

**THE RELATIONSHIP OF *FORM AND SPACE* IN PRODUCING URBAN
MORPHOLOGY:**

A STUDY OF ANALOGY OF BODY IN SCULPTURE AND IN CITY

by

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ABSTRACT

This study provides an alternative framework for looking at the city as a physical object. I propose a way of learning about the city not only by understanding its physical *presence* as an object, which is merely a general representation in its form, but also by looking at the invisible, the hidden side of the city which is an integral part of the meaning of its physical structure.

To understand how the invisible entities can generate their own meanings and realities, I began by examining twentieth century British sculptor Henry Moore's use of holes and hollows in his "Reclining Figures" in elm wood from 1935-36 and 1945-46. What I learned from that investigation became an analytical framework for analyzing and understanding the physical structure of the city.

I applied that framework specifically to the medieval Italian hill town, Siena. I chose Siena because in its urban structure and morphology, I found it to be a perfect example of a physical object that exemplified the idea of the body represented in the walled city as a bounded entity.

Both the city of Siena and Moore's "Reclining Figure" sculptures are physical structures that incorporate voids as a major part of their body, so I chose to study the relationship between what is *solid* and what is *void* in these objects and their relationship. This study does not see the relationship between a body and its absence, but sees the body looked at from a different perspective: one that requires a willingness to experience and study the object from within.

However, my study was also about the process of investigation. My method obviously became a form of learning, a form of finding specific relationships between what is seen and unseen in a physical object. In my work, I scanned Moore's images to re-examine his sculptural pieces and define their physicality. Then I used the information I extracted from my analysis of Moore's work as a *matrix* for analyzing the morphology of the city of Siena. Through a selected portion of Siena at four different scales, I studied the manner in which I sought to manifest the nature of the void in a three dimensional structural form and to explore

its physical qualities.

The methodology I applied to investigating the matrix of *solids* and *voids* throughout the process of abstraction helped me to generate an understanding through conceptual models of the powerful forces that exist in the void when producing any meaningful physical object. The collection of "Shaped Voids" that my three-dimensional clay interpretations represent have to do with the expression of the "forces of energy" that exist within the elements of the voids which compose the physicality of the object itself. The result of my investigation was a two- dimensional and three-dimensional analysis approach that offers different ways of looking at and understanding the concept of the *void* as an idea and as a physical entity.

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CHAPTER 1.0 INTRODUCTION

Taking Moore's work as the point of departure or rather the point of origin, this thesis attempts to study the voids of Siena as spatial and physical elements that structure the morphology of the city. Using references from Heidegger's "The Thing," and Arabic philosophy, I intended to create a theoretical framework for understanding the concept of the void as an idea and as a physical entity.

1.1 THE PROBLEM

This study attempts to understand the ways in which humans understand the meaning of spatial and physical phenomena of the void that embody the city. The void, to me, generates conceptual meanings from the experience of the bodily structure of the objects. Specifically, I look at two kinds of objects--sculpture and city--and explore how the experience of the bodily structure of each is similar and how, as a consequence, sculpture can be used to interpret and analyze the meaningful appearance of the physical structure of a city. More specifically, I examine two sculptures by Henry Moore and show how their interpretation sheds light on how a part of the city that I wanted to study in the medieval Italian hill town, Siena, is experienced imaginatively.

My examination of Moore's sculptures and a *study area* in Siena reveals the difficulties inherent in trying to define physical boundaries of an object that denote the physical dimensions of an object, as they exist in a sculpture and in a fragment of the city, particularly when referring to an object's inside and outside, because inside and outside can not be clearly defined. What constitutes the inside and what the outside is the question central to this thesis.

In my study I attempt to revise the conventional understanding of what is inside and what is outside, and to answer the following questions: How do we understand Moore's sculptures as physical objects and use that understanding as an ideological framework for the exploration

of the city as a physical object? What makes the form of a physical structure of the sculpture and the city? How do the parts relate to one another to produce the whole? How are the spatial and physical phenomena of the void embodied in the city?

1.2 THEORETICAL BACKGROUND

In much the same way as sculpture is a physical object, so is a city. Both produce their own scopes of meaning. In this study, I explore the meaning of voids in sculpture and in the city, and interpret the notion of revealing the inside of the body. I seek to understand the idea of how the inside (or the other side) of form is revealed. I propose that voids have their own energy systems and that holes conceptually construct the connection between the two physical objects: sculpture and city. The structure of both city and sculpture incorporates voids. So I have studied the relationship between what is inside and what is outside and their interchangeability. This study does not see a relationship between a body and its absence, but sees the body as looked at from a different perspective--as looked at from within.

To understand this proposition more clearly, we first need to understand the nature of the void, how voids contribute to our sense of an object's physicality, and how visual elements are reduced to a matrix of positives and negatives through a process of abstraction.

1.2.1 The Nature of the Void

The concept of the inside and outside is the idea of having a system that we as human beings use to organize any physical object in our world. Moreover, a particularly significant role is played by the extension of one element, the inside or void, to the other, the outside or solid.

Henry Moore understood that the sharp boundary between the mass of an object and the negative space around it is an illusion. In his "Reclining Figure" sculptures, the space pours into the mass, and, conversely, the mass surrounds empty space, so the distinction between *inside* and *outside* space is blurred. At some level the viewer assimilates the notion that space admixes with mass.

The insides of Moore's "Reclining Figure" sculptures are considered to be the voids: both the holes and the hollowed-out cavities. They are also the other side of the form, the negative part

of the sculpture. These holes that are a representation of the inside of an object are also a representation of the manipulation of a point of view--or, in other words, Moore's willingness to get the observer to experience the object from within.

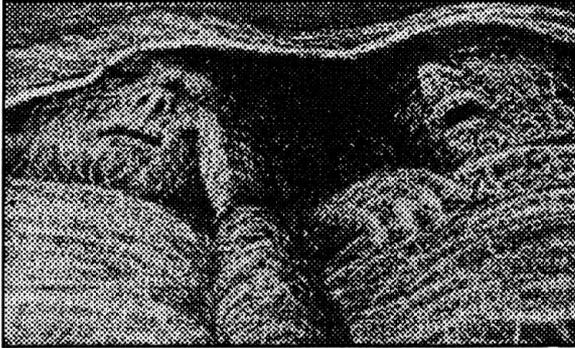


Fig. 1: *Henry Moore: "Two Sleepers," - chalk, and watercolor 1941.*
(Source: Erich Neumann. The Archetypal World of Henry Moore. p. 81)

In order to find an objective correlatives that gives adequate expression to the qualities I saw in Moore's work, I looked at his 1941 drawing of "Two Sleepers" (See Fig. 1 above) as an example of how he uses voids to express the soul of a body. The wide-open mouths of the sleepers in his drawing call up an image that complements the idea of the body as something hollow; the image of the "soul" is pictured in an idea that the soul departing at death is in the shape of an animal, and, thereafter, leads an existence independent of the body. That soul, however, is always a separate entity that can come into or go out of the body because it is of a different nature, and has no abiding connection with it. The idea of incarnation, of the soul taking a body, is expressed as if the body were a vessel into which the soul enters. This concept of the soul as an entity is also connected to the idea of the "outside" and "inside" and the way the body and soul, or positive and negative, are interchanged and made relative. Effecting the boundaries between inside and outside in his sculptures is all part of Moore's way of describing corporeal existence. The body in this specific drawing is experienced as something external and hollow, with vessel-like qualities.

Philosophers before Aristotle generally accepted the existence of something that was not a body, but that was homogeneous and indefinite, in which three dimensions could be traced,

and in which bodies were placed and moved. The Atomists called it *void* (or vacuum) and Plato called it *space*. Aristotle refused to accept this theory and attempted to demonstrate the impossibility of a void, and deny its existence. He did so with a number of different arguments which can be divided into two general kinds. The first asserts that the void is impossible because it is thought to be a place with nothing in it or a place deprived of a body occupying it. If the void is three-dimensional, he asserts, it would be a body and could not accept another body in the same place. His second asserts that movement is impossible in the void. This argument was derived from Aristotle's principles of dynamics. A body moving by violence moves in proportion to the force exerted on it and in inverse proportion to the resistance of the medium in which it is situated. But since the void would provide no resistance, the body "would move with a speed beyond any ratio,"¹ which is impossible. When the Arabic philosophers first came to know the philosophy of Aristotle, they adopted most of its essentials, particularly those denying the possibility of a void within the sphere limiting the universe. In the fifteenth treatise of the Arabic encyclopedia, they assert that "the word *void* designates a free place in which there is nothing."²

Based on my understanding of the reasoning of the fifteenth treatise, I assert the following: *Architecture is the art of the hollow*. It is defined both from the interior and from the exterior. We penetrate it with our body and not only our mind. My study accounts for these double aspects of hollow (void) and solid, not only in buildings, but also in the city as a *hollowed body*, and examines the boundaries that continue to distinguish an "inside" and "outside" (the presence and absence of contrast) that exist in the overall idea of the city as a physical object. As Heidegger says, "A boundary is not that at which something stops but, as the Greeks recognized, the boundary is that from which something *begins its presencing*."³

¹ qtd. in Pierre Duhem, Medieval Cosmology Theories of Infinity, Place, Time, Void, and the Plurality of Worlds (Chicago: The University of Chicago Press, 1985) 376.

