

REPRESENTING THE OBSERVABLE TEXTURAL
PATTERNS OF MOVING WATER IN STONE

PROBLEM IN LIEU OF THESIS

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CHAPTER I

INTRODUCTION

Natural forms and systems provide the compositional and textural structure of my sculpture. A myriad of diverse forms found in nature, ranging from those belonging to the microscopic world to images seen by the naked eye are my sources of inspiration. Diatoms, human anatomical forms such as the larynx and intestines, and weather patterns serve as images upon which I draw from to create compelling sculptural forms. These forms are of critical importance because they enable me to express and convey the significance of the shapes and structures that make up all life forms. Because balance, movement, rhythm, and texture are inherent in the autonomous natural system of water, I have chosen to use this system as an inspirational source for my proposed sculptures.

Moving water has provided me with a repertoire of textures that recur within the sinuous curves and elevations of my sculptures. Undulating swells and wavelike bends maintain a temporary existence in the ever changing physical structure and properties of water. This autonomous natural

system can be represented, but not duplicated, through texture in a fixed stationary condition through the manipulation of stone. My desire to reveal the textures that occur in four observable patterns of water's movement will allow me to represent water's physical structure in a static, yet visually dynamic, manner. Conceptually capturing the dynamic quality of movement and rhythm through texture on a stone surface will enable me to reconstruct the temporal properties of water in a tangible three dimensional form. Through a combination of personal observation and artistic license, three stone sculptures will be produced based on the four specific textural states of moving water.

Statement of Problem

I plan to create a representation of the textures of four distinct states of moving water in three stone sculptures. These structured textural elements are intended to provide compelling visual stimuli that will enhance the viewers' understanding of the sculptures. The dynamic quality of rhythm inherent in the four observable patterns will be conceptually and physically captured on a stone surface. The four states of moving water I have chosen to apply to this project are: water moving over an object below the surface, water colliding with an object (such as a rock or tree limb), water's reaction to an object being plunged into its surface, and wind's effect on water's surface. This

depiction will be paired with my own artistic license to compose the selected textures in a manner that contributes to the pieces' formal and conceptual strength. The problem will be addressed in a three-part question which will investigate stone's ability to convey the textural properties of water, my ability to capture depth of rhythm on the stone's surface, and the possibility of implying an overall sense of texture without covering the stone's entire surface.

1. Can stone be a conducive medium for the representation of the four chosen states of moving water?
2. Is it possible to capture the illusion of depth of rhythm on the surface of a stone?
3. Can the treatment of a specified area of texture imply liquid movement on the entire three dimensional work?

Methodology

I will answer the above questions in the following manner. I will keep a journal to record the sculptural process, any personal observations of the four observable states of moving water, and the technical and conceptual progress of this project. Three sculptures will be created in stone. A descriptive paper will address and document the progress, technical and conceptual processes, and results of the three works.

1. A journal will be kept to record the sculptural process.
2. I will observe the four states of moving water.
3. I will complete three sculptures in stone.
4. A descriptive paper will be written at the completion of the three works.

CHAPTER II

DISCUSSION OF WORK COMPLETED

Grip

Grip initiated the technical and aesthetic discoveries made while undergoing the challenge of representing the observable textural patterns of moving water in stone. From the onset of Grip my approach was extremely literal and based almost entirely on the objective of achieving a close visual representation of the physical characteristics of the observable patterns of moving water. Although stone proved to be a conducive medium for the aforementioned objective, I discovered that stone's capacity as an agent for both faithful visual representation and aesthetic expressivity could be more effective if I had chosen a stone type and scale that was more compatible with the systems in nature I was trying to represent. I did not expect to experience the full potential of stone's effectiveness as a conducive medium for representing the textural patterns of moving water in the first piece. As the piece progressed I began to realize that by employing a different type of stone that would allow me to represent the textures with less technical resistance I could fully realize the irony of suggesting

fluidity in one of the most traditionally solid mediums. At this point in the project I was willing to experiment with many different types of stone in order to achieve my objectives.

