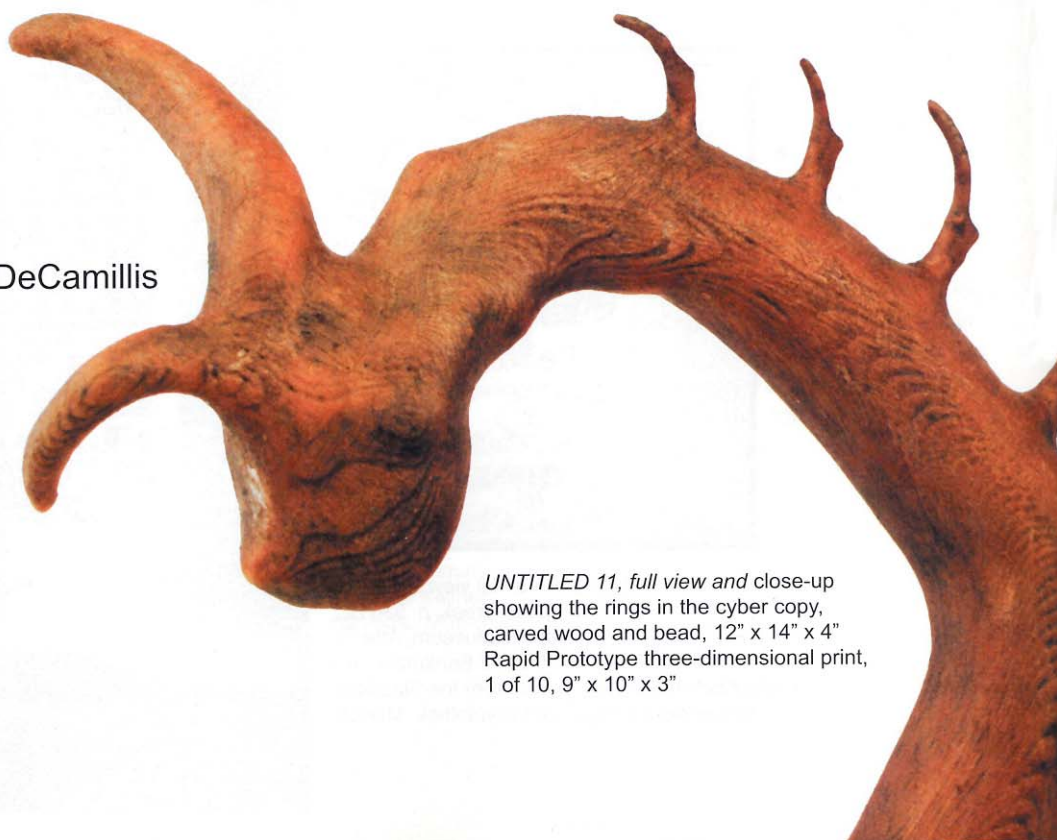




Vivian Pratt's Sculpture Process: Carved Roots to Cyber-Sculpture

by Vivian Pratt and Nancy DeCamillis



UNTITLED 11, full view and close-up showing the rings in the cyber copy, carved wood and bead, 12" x 14" x 4" Rapid Prototype three-dimensional print, 1 of 10, 9" x 10" x 3"

UNTITLED 14 completed



UNTITLED 14 in process and ready for parts to be pinned and glued.



the company, she was able to attend art school full time and received her MFA at Massachusetts College of Art in 2003. She continued working in her studio, moving back and forth between traditional two-dimensional media and the computer, finding ways to merge the analytical and the artistic. Until two years ago, she explored painting, drawing, and photography, taking images to the computer to modify, print, and combine again with other media. An example is her photography series *Transformed II* where she brings images of dead flowers to life. *UNTITLED 1* reflects the whimsy found in her wood and cyber-copy sculptures.