² Duhem, 370.

³ Martin Heidegger, Building Dwelling, Thinking in: Poetry Language, Thought. trans. Albert Hofstadter. (New York: Harper & Row, 1971) 154.

Before the Renaissance, medieval cosmologists argued that "the void does not have a real definition....It admits only a definition in name; it does not claim that it is a being from its definition except as a manner of speaking."⁴ Their response to Aristotle must be understood as follows: the void is neither an accident nor an incorporeal substance; consequently, if the void were a separated space, it would be a corporeal substance, so that the void and the plenum would be the same thing; however, the void is nothing at all.

It appeared to them that the void cannot be. In fact, if it were, it would be a substance or an accident. But the void is not an incorporeal substance, for it would then be a soul or an intelligence. Neither can it be a corporeal substance, for then it would occupy a place. Finally, it can not be an accident, for an accident cannot exist separate from a substance, and the void is a separate dimension.

In trying to answer the question whether the void is possible, John Hennon suggested that "if two abstract things are essentially distinct, and if one of these two things does not depend essentially on the other, God can separate the two things and conserve them separated from each other. He can also destroy one while keeping the other...: God can, therefore, by annihilating that which is contained in the lunar orb (and conserving heaven), make the void exist."⁵

To me the void is the distance between two surfaces, for it is a divisible space, holding no body, and capable of receiving a body, although deprived of the presence of such a natural body. Therefore, "the void exists as long as you don't throw yourself into it."⁶ That is also the distinction between void and space. Architecture makes visible spaces to be inhabited by people. These spaces acquire an identity and become a point of reference for our existence;

⁴ Pierre Duhem, Medieval Cosmology Theories of Infinity, Place, Time, Void, and the Plurality of Worlds (Chicago: The University of Chicago Press, 1985) 377.

⁵ qtd. in Duhem, 416.

⁶ qtd. in Pierre Von Meiss, Elements of Architecture From Form to Place (London: E& FN Spone, 1992) 135.

however, voids are not intended to be a visible part of the city; they are the inner spaces that belong to the interior or the inside of the body where the soul dwells, which is the metaphysical aspect of the physical world of the city. In other words, the city as a corporeal entity is made up not only of what we see but what we do not see as well.

From the discussion above emerges a contradictory idea of what the void really is. As we already have seen, the void is a well-understood concept that spans time and culture, but it is also a historic term loaded with contradictions. However, I concluded from the discussions of the void that while space is a "construction" since it is meant to produce meaning, the void is a by-product of the process of construction (of the city), and not its purpose. We do construct spaces but we do not construct the void because by its nature the void is "leftover" space.

In this thesis, I assume that the void embodies an *absence*, or that the void is always equivalent to an *absence*, which raises the question of its meaning. At the same time, I do not suppose that this absence necessarily represents the negation of something. It may define something by making it non-present, denoting its potential and its meaning. In the end, I hoped to be able to understand the void's peculiar nature by looking at its two main aspects. The first deals with its physical sense, and the second its conceptual sense. However, the configuration of the absence becomes more tangible by the end of the study. After all, if you can see it and touch it, it has a *presence* in as much as it exists to the senses. But here presence means something more than merely being perceptible-- something, rather, analogous to the presence of the potential in reading into the physical aspect of the phenomena called the *void*.

By attempting to describe the physical and conceptual senses of the void, my study tries to understand the plurality of meanings that the city as a vessel contains. In order to analyze and provide a critical and different interpretation of the city, I focus on the invisible, unseen side of the city that is its unplanned part. However, the meaning of void is an open-ended issue

that does not have a distinct resolution, but it is also evidently part of an idea of the physical dimension of the city because it deals with the absence of intention to create a space in the city. This presence of the void is an important part of our built environment if we understand that, as in the case of Moore's sculptures, it is not only that the negative spaces are an integral part of our reality, but that the void is a repository of the inner part of the body of the city.

Searching for the potential meaning that exists in the void, I explored its physicality believing that there was something to discover.

1.2.2 The Sense of Physicality

Moore's sculptures are a point of departure, not only for conceptually understanding how voids contribute to an object's physicality, but also for the new exploration into the relationships between *mass* and *void*, decentering our conventional understanding of that relationship between them in the same way that Einstein's universe is a departure from Euclidean geometry. Moore's work embodies a finely tuned language of the body, and that physical sensibility, that comprehension, was very evident in the "Reclining Figure" sculptures. One can, by looking at his figures, get a refined understanding of mass, weight and delicacy. There is an enormous amount of physical understanding necessary to be able to move mass and volume gently. And in the end his work has to exist as a physical object.

I suggest that the answer to the above questions, based on my understanding of Moore's work, is that there is something which is present and something which is absent, the seen and the unseen of the object. However, we have to remember that an object is not only whatever is presented to us as a form. There is also the reality of the unseen, the other side of the form that is presented.

Entering the reality of the unseen is like cutting through the object--the cutting which shows more about its volume and space, and even more about its inside and outside. The holes in Moore's figures invite the observer into some very macabre kind of participation. Cutting

holes through the body opens up the object, and gives the observer the feeling of looking at an object from the inside, not outside, even when stepping back and looking at it from a distance. Moore's "Reclining Figure" sculptures are good examples of his interest in changing the perceptions of people who view an object. And the object is a result of that interest. Moore in a way provides access to the object from the inside, not the outside.

Making holes in the "Reclining Figure" sculptures resulted from his feeling that sculpture creates spaces. He thought that the spaces created by sculpture would be more aesthetically pleasing or satisfying if the inside were connected to the outside, allowing the spaces to reveal themselves. The holes are another tool for the physical conversation that went on. No matter the size of the hole, it is always the well of energy. And more than that, when Moore takes parts of the figure out, he is not just taking away, but clarifying. In the end, his sculpture is about clarifying the existence of an object as a physical corporeal substance.

1.2.3 The Process of Abstraction

Moore writes, "My sculpture is becoming less representational, less outwardly a visual copy, and so what some people would call more abstract; but only because in this way I can present the human psychological context of my work with the greatest clearness and intensity."⁷

The process of *abstraction* is one of distillation, the reduction of multiple visual factors to only the essential and most typical features of what is being represented. Total abstraction can take two paths: abstraction towards symbolism, sometimes with experienced meaning, sometimes with arbitrarily attached meaning, and pure abstraction, the reduction of the visual statement down to the basic elements, bearing no connection to any representational information drawn from the experience of the object.

The reduction of all that we see to the basic visual elements of positive and negative is also

⁷ *qu*t. in Herbert Read, Henry Moore: A Study of His Life and Work (London: Thames and Hudson, 1965) xiii.

a process of abstraction, which, in fact, has far more significance to the understanding and structuring of the visual physical object, whether it be a sculpture or the city of Siena. Abstraction of Moore's sculptures is a reduction to a more intense and distilled meaning. The abstraction exists in visual substance, not only in the purity of a visual statement of solid and void, but also in a modification of the basic visual elements of solid and void facts.

The potential in the reduction of the realistic visual information to abstract components lies in the response of the arrangement to the effect intended. The abstract conveys the essential meaning, cutting through the conscious to the unconscious, from the event to perception. The nature of abstraction releases the visualizer from the demands of representing the finished final solution, and so allows the underlying structural forces of the compositional questions to surface and the pure visual elements of solid and void to appear and be applied with direct experimentation.

1.3 RESEARCH METHODOLOGY

This study used a three-phase approach in examining two sculptures by Henry Moore and a study area in Siena to understand how voids--holes and hollows in Moore's work and unplanned or accidental spaces in Siena--produce their own reality. The third phase was creating three dimensional interpretations in clay of the understanding of what the physicality of the void is. The phases relied on information extracted from three case studies: of Moore's "Reclining Figure" in elmwood from 1935-36, of Moore's "Reclining Figure" in elmwood from 1945-46, and of a study area from the city of Siena.

I chose to study Siena because it represents most clearly in its medieval body the relationship between its constituent elements: the *voids* and the *solids*. The medieval urban fabric of Siena does not just recall, but establishes the physical context for the metaphorical relationship between the solid and void. This is because Siena is a bounded city. For me it was more important to read the city as the *body of an object* than as the *hierarchy of relationships* between, say, streets, piazzas, and courtyards (See Fig. 2 below) for understanding and analyzing the morphology of the city.