Grip represents water's reaction to an object being plunged into its surface and the collision that occurs between water and an object. A very close likeness to the observable patterns of water apparent in nature was achieved in this piece. To accomplish this I combined two different types of stone to represent and model a liquid collision. Using two different materials helped imply the actual dynamics of a collision by demonstrating a contrast in texture and color. This combination of two different types of stone also allowed me to test whether or not stone would be a conducive medium for representing the state of water's reaction to an object being plunged into its surface and the state of collision.

A piece of pure white Colorado marble and deep red North Texas iron ore were combined to emphasize the relationship between the colliding elements. The fleshy, seductive, and reflective characteristics of marble helped communicate the idea of a liquid form that would stand out against the grainy dark solidity of the iron ore. The majority of the marble surface was highly polished using various grits of sandpaper that left a subtle gloss. The reflective quality of the marble contrasted with porous iron ore resulted in a textural

sense of dark and light. Even the title of this piece reflects the materials used, their physical characteristics, and the influence that one material has over another. This visual appearance of light and dark also emphasized the contrast between liquid (light) and solid (dark).

Stone demonstrated its potential as a conducive medium for the representation of textural patterns in Grip by allowing me to create a sense of implied movement. In turn, implied movement became the strongest and most effective aspect of this piece. Because it was displayed on the wall by a concealed stainless steel bracket, the piece began to achieve a vertical orientation to the ground plane. I made this choice in presentation because I observed that the vertical orientation of the piece helped emphasize the mass at the top of the form. This display method activated the illusion of the iron ore traveling through the viscous marble. By placing the ore at a slightly upward angle I was able to increase the feeling of movement, tension, and the appearance of a solid form being plunged into the marble glyptic. If both stones were displayed on a pedestal in a horizontally static manner the piece would lack its compositionally compelling qualities.

Although Grip successfully represents the dynamics of water colliding with an object, it lacked the physical dimensions to suggest an overall depth of rhythm due to the fact that the majority of the piece remained in the cut block

form. The vigor of this piece could have been emphasized if it was executed on a larger scale. Greater volume would have increased surface area, thus allowing a greater range of texture to be visible on the block element. A greater surface area would also enhance the overall sense of movement below the visible skin of the object creating a depth of rhythm.

For the purposes of this experiment, depth of rhythm is defined by the way that the visual appearance of a liquid surface implies an unknown dimension below the surface skin. For example, when observing a body of water the viewer looks for any pattern on the surface skin that might dictate the depth of that particular body. Depth of rhythm is associated with the textural patterns of water that the viewer, in this case myself, observes. The rhythm that is observed on the surface skin is visible on every surface of water, whether it is static, moving, abysmally deep, or two inches shallow.

Specific tools allowed me to capture the illusion of depth of rhythm on the surface of the stone. Pneumatic chisels were used to remove large amounts of mass quickly. After this was completed, areas of rhythmic subterfuge that represented depth of rhythm were executed by using a carbide ball mill. This tool was randomly scraped across the surface of the stone to create a wavelike pattern. Next, I sanded these areas with various grit sandpapers attached to a die grinder for finishing and polishing. Refining the marble

surface created a fluid and reflective appearance. An example of this technical process can be observed behind the interpenetrating iron ore where I developed folds reminiscent of a boat wake.

Artistic liberties were taken in choosing the sizes of the repeated folds. These changes in scale created a large range of light and shadow underneath both the folds and the iron ore. The resulting chiaroscuro effect, coupled with the surface treatment of the stone as a thin skin, was moderately successful in representing the illusion of depth of rhythm. The techniques I used to create depth of rhythm and the choices I made regarding fold sizes were labor intensive and never fully realized the desired effect. Hindsight revealed that it takes a minimal amount of manipulation to imply a large reaction between two types of stone.

The most successful element relating to depth of rhythm in this piece was the easiest to produce. This area consisted of two repetitious concentric circles located slightly in front of where the iron ore joins the marble. Each circle implied that the ore was pushing forward with no reverence for the solidity of the marble. This basic approach proved to be useful in establishing depth in the rhythmic pattern.

Several different methods can be used to establish the illusion of depth of rhythm. Upon completion of this piece I learned that the more I tried to mirror the effects of

nature the more static and overworked the stone became. In the next attempt I decided that I would have to respect the actual textures and fracturing characteristics of the stone by allowing some of them to remain untouched. Depth of rhythm could be established using the vitality of the stone's inherent characteristics instead of by the refinement of the human hand. As stated earlier, this could be more effective with a larger surface area to manipulate. Increasing the scale would allow me to create textural variations that would produce an evolution of the stones' natural qualities along the same plane.