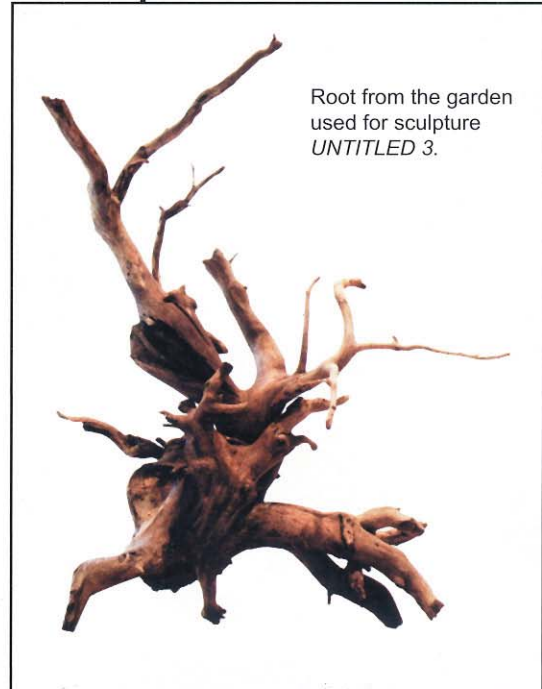
The wood sculptures evolved when Pratt dug a root out of her garden and, fascinated with its shape, began carving it. She scrounges in her yard for dead shrubs, asks nurseries to allow her to poke through their discards, and walks beaches looking for driftwood. She looks for shapes that represent animal parts and begins to add and subtract, building fantasy creatures, often with many arms, legs, tails, and heads. Pratt says, "I find woodcarving to be uniquely satisfying. I find myself in a different place and lose track of time as I

Although she's comfortable working with traditional media as well as using the computer as an artistic tool, Vivian Pratt was not born an artist. She had no interest in art until midlife when she burned out in a computer career. Recently, she combined her newfound love of woodcarving with her computer skills to develop a unique body of work that juxtaposes traditional wood sculptures and their high-tech plastic reproductions.

Pratt developed her artistic skills in traditional media by taking art classes while working full time with her husband in their high-tech company. After selling



UNTITLED 3, wood root sculpture.



Root from the garden
used for sculpture
UNTITLED 3.

spend hours shaping the wood as the form emerges.” As with the photo series, she feels that she is transforming nature, creating something alive from something dead.

Pratt developed a method of combining several found pieces into a single creature by using pins and glue and then adding many finish layers to hide the seam. Her work defies the old axiom that woodcarving is only subtractive. She often completes the pieces with a thin layer of brightly colored oil paint that takes the creature just one more step into fantasy.

In the fall of 2006, Pratt joined the Bromfield cooperative gallery in Boston and was offered a solo show in May of 2007. She says, “As I prepared for the show, I decided to make reproductions of my sculptures. After investigating traditional mold-making methods and finding that they would be difficult because of the complexity of my images, I looked into using the computer to create copies. I was aware of three-dimensional scanners and printers and began looking for ways to use the technology to make my reproductions.”

After much web surfing, Pratt found Polhemus, a company in Colchester, Vermont. They were willing to scan her sculptures with their FastSCAN™ system to produce three-dimensional files of her sculptures. The lightweight, portable three-dimensional scanner creates real-time images. The process is fast and, depending on the complexity of the sculpture, can scan in a minute. Next, the file is saved in a three-dimensional file format for easy importing into modeling software. Once Pratt had the scans, she took a course at the Rhode Island School of Design where she learned how to use Maya 3D software to clean up the images and prepare them for printing. She was then able to create the actual plastic reproductions using RISD’s three-dimensional printer. After weeks of carving and finishing each sculpture, the digital reproduction technique allows her to reproduce her art, save time, and have the options of scaling and digital archiving for future use with other processes. Her aspiration is to create a three-dimensional sculpture on the computer.



Japanese paper and plant wall relief.



Vivian Pratt in her studio surrounded by roots.

When most people see the pieces, they have a hard time understanding the process used in 3D printing. Pratt says, "I explain that the software renders the three-dimensional file of the image as many thin slices. The printer then lays down melted plastic, layer-by-layer, building up the sculpture one layer at a time. Where there are overhangs, the printer builds up a support material, different from the plastic used for the piece. The copy emerges from the printer covered with the support material that, in my first pieces, was dissolved in an acid bath."

"When I received the piece, it was a white plastic that needed some sanding. I didn't sand too much because the printing process created ridges that resembled tree rings and gave the piece an illusion of being made of wood. As with the original sculptures, I added several finish layers, creating a piece that is remarkably similar to the original woodcarving."



UNTITLED I, *Transformed II* photograph series.