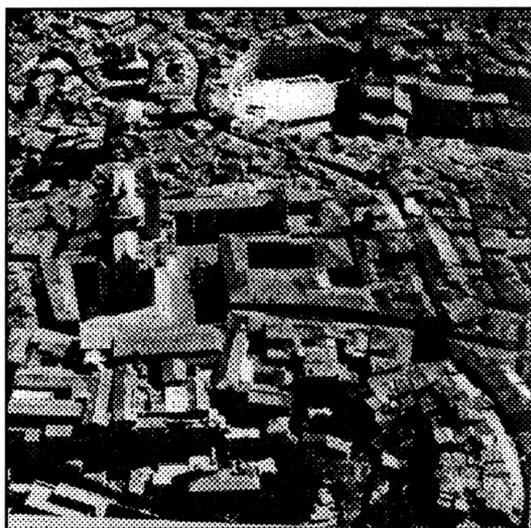


Fig. 2: Aerial view of the city center of Siena with the Piazza del Campo and the Piazza del Duomo. (Source: Benevelo Leonardo. The History of the City, p. 305)

In this study, I looked at an area in the city of Siena, the size of a couple of blocks, and investigated the qualities that exist within the relationship between masses and voids in the city's fabric. I explored this *study area* in four different scales (See Fig. 3 on page 13), ranging from a more general portion of the city to a more specific one. The idea of proposing a fragmented type of view in the study area rather than looking at the city as a whole is to say that the *fragment* of Siena is able to interpret and represent and reveal the city as a whole.

My study does not explore designed spaces or intentional spaces such as the streets and piazzas, but investigates the accidental unplanned voids. I examine the following: 1) The relationships between buildings as *continuous masses* and the surrounding spaces around the buildings as *enclosed voids*, omitting the formal spaces, and 2) The figure/ground composition and the shape of solids and voids.

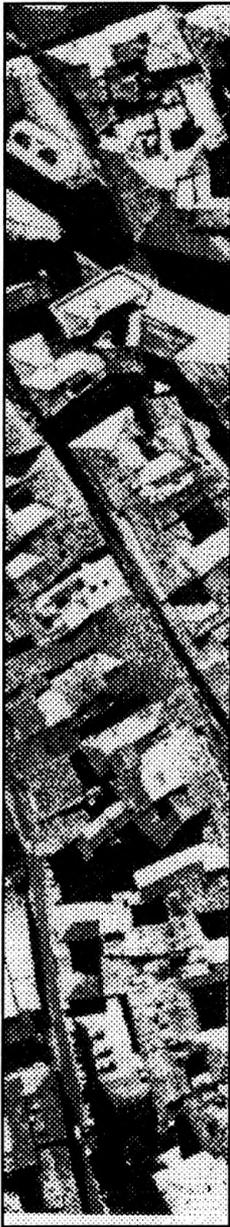


Fig. 3a: The study area from the city of Siena in four different scales.



Fig. 3b: Study area scale no. 2

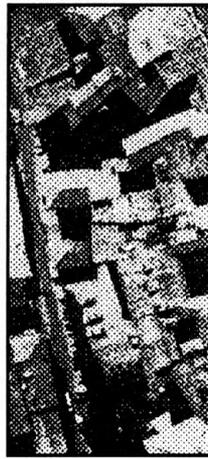


Fig. 3c: Study area scale no. 3

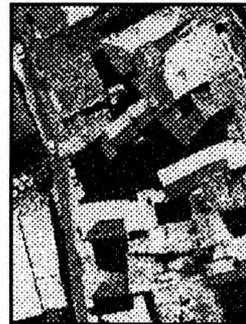


Fig. 3d: Study area scale no. 4

1.3.1 Three-Phase Approach

This study proceeded in phases. In each I extracted information that allowed me to achieve the clarity needed for moving to the next phase. Essentially, the phases of my study constitute a means of inquiry into the analogy of solids and voids in Moore's sculpture and relationships between solids and voids in the city's architecture.

The basic phases in this study were the following:

I. Phase One: The Study of Henry Moore's Sculptures

- A.** Computer scanning and photographic transformation of Moore's "Reclining Figures."
- B.** Three-dimensional interpretation in clay of my photographic transformation of Moore's works.

I. Phase Two: The Study of The City of Siena

- A.** Scanning and photographic transformation of a fragment of the city of Siena.
- B.** Three-dimensional interpretation in clay of a fragment of the city.

III. Phase Three: A Comparison Analysis and Conclusion from Phase One and Phase Two

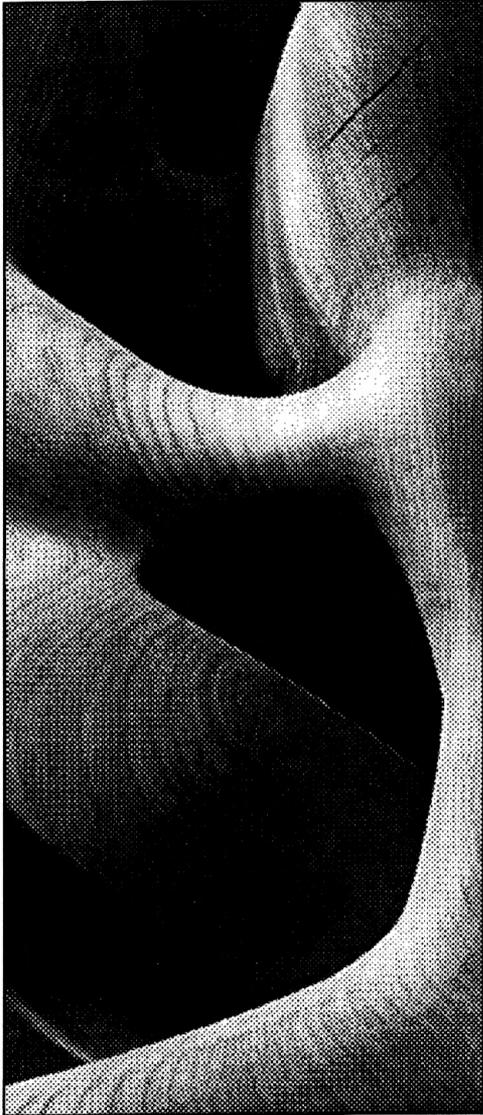


Fig. 4: Photograph showing a *fragment* from Moore's "Reclining Figure" (1945-46)
(Source: Henry Moore. Sculpture and Drawings, 88i)

CHAPTER 2.0 PHASE ONE: STUDYING MOORE'S "RECLINING FIGURES"

2.1 HENRY MOORE AND THE "RECLINING FIGURE" SCULPTURES

Considered the most prominent sculptor of the twentieth century, whose work has influenced much contemporary figural sculpture, Henry Moore (1898-1986), a British sculptor, is known for his large, semi-abstract sculptures of the human figure. In my study, I examine Moore's sculptures from the 1930s and 1940s, many of which are highly abstract, consisting of simplified, rounded pieces carved from wood with numerous *indentations* and *holes*.

2.1.1 **Background**

Two-thirds of Moore's sculptures of full-length figures are reclining figures. With one exception, they are all women. Most of them are nudes, but though they lie with knees or thighs apart, their overall poses do not portend the availability commonly implied in reclining female nudes. Instead their postures recall the Toltec Mayan rain god, *Chacmool*, in Mexico.

Moore had been very much torn between the primitive art forms he learned about through his visits to the British Museum during his years at the Royal College, from 1921-24, and his involvement with studying European tradition, which developed during a six-month stay in Italy as a traveling scholar in 1925. The six-month exposure to the master works of European art which he saw on this trip had stirred a conflict in him concerning his previous ideas. The facts suggest that the very theme of the reclining figure was a legacy of his Italian journey. Among the 25 recorded sculptures he made before going to Italy, there is only one reclining figure (of a man). In Italy he would have seen any number of reclining figures--figures from the Renaissance and antiquity. During the two years after his return, he made four sculptures of reclining women, quite classical in manner. Then came his discovery of the *Chacmool*--a discovery reflected in his work for years after.

In 1929 and 1930, he carved two reclining figures--probably his most outstanding early works--which were inspired by the Toltec-Mayan *Chacmool* from Chichen Itz'a in Mexico (See Fig. 5 page 17). His 1930 figure almost paraphrases *Chacmool*, but with a few

differences: the *Chacmool's* head is turned at right angles to the body, while Moore's head looks back over one shoulder; the *Chacmool's* head is symmetrical, while Moore's head is asymmetrical; the torso in the *Chacmool* has the same direction as the legs (See Fig. 5 below) and is supported by both elbows, with the forearms placed symmetrically across the body, while the torso of Moore's figure is twisted out of line and its weight is supported by one elbow; and the legs of Moore's are spread wider.