Similar processes revealed that it was possible to imply liquid movement on the entire three dimensional work using a small specified area of texture. Placing texture between the wavelike folds on Grip produced a contrast reminiscent of the turbulent reaction of flowing water. A half inch ball mill was used to create this mimesis. This turbulent texture flowed from behind the ore, along the length of the form, and disappeared inside the marble block attached to the wall. The subtle disappearance of a specified area of texture implied liquid movement on the entire three dimensional work. The contrasting smooth textures reinforced a sense of liquid movement by representing a placid surface prior to collision. Both marble and iron ore were successful in communicating my desired concept, however, upon completion of this piece it became apparent that refined areas of

Colorado marble should not be percussion carved. This particular stone has a tendency to break into small fragments where the chisel meets the surface and within a two inch radius around the point of impact. If left alone, the resulting texture will continue to erode throughout the glyptic. This debilitates the strength of the stone. A thorough sanding would prevent this problem and eliminate the natural texture of the marble. As stated earlier, the inherent natural texture of the stone would be utilized in future attempts. Due to the negative aspects of marble, I chose to use native alabaster on a larger scale in my next attempt to represent the observable textural patterns of moving water.

Off Chance

Off Chance is an amalgam of water colliding with an object and the effect of wind on the surface of a body of water. The amount of gypsum in alabaster gives alabaster a physical composition that allows it to be forgiving to rough carving. In this regard, alabaster proved to be a conducive medium for the representation of the two aforementioned textural patterns. The rock itself was found in a canyon after having been eroded by water for several years. The way the stone was shaped left the same texture as the effect of wind on the surface of a body of water. This allowed me to leave the majority of that

natural texture unaffected and to mimic this area in other parts of the composition. Alabaster extended the possibilities of representing the states of water because it was capable of being reduced to a thinner surface without crumbling. It is more translucent than marble, which allows the viewer to see through the top layer of the stone. It also has bright pink strata layers which, if used correctly, can enhance the appearance of flow.

Off Chance not only represented wind's effect on the surface of water, but the collision between the alabaster and the pedestal used for display. A ninety degree angle was cut into the stone to create the illusion that it was rising out of its resting place, the pedestal. The alabaster was carved so that it would appear as liquid at the point where it connected with the pedestal. The combination of the ninety degree angle and the translucent wavelike shapes that appear where the stone meets the pedestal were evidence of alabaster's ability to be a conducive medium for the representation of the states of collision and wind.

In Off Chance it was possible to capture the illusion of depth of rhythm on the surface of a stone. As I stated earlier, alabaster's reception to my ability to create a gradual evolutionary change of texture along the same plane was an asset in the creation of the illusion of depth of rhythm. I utilized the natural texture of the eroded stone and made it evolve until it became a smooth glossy texture.

This evolution was a representation of the many textural patterns that occur within the transition of a wave from trough to crest. The overall shape of the stone already provided me with a wave form that was created by the natural forces that existed in its previous canyon environment. This piece's final appearance was the result of my decision to respect the alabaster's actual textures and refrain from overworking the stone.

In order to emphasize and enhance the state of flux that the entire composition was representing I created small areas that would hold pools of water. The use of this water added one more transparent layer on the surface that created a greater sense of depth and literally communicated my intention to represent water. The pools were created by using the same tools that were used in Grip. I observed sunlight's reflection on a lake bed and then I recreated that organic net onto the stone. Using the ball mill, I developed small pools in each negative space created by the net.

Although I was able to effectively establish depth of rhythm in this piece, it did not allow me to represent the patterns of water flowing over an object or water's reaction to an object being plunged into its surface. Successfully combining all four of these patterns in a single sculpture would require a larger surface and a combination of several conducive types of stone. An increase in scale, such as

a life-sized scale, would establish a more formidable presence for the viewer and possibly allow for all four states of water to be successfully represented.

