Inside/Out
Figurative Sculpture

These "digital sculptures" draw upon recent advances in 3D laser digitizing and rapid prototyping technology. They utilize the unique space of the computer to pre-visualize problems of viewer position, time, and three-dimensional montage. Surface "maps" of the body or other forms are created using 3D laser digitizing equipment. This surface topography is then sent to a Silicon Graphics platform where it is evaluated and modified using custom software. Finally, the desired dataset is sent to a CNC (computer numerically controlled) mill, where it is translated into tangible, three-dimensional form.

Three goals animate the project:

1. A desire to test the conventions specific to the traditions of figure sculpture.

2. A desire to understand rapid prototyping technology and its relationship to three-dimensional computer modeling.

3. A need to critically examine how our technologically driven culture shapes both our current image of the body and how we understand three-dimensional form.

The difficulty in gaining an integrated "picture" of ourselves is, in large measure, reflected by the disparate methods we as a culture use to represent the body. Essentially, this series of digital figure sculptures is a first step for the artist in providing bridges between contemporary aesthetic discourse and scientific visualization. The hope is to provide an expanded model of how we currently represent ourselves to one another.

The uniqueness of this project, both technically and aesthetically, resides in testing the limits of a system developed by Cyberware, Inc. In each stage of the process, I investigated methods that went beyond the "acceptable" limits of the system. For example, with regard to the 3D laser digitizing capability of the system, I explored how physical movement would affect the nature of the captured data set.

The work titled "Of More Than Two Minds" is the result of my turning my head at approximately the same rate as the laser digitizer as it made its circular pass around my body. The resultant dataset constituted a three dimensional blur. The effect has much in common with a conventional photographic blur in which the speed of a subject exceeds the camera's ability to freeze the action. As a complete scan of a three-dimensional object takes seventeen seconds, there is ample opportunity for combining static and dynamic elements within a single pass of the scanner.

I was most interested in the pre-visualization and modeling capabilities of the computer platform itself relative to an arcane perceptual effect known as "anamorphosis" (literally, "against form"). The appearance of anamorphosis as a consciously applied technique in the history of art is nearly simultaneous with the invention of linear perspective. Anamorphic projection seeks to deny the usual conventions of "looking" in which an observer views an image frontally from a limited range of viewing angles. It is a technique of disruption and distortion. The crucial difference from classical perspective is that an observer positioned to receive the undistorted view of an anamorphic image would have to be at a radically oblique angle to the picture plane – and, not incidentally, have one eye shut to overcome the corrective effects of binocular vision. This monocular, self-conscious gaze – exaggerated proof of the "cone of vision" that explains classical perspective – presumes a subjective viewpoint that reinscribes the source of vision in the physical body.

My initial experiments with anamorphosis involved two-dimensional smears using conventional optically-based projection systems. In moving into three-dimensional anamorphic forms, I first utilized closed-circuit video cameras to provide the necessary vantage point and monocular view. The computer, however, has proven to be the ideal anamorphic instrument. It is relatively easy to modify three-dimensional datasets in the space of the computer to produce accurate anamorphic distortions. These can be previewed from a range of vantage points to determine whether the reclaimed image will be effective in the finished sculpture. In the sculpture titled "Eye On the Prize," the image of an upturned head, its tongue licking its lips, has been extruded nearly to the point of unrecognition. But when one stands over the sculpture and closes one eye, the reclaimed image is fully apparent.

It is not suprising that with increased use of computers – and, concomitantly, of video – one finds a corresponding exploration of these media's anamorphic potentials. It is in the realm of computers that anamorphosis may have the most significant impact: less as a technique for distorting form, than as a metaphor for understanding the biased methods we use for storing, processing, and retrieving information.

In the highly abstracted, binary systems of order that make computers possible, one finds a model in which the anamorphic transformation of a given field of information is the rule rather than the exception. Fundamentally, everything is reduced to a plus/minus code; there is no room for that which cannot be submitted to a binary operation.

A process of compressing and subsequently decompressing information – the digital version of perspective foreshortening – characterizes the world of computers. While the result of such processes may not yield a "stretched" image or be dependent on a radically oblique vantage point, I would argue that the spirit of the operation is essentially "anamorphic." Such a view resonates with Donald Preziosi's use of the "panopticon" and "anamorphosis" as "guiding metaphors" for understanding how knowledge is organized and accessed:

"Any form of disciplinary knowledge is a panoptic, anamorphic apparatus: what is visible is legible only from a particular perspective that both reveals objects of a domain and occludes other objects and other possible domains." (Donald Preziosi, *Rethinking Art History*, New Haven: Yale University Press, 1989, pp. 76-77.)

My current work involves integrating diverse human body representations (CT scans, MRI imges, ultrasound, stereophotogrammerty, etc.) using digital mapping techniques and stereolithographic rapid prototyping. Much as the anatomical drawings of Leonardo and Vesalius highlighted correspondences between external form and internal physiology, the current work seeks to link the discourse surrounding how we represent the body with recent advances in visualizing the human anatomy.

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