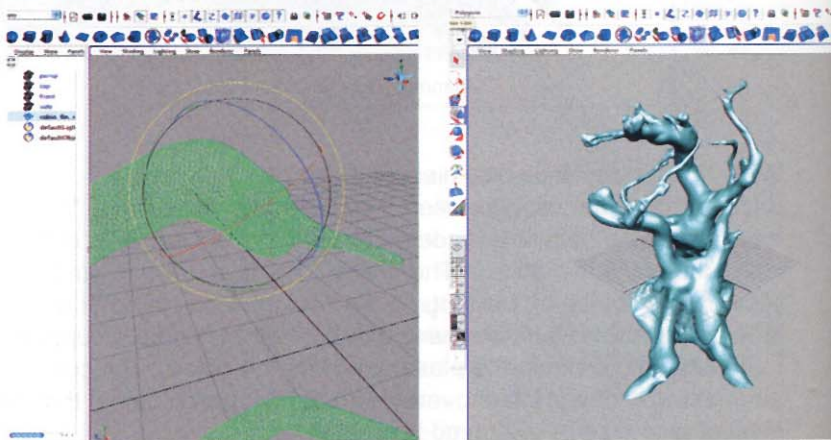
UNTITLED 7, carved wood, 13" x 4" x 3,"
with two Rapid Prototype three-dimensional prints:
1 of 10, size 12" x 3.5" x 2.5" and
2 of 10, size 10" x 3" x 2."

Polhemus FastSCAN™ scanning a finished wood sculpture.

Recently Pratt worked with a company called Objet Geometries in Billerica, Massachusetts, that developed PolyJet™ technology to reproduce three-dimensional objects in a variety of resins or photopolymer material, both transparent and colored. Pratt's original *UNTITLED 13* was reproduced on Objet's Eden 350V printer operating in the high-speed mode. The layers are thirty microns thick versus the sixteen microns of a high-quality mode. The high-speed mode decreased the printing time by nearly half, to about fifteen hours for her piece.

The figure was printed on its side to minimize the amount of support material. When finished printing, the sculpture was visible on the top of the block of material, but was completely covered on the sides and bottom by the material. The figure was moved with a spatula to a spray booth. Using a water spray rather than an acid bath, the support material was broken off. When the extra material was almost gone, the reproduction was soaked for thirty minutes in a three percent solution of sodium hydroxide and water and then returned to the spray booth for final cleaning.

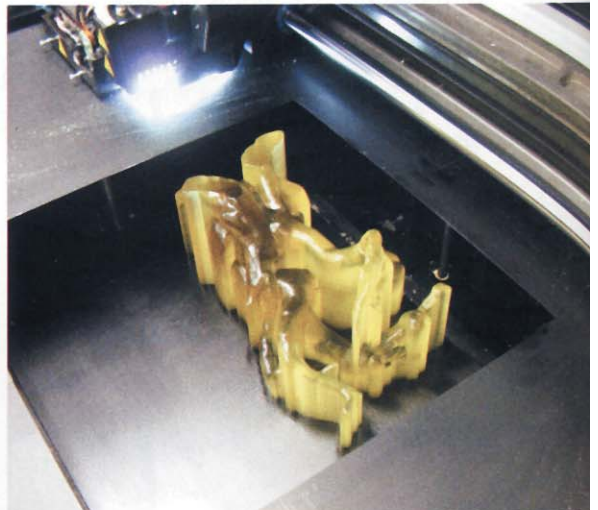
Pratt chose the transparent material because the look of the finished reproduction is interesting without much finishing. "With a white plastic, I felt the need to paint the reproduction, creating a look that was very similar to the original. The transparent copy provides a more obvious distinction between the original and the copy while being interesting in its own right."



The clean up of a scanned file on the computer.

Refining a full sculpture on the computer.

Printing process: figure printed on its side to minimize the amount of support material.



Objet Geometries' Eden printer processing *UNTITLED 13*.

creative process



Clockwise from Above:

Figure lifted with a spatula and moved to a spray booth.

The support material is cleaned off the figure with a water spray.

Final cleaning with the water spray.

While developing the reproductions, Pratt became intrigued with the dynamics of the original faced off against the cyber copy. "They seemed to challenge and dance around each other, creating a richness not possible with a single piece and evoking a metaphor for the struggle of the old against the new. I decided to show the pieces as pairs or threesomes. I was able to build a dozen sets of sculptures for my exhibition."

After her show last May, Pratt took some time off to play in her garden before returning to her studio to work on some new sculptures. She has several larger pieces in process and has a new series that incorporates hand-made Japanese paper with root and plant material to create wall relief pieces. The paper is mounted on wood and then run through a press.

Pratt muses about the possibility of reproducing at least one fantasy creature as a large-scale bronze. With the three-dimensional files of her works, she will be able to use the digital enlarging process described in **Sculptural Pursuit's** Fall 2007 issue (*The Art of Digital Enlarging*, Vol. 6 No. 3). She can envision an eight-foot-tall creature installed outside a children's museum. In the meantime, she is happy to rummage through her several large piles of roots and driftwood, looking for inspiration.

View more of Pratt's work at www.vivianpratt.com. ✨

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UNTITLED 13
Objet's cyber copy with the original.