In Off Chance the majority of this piece is covered in a texture that is reminiscent of wind's effect on the surface of water. The third question in my thesis was non-applicable to this piece because the stone was covered almost entirely with the same type of texture. My objective of leaving the stone's natural texture in tact was effective, but I realized that in order to discover whether or not a specified area of texture could imply liquid movement over the entire three dimensional work I would have had to destroy the majority of the original and the invented textures.

Rao

Rao was the largest piece in this series. New Mexican travertine, Colorado marble, and Texas limestone were used in this sculpture. The combination of these three types of stone proved to be overwhelmingly successful. This piece demonstrated stone's potential as an agent capable of representing all four observable states of moving water. Two large blocks of travertine and limestone were placed together in a vertical arrangement so that the travertine rested on top of a piece of quarried limestone. These blocks were carved in a way which allowed them to converge in a subtle and visually unarresting manner. The travertine

piece penetrates approximately thirteen inches into the limestone. This was done not only to form a relationship between both stones, but also to provide a base structure that would make it physically attainable. Combining two large blocks with smaller pieces of marble made it possible to represent the four chosen states of moving water.

Water moving over an object below the surface can be observed in the middle of the sculpture where the thin marble element touches the surface. At this point, folds of concentric circles appear. The same method that was employed in Grip was applied to this sculpture. Concentric folds were technically simple forms to carve and became an effective means of making the stone appear to be a liquid flowing over an object beneath its surface.

The contrasting white marble at the top of the piece meets with the dark travertine in such a way that it appears to collide and enter the travertine at the point of contact. This collision is implied throughout the travertine glyptic. Another collision occurs where the large block of travertine sets into the limestone. A small undulation was created on the outside of the limestone to communicate the formation of a collision between the two stones.

Water's reaction to an object being plunged into its surface is evident at the same point where water moving over an object occurs. This reaction was stimulated by the thin marble element piercing the skin and by the implication

that the marble continues its journey throughout the piece. The thin marble element itself is a reaction to the aforementioned collision occurring at the top of the sculpture. Both of these reactions utilize human knowledge of gravity and the way it functions in liquid form. Conceptually, these reactions were presented in a stair step composition. This served as a catalyst for the implied flow and movement that exists in this piece. Rao is a Hebrew word meaning the flow of the past into the future, and progression of speech. For this reason I believed that it was appropriate for my final attempt.

The representation in Rao of wind's effects on water's surface was an abstraction of the process used in Off Chance. Instead of duplicating the lines on the lake bed, I opted to place the ball mill side by side in repetitive depths. This method produced a honeycomb effect reminiscent of wind's effect on water's surface. I found this abstraction more visually compelling in the multicolored travertine than in the literal representation I applied to the alabaster. Combining the multichromatic travertine with soft cream limestone and brilliant white polished marble allowed me to use the stones' physical properties and their inherent colors to make a sculpture that would represent the four chosen states of water.

The scale of Rao became a crucial factor in the representation of depth of rhythm. The scale provided enough

volume to fully model my desired forms and to create large areas of texture along the same plane. For example, one side of the sculpture is almost completely polished. This highly reflective polish gradually fades into coarse paper thin layers of sediment. This evolution, which occurs over a broad four foot surface, invites the viewer to conceptually follow this progression inside the mass. The polished areas emphasize the travertine's myriad of colors and its microscopic designs. This gives the surface a very globular and veinal appearance that helps imply depth of rhythm by creating a sense of life below the skin.

Depth of rhythm was also established through the use of the pure white marble. I used a tornadic vortex form as the conceptual springboard for my idea. This vortex, which is another observable phenomenon that occurs in water, enters the travertine at the top and disappears in the upper half of the piece. The thinner part of the funnel reappears in the hole containing the abstracted wind texture. As the funnel tapers it re-enters the travertine glyptic at the point of reaction with the concentric folds. This highly polished white contrast, coupled with the vortex form, implies an effortless movement throughout the solid travertine creating a depth of rhythm.

Each specific polished area on the marble and travertine develop an implied liquid quality on the overall piece. Although these areas of high polish vary in size and

placement, their ability to reflect light as a liquid is of critical importance in communicating the desired effect of liquid movement. A high polish paired with the successful textures developed in Grip and Off Chance (such as the concentric folds and stylized use of the carbide ball mill) prove that the treatment of a specified area of texture can imply liquid movement on an entire three dimensional work. Successful completion of this specified textural treatment was made possible due to Rao's large surface area and volume. At this point, I realized that this textural treatment is almost entirely dependent on scale. Although I was able to achieve a sense of implied liquid movement on the previous sculptures, it was not as visually compelling as the liquid movement on Rao.