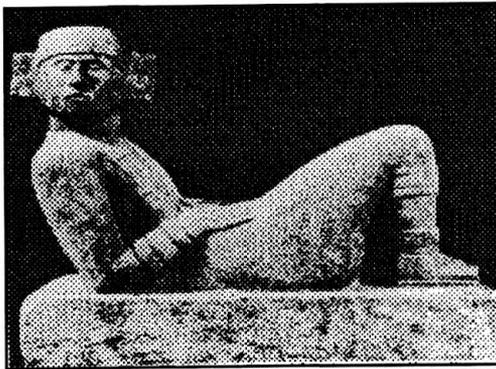


Fig. 5: Toltec-Maya, eleventh through twelfth century A D. *Chacmool*, from Chich'en Itza, Mexico.

(Source: David Sylvester. *Henry Moore*, p. 158)

The figure carved in 1929 resembles the *Chacmool* more closely in the massive, blocked-out character of its shapes. But here, too, symmetry and frontality are rejected, except for the unusual turn of the head at right-angles to the axis of the block. The uprightiness of the head and neck gives both figures the same peculiar look. On the other hand, Moore has taken the parallel legs of the *Chacmool* and turned them onto their sides, transferring the body's weight from the buttocks to one hip and has, accordingly, twisted the torso to one side and put one arm on the ground for support, bringing the free arm up to support the head. Whereas the Mexican figure's body and limbs form a compact unit with a single direction, Moore's, while preserving all its chunkiness, has reconciled this single direction with contraposto. Moore insists on asymmetry, which is not easily reconciled with his insistence on static poses. He occasionally uses postures that are asymmetrical from every angle. He creates opposition between the two halves of the body, which tends to undermine their continuity. Certainly Moore's preoccupation with asymmetry concurs with his obsession with Michelangelo and pedimental figures from the Parthenon. But in 1935, he listed "the great sculptures of the

world" as the Sumerian, Early Greek, Etruscan, Ancient Mexican, Fourth and Twelfth Dynasty Egyptian, Romanesque, and early Gothic.⁸ Most of these have a distinct bias toward symmetry. Moore admired the Mexican approach to a full three-dimensional conception of form, and the full three-dimensional existence of Sumerian sculpture. And yet he believed that sculpture has no two points of view that are alike. His desire for form was completely realized and connected with asymmetry.

⁸ Henry Moore, "Mesopotamian Art," The Listener 13 (1935): 944.

2.2 CASE STUDY no.1: THE "RECLINING-FIGURE" (1935-36) IN ELMWOOD

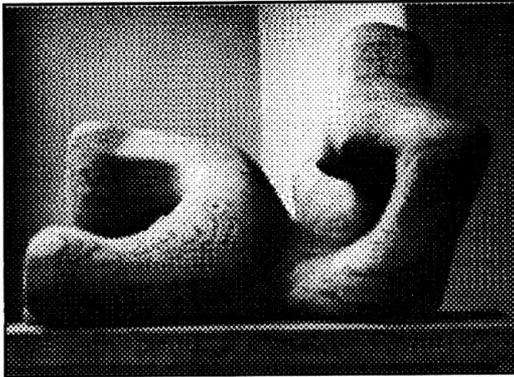


Fig. 6: *Henry Moore: "Reclining Figure,"* (1935-36) in Elmwood (35 in.). Albright-Knox Art Gallery, Buffalo, N.Y. (Source: Erich Neumann. *The Archetypal World of Henry Moore*, p. 68)

Moore's "Reclining Figure" in elmwood (See Fig. 6 above), now in the collection of the Albright-Knox Art Gallery, in Buffalo, New York was begun in 1935 but not completed until 1936. The elmwood is clearly striated material and Moore took advantage of this fact to give visible contours to the volume of his figure. The figure has a hollowed torso, the open space that unites the back and the front of the figure in a single rhythm. The upper limbs flow into the lower limbs without interruption; the head and the breast and shoulders are united in one clasped knuckle-like tension.

Moore prefers cutting away to building up. The chest tends to be carved out altogether until nothing is left but a stirrup-shaped form connecting head and shoulders to the rest of the trunk. The chest, of course, is the most hollow part of the body, and is represented as a large hole, which is roofed by the shoulders and flanked by the upper arms. But what did Moore intend with this procedure? How did Moore manage to organize the body trunk and the limbs into one integrated composition?

By transforming the heaviest volume, the trunk, into a configuration of narrower shapes, he found a common denominator for the whole figure. The beam-like or ribbon-shaped units which represent arms and legs differ little from the ones which are found in the area of the trunk; and the holes that pierce the body resemble those between the legs and those between

the arms and the torso. A surprising symmetry is produced by the correspondence between the frame of the pierced chest and a similar frame formed by the two legs. The figure reposes on its horizontal base, which is its resting point.

Uniformity is the method that Moore uses among the parts of his figure. However, he stresses this uniformity not only by using roughly equal sizes and proportions of the units but also in their shapes. In his own way, Moore eliminates the most distinctive forms and details of the face, feet, and hands; instead he renders them abstractly in grossly articulated shapes. He also achieves uniformity by avoiding a clear delimitation of the parts (See Fig. 7 below).

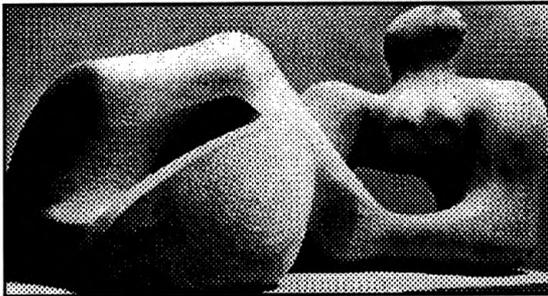


Fig. 7: *Henry Moore: "Reclining Figure" (1935-36) another view.* (Source: Henry Moore. Sculpture and Drawings, 83a)

The units flow into each other and create a continuous void at the same time that the figure is a continuous mass. The hands and feet are eliminated (See Fig. 8 below). They merge with each other or stream back to the body of the figure, thus permitting the circulation of the void system energy to continue.

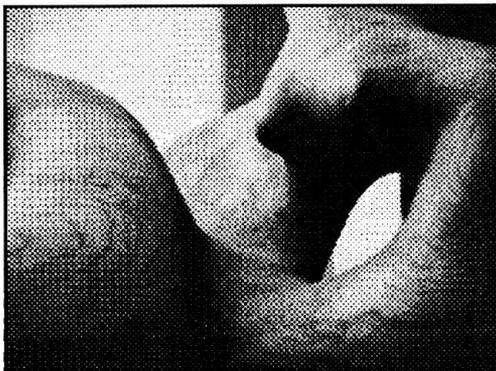


Fig. 8: *Henry Moore: "Reclining Figure," (1935-36) detail.* (Source: Erich Neumann. The Archetypal World of Henry Moore, p. 69)

Moore's approach resulting in the equalization of the parts, obtained by the breaking-up of the trunk, tends to minimize the difference between it and the limbs. And a uniform overall principle of design seems to govern the composition as a whole in all its parts. One also notes that the horizontal position, which Moore uses frequently in all his "Reclining Figure" sculptures, devalues the importance of the head and stresses the abdomen as the compositional center. The significance in Moore's work, however, is in the pattern of forms which characterize the whole figure without distinctly specifying the individual parts.

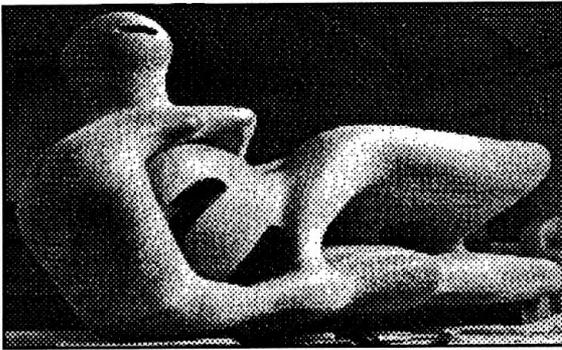


Fig. 9: *Henry Moore: "Reclining Figure,"* (1945-46) in Elmwood (75 ins), collection: Buchholz Gallery, N. Y. (Source: Henry Moore. *Sculpture and Drawings*, 88g)

2.3 CASE STUDY no.2: THE "RECLINING FIGURE" (1945-46) IN ELMWOOD

In the "Reclining Figure" made from elmwood during 1945-46 (See Fig. 9 above), Moore brought out the dynamic and open solidity of the figure in the way he carved the wood, tunneled holes, and generated biomorphic shapes. Again in this sculpture Moore used wood, which is an organic material, lending itself more to the pliability of the human body, especially the female's. The grain of the wood in the sculpture flows around the head, and moves down the shoulders and arms, and then, following the natural forking of the wood, thrusts out with increasing horizontal rapidity and divides into the cavernous legs. The grain leads into the concavities and peaks at the convexities, as in the upper knee. The silhouette, contour lines, shapes and holes were carved to conform to the grain, bringing out the woodiness of the material (See also Fig. 12 on page 24). In a way, the solidity of the wood is very active, pointing to the energy underlying the surfaces, as if the sculpture had been carved from within. The units of the body, although precisely articulated, flow into each other. Most of the body presses out into the space--the breasts and limbs swell softly--the head, shoulders, arms, and knees push out and up forcefully.

