Pondick's imaginative solution was to add her reduced head to the figure, and "once I resolved the original [fig. 1], I brought *Cat* to the foundry for its final translation into stainless steel."¹¹

Rona Pondick employs tools from the entire history of sculpture to create works that bring together traditional sculptural modeling and the latest computer technologies. By addressing the aesthetic battle between technological perfection and expressive dissonance, she captures the fear and desire with which we approach technology. We are always hopeful that it will improve our lives and are simultaneously anxious that it will create monsters.

George Fifield is founding director of the Boston Cyberarts Festival, an independent curator of new media, and a writer on art and technology.

NOTES

1. Rona Pondick in conversation with the author, September 2002.
2. Rona Pondick in Octavio Zaya, "The Metamorphosis of an Object Maker: An Interview with Rona Pondick," *Rona Pondick: Works, 1986–2001* (New York: Sonnabend Press, 2002), 122.
3. Rona Pondick in conversation with Susan L. Stoops, September 2008.
4. Rona Pondick in conversation with the author, September 2002.
5. *Ibid.*
6. Unpublished artist statement, 2004.
7. *Ibid.*
8. *Ibid.*
9. Information from Helmut Kungl of XYZ RGB Inc., who scanned Pondick's hand for *Cat*.
10. Unpublished artist statement, 2004.
11. *Ibid.*