CHAPTER 4

SUMMARY AND CONCLUSION

Trying to successfully represent the observable textural patterns of moving water in stone is a laborious task. The amount of time involved in locating, selecting, and transporting the stones is the equivalent of carving the actual form. Both the marble and travertine were found in a quarry outside of Belen, New Mexico. The limestone was purchased from a quarry in Leander, Texas. All were purchased in large quarried block form to reduce cost and provide enough mass to work with. Transporting massive blocks of stone and adjusting them during the actual sculpting process is both physically and mentally taxing.

Each type of rock has its own resistance and receptivity to the subtractive process. Travertine, for example, is brittle and prefers to be cut instead of carved. Limestone, on the other hand, is soft and easily manipulated. Both processes produced a large amount of dust and sweat. I absorbed the dust of the stone as the stone absorbed my sweat. For me, this mutual and symbiotic exchange became a metaphor for my relationship with stone and my passion for water.

Upon completion of this project I discovered that stone

can be a conducive medium for representation of moving water when combined with technical processes that produce liquid forms. The marble used in Grip proved to be the least conducive medium due to its shape and size. Grip taught me the importance of choosing a stone with physical dimensions and properties that would be compatible with the techniques I use and the forms I have chosen to represent. Although I was able to represent two of the four states of moving water (collision and plunge), it became evident that the next sculpture would have to be larger and of a different stone. The marble used in Grip crumbled upon impact, thus making it nearly impossible to develop thin curves and liquid lines. Because this piece was executed in iron ore and marble, I decided to use alabaster in the next attempt in order to achieve the aforementioned forms.

The alabaster piece, Off Chance, served as a transition which allowed me to realize stone's fullest potential as a conducive medium. Fortunately, I selected a stone with an actual texture that already represented liquid. This actual texture, coupled with the way I mimicked that texture and the placement of the stone on the pedestal, allowed me to represent only two of the four observable states of moving water (collision and wind). This was a transitional piece because I realized the importance of applauding the stone's natural texture instead of denying its inherent physical and aesthetic qualities. Although this piece was successful,

I only used one type of stone. This transitional piece revealed that it would be possible to utilize several types of stone in one piece while simultaneously taking advantage of each stone's unique qualities.

Due to the fact that Rao was the largest piece, I was able to capture all four observable states of moving water in the same sculpture. Three stone types were used in this sculpture, thus allowing me to use each stone's characteristics to contrast and compliment each other in the forms they represented. The limestone provided a raw quarried quality while the polished marble contrasted this roughness. Furthermore, the marble was capable of representing liquid through its high polish. The travertine was versatile in its multitude of textural surfaces. The combination of all three stone types produced a cohesive and complementary composition.

The knowledge that I gained from undertaking this project revealed that depth of rhythm is highly dependent on scale, surface area, and volume. Similarly, I learned that utilizing specific techniques that respected the physical properties of each stone type was more complementary to the sculptures. For example, the use of concentric folds, either roughly carved or highly polished, were a more effective liquid texture than an intricately carved splash. Grip was the first attempt in which I took an intricately carved approach over the whole form. Its wavelike ripples were

overworked and denied the vitality that marble is capable of communicating. Off Chance was a move in the opposite direction because the majority of the piece was left raw. Rao was a successful combination of the techniques used in the first two sculptures. This combination of rawness and refinement enabled it to relay the greatest sense of depth of rhythm.

A specified area of texture was able to produce a feeling of liquid movement over an entire piece to varying degrees in each of the sculptures. In Grip the outer polish could have effectively communicated this if it weren't for the overworked modeling of the liquid form. Off Chance did have specified areas of textures, but this texture covered most of the form. Rao was an attempt to combine several specified areas of contrasting textures to produce the desired effect. This proved to be successful because of the previously mentioned combination of stones and the large scale.