In this figural sculpture, Moore integrates many of the basic polarities and rhythms of human experience. The flow of the surfaces, the soft textures, and the swelling breasts are intensely feminine, but the hard aggressiveness of the head, shoulders, arms, and hands suggest masculinity (See Fig. 10 on page 23).

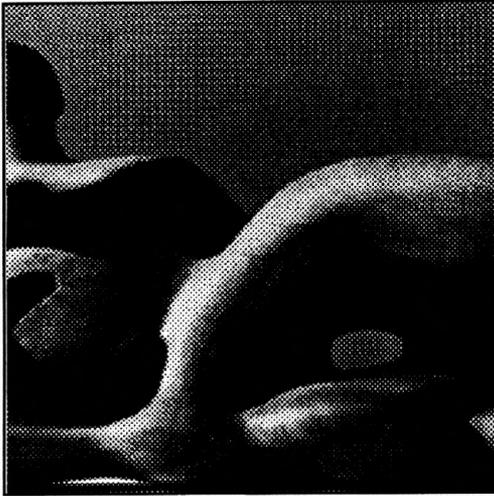


Fig. 10: *Henry Moore: "Reclining Figure,"* (1945-46) detail.
(Source: Henry Moore. Wood Sculpture, p. 119)

The concave-convex polarities are stronger in the chest area, the compositional center. We sense breathing in this embracing of air. This breathing is what unifies the slow in-and-out rhythm of the sculpture. Below the breast, the ambiguities multiply with the perspectives. The spherical shape an observer sees facing the figure may suggest the heart or possibly viscera or even a child in the womb (See Fig. 11 below).



Fig. 11: *Henry Moore: "Reclining Figure,"* (1945-46) detail.
(Source: Henry, Moore. Wood Sculpture, p. 119)

The way the form of the body is stretched out suggests it is calm and contented. Moving to

the right, the observer's attention is drawn inexorably by the direction of the legs. Continuing around the figure, the observers notes the shadows that lengthen and soften, as with evening. From the perspective of the feet, the holes become cavelike and draw in shadows, like air into a vacuum. Approaching the back of the figure, an observer notes how the grain moves up to the head, defying the pull of gravity, as a tree's limbs reach skyward toward the sun. The absence of facial detail makes the head mysterious and eternal. The head is one with the body, except for its coldness and the eye-slits, which echo the gashes in the breast.

This "Reclining Figure" reveals the slow dynamism of the open solidity of the human body, with a rhythmic unification of its polarities, in its mass and its space. Moore is rendering the human body, not as it looks from the outside, with its proportions objectively fixed, but as it feels from the inside, with its relationships subjectively determined. Yet, with this figure there is an intense interplay between inner and outside experience. Looking at Moore's "Reclining Figure" (See Fig. 12 below), we are not sure where the solid forms of the body end and the space (void) begins. We have to stand back in order to perceive the body properly. However, the whole completely dominates the details or the parts. Furthermore, energy exists in the space or void within the figure and pushes out centrifugally, guaranteeing our distance. When we walk around and into the void space of Moore's "Reclining Figure," it is just as if we were walking around the closed circuit of its energy system in the void.

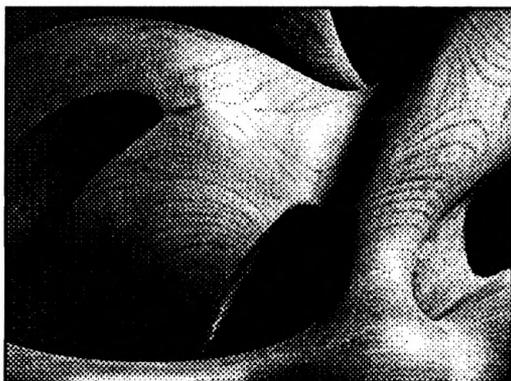


Fig. 12: *Henry Moore: "Reclining Figure,"* (1945-46) detail.
(Source: Henry Moore. *Sculpture and Drawings*, 88i)

2.4 PRINCIPLES DERIVED FROM CRITICISM OF MOORE'S SCULPTURES

In the previous chapter I examined the important principles of design exhibited in Henry Moore's works. To understand and define his methods for exploring the physicality of sculptural pieces as bounded entities that are built organically, I analyze in this section his "Reclining Figure" sculptures from 1935 and 1945 as case studies. I also discuss how his principles of design operated in the "Reclining Figure" sculptures to generate opaque objects that engage observers in their mysteries, and I explain the basic components of Moore's visual language.

Sculpture, the art form of gravity, lost its borders in Moore's "Reclining Figure" sculptures, which had their centers turned inside out and their solidity transformed into transparent planes. Such an activity focused attention on the interrelationship of space, mass, and gravity. To construct a basic system for recognizing and understanding Moore's sculptures as physical objects, I have identified the following principles as having an equal application to the analysis of Moore's work:

1) **Gravity and weightlessness.** For Moore, gravity comes first; his "Reclining Figure" sculptures desire the earth. The figures are static and stable because of their sense of physical possession, but at the same time they reveal a secondary level of visual appearance where the body of the sculpture is free from the forces of gravitation and have a dynamic tension within the figures themselves resembling weightlessness.

2) **The relationship between *mass* and *space* in the composition.** The extent of the sense of hollowness created by Moore's objects reflects the quality of the tension between their mass and space. If we refer to the matter contained in the object, we speak of its *mass*. But if we refer to the holes and hollows in their body we speak of its *space*. Moore redefined the sculptural relationship between space and mass, and in his "Reclining Figure" sculptures, space and mass are not distinct entities, but make up a unified composition.

3) **The relationship between figure and ground.** In Moore's sculptural figures, there is a dramatic interchange of forces within the figures. That interchange also applies to the relation between the figure and ground, and the figure and its surrounding.

In the discussion that follows I apply the above principles to Moore's "Reclining Figure" sculptures from 1935 and 1945.

2.4.1 Gravity and Weightlessness

Gravity is the force on earth that affects us most in our daily life. According to Leonard Shlain, "Gravity is the force that shaped the chromosomes of life. It crushed our ancestors, the primates, pulling them to their graves. Gravity has profoundly affected our species' functioning because we are descendants of mammals that flew through the air without wings. The reality of gravity has insinuated itself into the religion, philosophy, art, and science of all peoples. This force is so much a part of our existence that our response to it is autonomic. And yet, humankind's attempts to decipher the cryptic nature of gravity have allowed us to illuminate and begin to resolve the mystery of our world."⁹ When discussing the idea of *gravity*, I am concerned with the way a figure meets the ground, and how the body position relates to the ground, which has to do with the notion of the void in the body.

Aside from its metaphoric possibilities, the "Reclining Figure" is the ideal vehicle for Moore's constant preoccupation, which is thinking from the ground up. When he was teaching in art schools he always encouraged his students to start a life-drawing of a standing figure with the feet and work upward. It was essential for him that the figure should be firmly grounded. For him, gravity comes first, and however much he may erode the mass, its weight is the point of departure. A figure close to the ground (standing or reclining) gives him that feeling of weight.

⁹ Leonard Shlain, Art & Physics Parallel Visions in Space, Time and Light (New York: William Morrow and Company, Inc., 1991) 378-79.

However, the interesting aspect of Moore's objects dealing with gravitation has to do with the fact that in his sculptures one can recognize a contradictory level opposing the generation of the sense of gravity. At that level Moore succeed in freeing his object from the limitation of gravity forces by simply using the holes in his sculptures, creating a tension between the holes and the body of the sculpture.

Therefore in Moore's "Reclining Figure" sculptures, the figures are static and stable because of their sense of physical possession, but at the same time they appear free from the limitations of gravity and have a dynamic tension within themselves. This sense that the figures are free from the earth's gravitational field is probably the most dominant visual force experienced by those who view his "Reclining Figure" sculptures.

2.4.1.1 Features That Suggest the Freedom of Gravity

Moore has emphasized the object's physical possession of gravity. His "Reclining Figure" sculptures desire the earth; he finds more satisfaction in rootedness than in flight. Most of his "Reclining Figure" sculptures gaze out to the land, and usually when they look up they show fear. Earthiness makes the "Reclining Figure" (1945-46) weighty and stable, and maybe the heaviness of Moore's sculptures makes us linger.

However, the slow sweeping rise of the arms, shoulders, and head of the "Reclining Figure" (1945-46) above the horizontal stress of the low base and reclining body suggests, like a tree, the emerging from the earth, an anthropomorphic and topographic merging. The role of the base is practical in terms of physical support. The massiveness of the base accentuates the heaviness of both the figure and the earth.