Having successfully completed my objective of realizing stone's potential to represent the observable textural patterns of water, I have become even more intrigued with the spiritual connotations of water and stone. This project allowed me to observe, manipulate, and enhance the seductively timeless medium of stone. The temporal life forms that I tried to represent in this project, such as water colliding with an object and water flowing over an object below its surface, are often used historically as metaphors for our

spirituality. Similarly, stone is used as a material which forms a foundation or an impenetrable base which has many symbolic connotations. This problem in lieu of thesis has provided me with the freedom to develop the knowledge of materials, tools, and processes to explore the deeper meanings of the combination of medium and form in future projects.

ILLUSTRATIONS

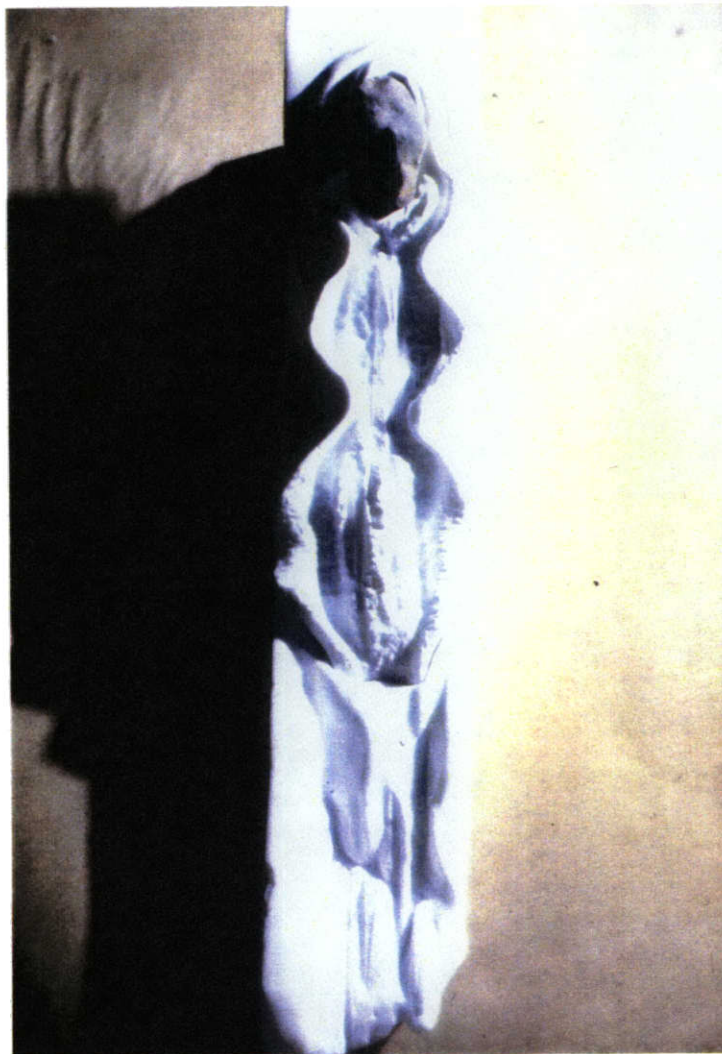


Fig. 1. Grip Full View

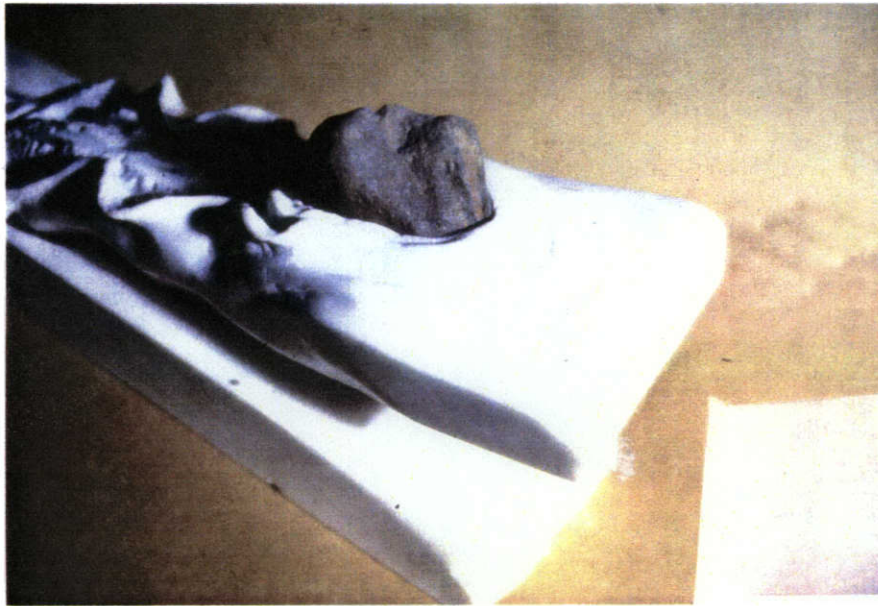


Fig. 2. Grip Detail

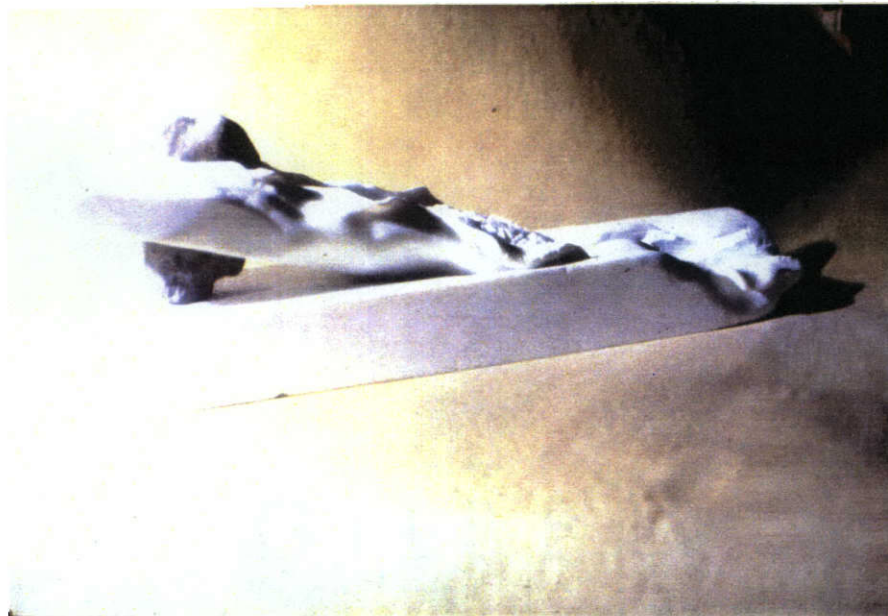


Fig. 3. Grip Side View



Fig. 4. Off Chance Full View



Fig. 5. Off Chance Textural Detail



Fig. 6. Off Chance Detail



Fig. 7. Rao Full View

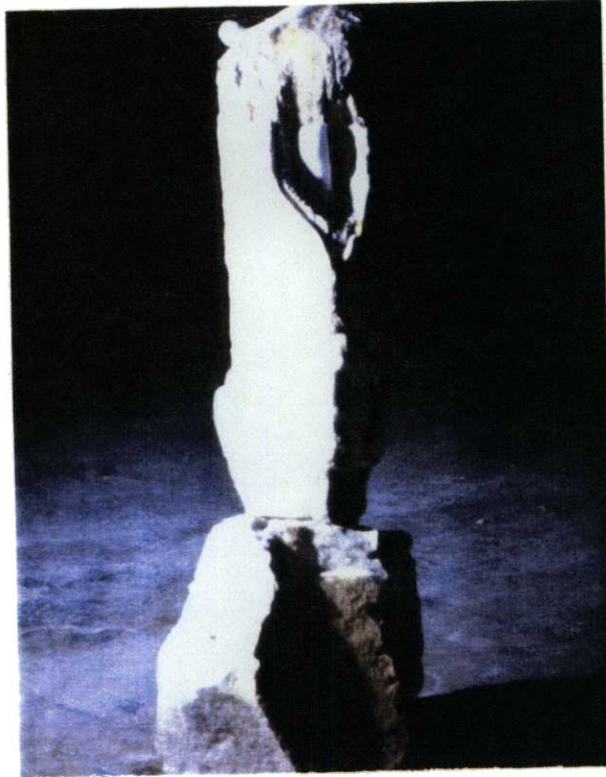


Fig. 8. Rao Detail



Fig. 9. Rao Close up Detail