Furthermore, this "Reclining Figure" can recline on any surface and still be "free and stable at the same time."¹⁰ Moore's ideal is to "turn an inert block into a composition which has a

¹⁰ qtd. in John. D. Morse, "Henry Moore Comes to America," Magazine of Art, March 1947: 101.

full-form existence, with masses of varied size and sections conceived in their air--surrounded entirely, stressing and straining, thrusting and opposing each other in spatial relationship--being static, in the sense that the center of gravity lies within the base (and does not seem to be falling over or moving off its base)--and yet having an alert dynamic tension between its parts."¹¹ It is inconceivable that this ideal could be realized in a sculpture of a single figure that was not a reclining figure. (Possibly this is one of the reasons why so many of Moore's vertical figures are not of one figure but two: mother and child, external and internal).

Moore's suggestion of motion and freedom in a static visual statement is at once harder to achieve without distorting reality and at the same time implicit in everything we see. This design principle of defying gravity describes compositional tension and rhythm in Moore's work when what is being seen is fixed and unmoving, and has a physical connection to our earth substance.

At some point the idea of gravity appears at a secondary level of understanding: as an illusion of gravity embodied in the nature of the holes of the sculptures. Maybe because of the relationship between the hole and the body of the sculpture, the sculpture itself starts to develop its own center and its own sense of hollowness. This sense of hollowness also create its own system of energy and tension that at time freed the object from the forces of gravitation and makes it weightlessness.

In the "Reclining Figure" sculptures the complementary reciprocity is such that space dilates away from any mass of the object that creates the compression or dilation of space. The space (void) also curves or wraps in relation to the mass while it is being compressed, resulting in another discrepancy in terms of a Euclidean reality. The spaces (holes) in Moore's "Reclining Figure" sculptures, expanding away from the surface of the earth, coincide with the idea of freeing the object from the limitation of gravity, allowing freedom of infinite acceleration and

¹¹ Henry Moore, "The Sculptor's Aims," Unit 1. ed. Herbert Read. (London: Cassell & Co Ltd, 1934) 29.

liberation. Using all these components, Moore made his figures look the way our body feels from the inside. These forces not only energize the figural object itself, but perhaps suggest that the space in and around the object is an energized and enlivened space.

Thus the primary ideal in Moore's work becomes "energy and power." Moore's old ideal of "pent-up energy"¹² is compressed in his work. It's the bone that pushes out from the inside, and it is from there that the sense of weightlessness and the energy come from. Those parts manifesting such outward pressure are the "key points" for Moore. Especially in his "Reclining Figure" sculptures, "pent-up energy underlies a surface whose even tension implies that the energy is firmly contained, and not threatening to burst the bounds of the form."¹³ When the work contains spaces/places which suggest something "pressing from inside trying to burst," Moore suddenly alternates with places where the pressure is relaxed, or where the sculpture seems to come to rest. Moore creates tensions and contrast between the parts of the figural body using the qualities characteristic quality of solid and void, inside and outside, when at the same time what is seen in his work is fixed in time and place.

2.4.2 Relationship Between *Mass and Space*

We usually think of objects or figures as solids. If we are at all conscious of the spaces in between the objects, it is usually the ground for the objects, which is void. This void can be drawn as solid to reveal the effect of making space and mass relations ambiguous. The balance between space and mass is so delicate and precise that we may speak of "solid-void ambiguities."

The beauty of the visual composition in Moore's sculpture is the negotiation through visual means of positive and negative. The intuitive approach to the solid and void in Moore's sculptures is all about the level of dependability and accuracy between the inside and outside.

¹² Moore, "Sculptor's" 30.

¹³ David Sylvester, Henry Moore (New York: Frederick and Paeger, 1968) 116.

Until the end of the nineteenth century, the mass of the sculpture sharply displaced and delineated the empty space surrounding it. The distinction between what was empty space and what was hard mass was, therefore, clear. Lines of sight always passed through empty space to reach the mass. In the fifteenth century, Leonardo Da Vinci proposed that the boundary of a body is neither part of the enclosed body nor a part of the surrounding atmosphere. Yet, sculptors remained sure that the boundary did lie on a crisp margin. Later, Henry Moore in his own way redefined the sculptural relationship between space and mass. He understood that the sharp boundary between the mass of an object and the negative space around it was an illusion. In his sculptures "the space pours into the mass and conversely the mass surrounds empty space so the distinction between inside mass and outside space is blurred. Moore required that the viewer at some level integrate the notion that space admixes with mass; both affect each other and seem to inform each other."¹⁴ In his "Reclining Figure" (1945-46) the crisp boundaries between the statues as object and the negative space surrounding it is absent. His work does not sharply delineate a boundary between space and mass. According to the critic Herbert Read, "Space invades the object, and the object invades space, with one plastic rhythm."¹⁵ The holes are made in a way that they have shapes in their own right, and sometimes the forms he creates are only shells holding holes.

The positive and negative, or solid and void, in Moore's sculpture are in no way trying to describe a mirror image of something. The positive is always the solid form, and the active stress is, for the most part, the negative. However, what dominates the eye in Moore's visual experience would be considered the negative elements while those more passively displayed would be considered the positive.

Moore's sculptures use relative and active clues to inform the way observers see the object. Sometimes it is almost impossible to see what one is really looking at (especially after

¹⁴ Leonard Shlain, Art and Physics: Parallel Visions in Space, Time and Light (New York: William Morrow and Company, 1991) 373.

¹⁵ Herbert Read, The Art of Sculpture (New York: Pantheon Books, 1961) 113.

scanning the image in the computer). The positive-negative sequence is demonstrated by whether one sees the solid form or the negative hole in it, first. In Moore's pieces we tend to see the negative (the void) first and only then the solid positive. There is a dominance of one element, the void over the solid, which reinforces the ambiguity of the visual statement. Moore's negative-positive visual state is never resolved.

2.4.2.1 Features That Illustrate The Relationship

Moore's sculptures deal with the relationships of masses. Aesthetically, this is the abstract relationship of masses. In Moore's "Reclining Figure" sculptures, for each convexity a corresponding concavity is created, and the result is an expressive rhythm of forms. His sculptural pieces are conceived as rhythmical variations of boss and hollow, of mass and void, with the result that light no longer opposes the solidity of the object but is an integral part of the total sculptural effect.

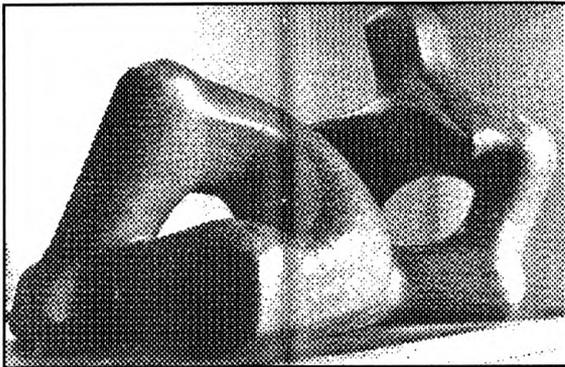


Fig. 13: *Henry, Moore: "Reclining Figure" (1935-36)* another view, showing the total sculptural effect of the relationship between mass and void. (Source: Henry Moore. Sculpture and Drawings, p. 86)

His sculptures also define the abstract relationship between mass and space, solid and void, or visible and invisible. One of the things that Moore's sculptures do is to energize the space through and around them. In his sculptures, Moore is constant in the way he uses gravity as a metaphor and freedom from gravity as an opposing metaphor. In his hands, sculpture, the art form of gravity, loses its borders, has its center turned inside out, and has its solidity transformed into a biomorphic representation of mass interlocking with volume (See Fig. 13 above). His "Reclining Figure" sculptures consist of space and mass elements trapped in each

other. Space and mass are not separate entities; they interact with each other in tandem symbiotically. In *Energy In Space*, Moore writes, "Eventually I found that form and space are one and the same thing. You can't understand space without understanding form. For example, in order to understand form in its complete three-dimensional reality you must understand the space that it would displace if it were taken away."¹⁶

2.4.2.2 Moore's Use of Holes and Hollows



Fig. 14: Henry, Moore. Fragment from "Reclining Figure" 1935-36, in Elmwood. Showing one of the holes in the sculpture. (Source: Henry Moore. *Wood Sculpture*, p. 98)

Moore made all his "Reclining Figures" sculptures look the way our bodies feel from the inside, so they embody the disharmonies we so often feel between the inside and outside of our bodies. Yet, in his figures this discord becomes harmonized. By 1934, believing that a sculpture cannot be really three dimensional in feeling unless the block has been broken down, he started making holes in his sculptures for letting space into the composition (See Fig. 14 above). As his language in his sculptures became more abstract, he used holes and hollows with more freedom.

¹⁶ Henry Moore, *Energy in Space* (New York: Graphic Society, 1973) 44.

His desire to make holes, he wrote, came from his wanting to make space and three-dimensional forms. "...[T]he hole," he writes, "is not just a round hole. It is the *penetration* through from the front of the block to the back."¹⁷ Holes in a sculpture, according to Moore, are the *intervals* that connect one side to the other, making it immediately more three dimensional. In his "Reclining Figures" sculptures, holes have as much shape-meaning as solid mass. The holes are consciously intended to be forms of varied sizes and sections working together with the mass in a spatial relationship.

In "Reclining Figure" (1945-46), in which form is opened out, the figure is divided into parts and the sculpture foreshadows the creation of hollow forms with forms inside them. These concepts, however, were fully developed in his later works. But after 1946, the *penetration* of the figure by *holes* and *hollows* became a central concept in his work. The imagery is governed by a fantasy of erosion. "The mystery of the hole" in his sculptures is "the mysterious fascination of caves in hillsides and cliffs."¹⁸ It is also the mystery of the eye sockets in a skull--where nature has eaten something away. But the image, which is peculiarly Moore's, is that of a tunnel dramatically dark and light, which can be entered only if one uses one's imagination. The image also evokes the interior of a woman's body, not only in its being hollow, but also holding something inside it.

Again Moore: "One of the things I would like to think my sculpture has is a force, is a strength, is a life, a vitality from inside it, so that you have a sense that the form is pressing from inside trying to burst, or trying to give off the strength from inside itself, rather than having something which is just shape from inside itself."¹⁹ This statement, made in the 1960s, might be an elaboration of Moore's old ideas of "pent-up energy"²⁰ compressed in a work.

¹⁷ Henry Moore, *Energy*, 52.

¹⁸ Henry Moore, "Mesopotamian Art," *The Listener* 18 (1937): 339.

¹⁹ qtd. in Warren Forma, *Five British Sculptors (Work and Talk)* (New York: Grossman, 1964) 59.

²⁰ Henry Moore, "Henry Moore," *Unit 1*, ed. Herbert Read (London: Cassell and Company, 1934) 30.

Another glance at the holes leads us to notice that they are not merely dead, dark, and empty intervals between the material parts of the figure, but substantial, as though they were filled with air. The surfaces which delimit the openings are frequently concave, not convex, forming hollow containers of space. The spherical holes which pierce the chests of the "Reclining Figure" (1945-46) are striking examples, in that they indicate the breasts. Wherever such concavities dent the sculptural body, air seems to fill them almost tangibly.

Holes were first used as an attempt to understand three-dimensional forms and grasp different kinds of forms, whether hollow, solid, or projecting from a surface--every possible three-dimensional reality. Moore wanted to make forms free themselves from the matrix. He also believed that "to understand space [he had] to think of actual penetration into the stone."²¹

According to Moore, the idea of *hollowed* masses is a means of stressing, yet also resolving, interior-exterior tensions between parts of the figure--a way of integrating outer facts with inner mysteries without compromising the sense of a figure which is open rather than closed. The result is an abstract object that seems to have developed through an interaction between the containing mass and the void at its core.

In his essay, "The Thing," Heidegger writes the following: "We represented the effective feature of the vessel, that which does its holding, the void, as a hollow filled with air. Conceived in terms of physical science, that is what the void, really is...."²² But when trying to explain what "the thing" is, Heidegger uses the analogy of the jug: "To pour from the jug is to give. The holding of the vessel occurs in the giving of the out-pouring. Holding needs the void as that which holds. The giving, whereby the jug is a jug, gathers in the twofold holding--in the outpouring. We call the gathering of the twofold holding into the outpouring, which, as a being together, first constitutes the full presence of giving: the poured gift. The

²¹ Henry Moore, Henry Moore on Sculpture (New York: Da Capo Press, 1992) 124.

²² Martin Heidegger, Poetry, Language, Thought (New York: Happer & Row, 1975) 171.

jug's jug character consists in the poured gift of the pouring out. Even when the empty jug retains its nature by virtue of the poured gift....But the gift of the outpouring is what makes the jug a jug....And in the poured gift the jug presences as jug. The gift gathers what belongs to giving: the twofold containing, the container, the void, and the outpouring as donation."

²³ Jugs and things are the objects of Heidegger's essay. For Heidegger a vessel is the kind of thing that holds something else within it, and still it is an object; it is a container. However, according to Jennifer Bloomer, we can never learn how the jug is by looking at its outward appearance: "The vessel's thingness does not lie at all in the material of which it consists, but in the void that it holds...only a vessel...can empty itself." But how does the jug's void hold something? She answers: "It holds by taking what is poured in. It holds by keeping and retaining what it took in. The void holds in a twofold manner: taking and keeping. The word 'hold' is therefore ambiguous....To pour from the jug is to give....But the gift of the outpouring is what makes the jug a jug."²⁴ Moore in his sculptures used the counterpart of leftover spaces to represent the struggle to achieve an essence of the whole that transcends and reaches for the depths of the vessel, which are the depths of its meaning. However, no matter how we look at the vessel, it always lacks something, but at the same time is full with meaning and significance. The void of the vessel is a "holey space" or as argued by Aldo Rossi who thinks of architecture as a vessel of the creation of meaning, it is important to understand that the void is the container, where "something is about to happen."²⁵

2.4.3 Relationship Between Figure and Ground

It is possible to arrange a figure in a contrasting field so that the background becomes the figure to our perception. The result can be an ambiguity, often called "figure/ground ambiguity." The figure appears to be black on a white field which is the ground. We can also make the white areas appear to be figures on a black field or background. If we carefully

²³ Heidegger, 172-74.

²⁴ Jennifer Bloomer, Architecture and the Text: The (S) Crypts of Joyce and Piranesi (New Haven: Yale UP, 1993) 186.

²⁵ Aldo Rossi, A Scientific Autobiography trans. Lawrence Venuti. (Cambridge: MIT Press, 1981) 3.

adjust the shapes and areas of black and white, we can create an image wherein it is not clear which is figure and which is ground, that is, whether white is on black or vice-versa. This is what is meant by *figure-ground ambiguity*.

2.4.3.1 Psychology of the Figure-Ground Effect

The *parti* and field geometry of any whole form determines the overall recognizable configuration known as the Gestalt, named for a group of psychologists who have tackled the problem of finding the origins of meaning in the visual arts. The "Gestalt" psychologists' major interest has been in the principles of perceptual organization, the study of the process of making wholes out of parts. The underlying point of view of Gestalt theory was defined by von Ehrenfels, who pointed out that "if each of twelve observers listened to one of the twelve tones of a melody, the sum of their experience would not correspond to what would be perceived if some one listened to the whole melody."²⁶

Gestalt psychology has contributed valuable research and experimentation in the area of perception, collecting data, and searching for the significance of visual patterns, as well as finding out how the human organism sees and organizes visual input and articulates visual output. Together, the physical and the psychological are relative and not absolute. Much of what we know about the interaction and effect of human perception on visual meaning is drawn from the research and experimentation in Gestalt psychology. Its theoretical base is the belief that an approach to understanding that the system of an object as a whole is made up of interacting parts, which can be isolated and viewed as completely independent and then reassembled into the whole. No one unit of the system can be changed without modifying the whole. You can analyze any visual work from many points of view; one of the most revealing is to break it down into its constituent elements to better understand the whole. This process can provide deep insights into the nature of any visual medium.

²⁶ Donis A. Dondis, *A Primer of a Visual Literacy* (Cambridge: The MIT Press, 1974) 15.

According to Gestalt, breaking down the object into its constituent elements for better understanding the whole deals with the most fundamental graphic contrasts that exist between *figure* and *ground* (which is the most fascinating phenomenon). Gestalt research has determined that the figure-and-ground effect depends on the following conditions: 1) whether the enclosed surface tends to be figure, the enclosing, ground; 2) whether inner articulation, such as the dotted texture of the circle, makes for "figure" (An empty circle would show the effect less clearly); and 3) whether convexity makes for figure, concavity for ground. Thus far psychologists have studied the phenomenon of figure and ground only in plan patterns, but their results can be applied to the third dimension. However, there are important differences. While in a two-dimensional drawing the contour which divides two areas can be observed, the common boundary remains hidden when two opaque volumes meet in three-dimensional space. An exception occurs when one of the two volumes is transparent, as in the case of enveloping an object. It seems proper to say that if a piece of sculpture is surrounded by empty space, then it can be seen on a positive "ground."

2.4.3.2 The Yin -Yang Symbol

Our visual perception recognizes certain wholes even when only part of the form is present; however, sometimes some figures elude a single clear interpretation of the Gestalt, for example, the Yin-Yang symbol (See Fig. 15 below).



Fig. 15: The Yin-Yang symbol.
(Source: Fritjof Capra. The Tao of Physics. p. 107)

The ancient Chinese symbol T'ai-chu Tu, or the "Diagram of the Supreme Ultimate," permeates the spirit of the Eastern world view. The terms Yin and Yang represent the dark

and the light or any pair of opposites. Or as Capra explains in *The Tao of Physics*: "The symbol of yin and yang is a symmetric arrangement of the dark yin and the light yang, but the symmetry is not static. It is a rational symmetry suggesting very forcefully, a continuous cyclic movement."²⁷

The yin and the yang also suggest the coexistence of opposites, that any phenomenon in the world co-exists with its opposite. The more something tends towards its extreme, the more its opposite also tends towards its extreme. According to Capra, "The *yang* returns cyclically to its beginning; the *yin* attains its maximum and gives place to the *yang*."²⁸ Although they become parts of the whole complex, they differ in their presentations. In other words, what dominates the eye in visual experience would be considered the positive elements while those more passively displayed would be considered the negative. Positive and negative seeing can sometimes fool the eye. This trick of the eye has always been of great interest to Gestaltists. The Chinese symbol of yin and yang, shown in Fig. 15, is a perfect example of simultaneous contrast and complementary design. The yin and yang is dynamic in both its simplicity and complexity; constantly moving, its negative-positive visual state is never resolved. It is as close to a balance of individual elements brought together into a cohesive whole as one can find.

The Japanese view all concepts including architecture as ever-changing, ephemeral phenomena. Architecture resembles the human body in the way it is subject to changes and the forces of nature. Like the human body architecture also decays and ages with time. The notion of the tendency of one to move toward another and vice versa, that of life to move toward death and death toward life, the light yang toward dark yin and yin toward yang, suggests a cycle of continuous change. Or as Inoue Mitsuo explains in *Space in Japanese Architecture*, "The river never stops flowing, and the water is never the same. The bubbles

²⁷ Fritjof Capra, *The Tao of Physics* (Berkeley: Shambhala. 1975) 107.

²⁸ Capra, 107.

that the float in the pools, now disappearing, now coming into being, never last. So it is in the world with people and their dwellings...People die in the morning and are born in the evening, not knowing where they come from, nor where they are going, like bubbles on the water." ²⁹

2.4.3.3 Figure-Ground Ambiguity in Moore's Sculptures

When one looks at one of Moore's sculptural pieces from a formal point of view, one sees nothing but a pure object. The figure-ground relationship in his sculpture is such that solid and void have equal importance and that was one of his contributions to sculpture. He no longer took the sculpture as merely an isolated object. Instead, he created objects in which the continuing pattern, informed by the field of the relationship of solid and void in space, was the subject of his work, and in his own way, he was weaving the space outside the object into the object itself.

When the figure-ground ambiguity and unity was generated, he felt the idea of unity as a higher order of solid and void could be achieved and experienced through his work. However, in Moore's sculptural body, the figure-ground hierarchy does not give us the impression of an empty gap, a hole torn in the pictorial tissue. The relationship between figure and ground in his work often reaches across a void, and the length of the leap counts compositionally. Mainly through the use of concave forms, many of Moore's figures, especially his "Reclining Figure" sculptures capture portions of space and make them parts of themselves. The figures do have their inner articulation and are enclosed by the surrounding volume of air. On the other hand, they do not consist entirely of bulging convexities, which would invade space aggressively, but reserve an important role for dells, caves, and holes.

The aforementioned examples have shown that the figure-ground relationship is not simply a static distribution of spatial values but a dynamic play of forces. In Moore's "Reclining Figure" sculptures, this relationship, in which both the statues and the surrounding space

²⁹ Inoue Mitsuo, Space in Japanese Architecture, trans. Hiroshi Watanabe (New York: Wearherhill, 1985) 171.

assume figure as well as ground functions, makes for a dramatic interchange of forces between the two. Moore's tendency is to avoid isolation and delimitation and to unite parts in an exchange of forces, not only within the figure, but also as applied to the relationship between the figure and the environment. Moore's great gift and contribution to sculpture was showing that sculptural forms can unify, enlarge, and enliven the space in and around the objects. He was absolutely aware of the importance in shaping the void just as much as in shaping of the mass of the object. Perhaps Moore's sculptures prove to us that, more than anything else, the void is a material substance (See my explanation for this concept on page 7).

2.5 SCANNING THE "RECLINING FIGURE" SCULPTURES

The very first step of my study (after looking at the sculptures) was based on scanned images of photographs of Moore's "Reclining Figures." This section explains the basic principles that are part of the scanning process used to conduct the photographic transformations that inform my three- dimensional interpretations of Moore's sculptures in clay.

2.5.1 Computer Scanning

This study utilizes a computer graphic scanning program called Adobe Photoshop. Its value lies in how it can be used to interpret Moore's abstract visual message, and how that interpretation can be used in an exploration of architectural relationships within the city.

I used this computer scanning program because it allowed me to focus more clearly on certain aspects of Moore's sculptures that provide a conceptual basis for my analysis of the morphology of the city. The program enabled me to see more clearly the relationships between solid and void in Moore's sculptures by transforming images of solid and void into black and white (See Fig. 16 on page 42) as an example of a transformed image.

The process of scanning photographs of Moore's sculptures in the computer emphasizes positive and negative areas and compositional dominance factors in the sculpture, automatically giving the positive and negative relative importance compositionally according to a scale of "threshold," a term used to describe the density of black and white surfaces. Scanning with the computer demonstrates easily the location of these areas of positive and negative because everything is reduced to black-and-white, or shades of gray.

2.5.2 The Scanned Images

The scanned images are continuous-tone images, such as photographic prints and transparencies, that have been converted into digital images that can be manipulated on a computer. Once I scanned an image, I *rasterized* it--that is, I converted it to an image

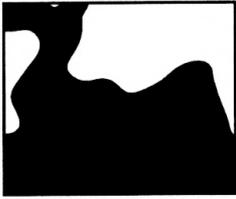


Fig. 16a:
Transformation no. 1

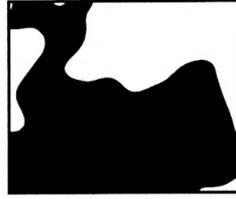


Fig. 16b:
Transformation no. 2



Fig. 16c:
Transformation no. 3

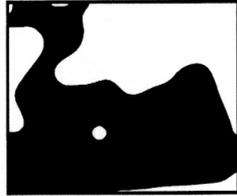


Fig. 16d:
Transformation no. 4

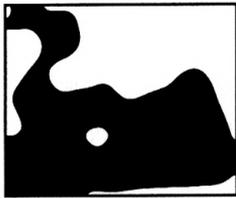


Fig. 16e:
Transformation no. 5

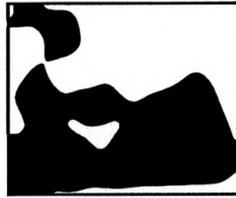


Fig. 16f:
Transformation no. 6

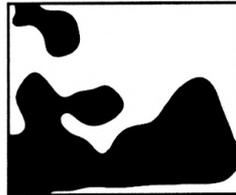


Fig. 16g:
Transformation no. 7

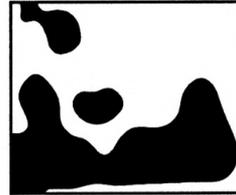


Fig. 16h:
Transformation no. 8

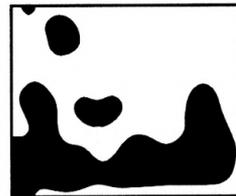


Fig. 16i:
Transformation no. 9

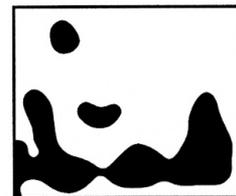


Fig. 16j:
Transformation no.
10

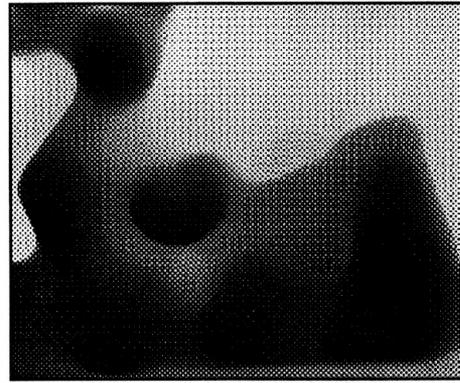


Fig. 16: Computer scanning and photographic transformation of Moore's "Reclining Figure" 1935-36.

described in digital data (pixels). After scanning the image, I was able to make corrections that included adjusting the brightness and contrast, and the saturation of the image. The variations commands in this program enabled me to adjust the color balance, brightness and contrast, and saturation in the image. To adjust the overall contrast in the image, first I set the *white point* and *black point* in the image--that is, I assigned a value to the lightest and darkest points. This redistributed the gray value of the intermediate pixels and gave me a full range of gray values. Often, scanning compresses the range of gray in an image, resulting in an image that appears flat and without contrast. Setting the white point and the black point spreads the spectrum of gray throughout the image, and improving the dynamic range of the image and its quality when printed.

Before continuing to edit the image, I trimmed, or *cropped*, unneeded areas of the image. Cropping the image not only decreased the file size, thus improving performance, but also helped in selecting fragments of the image. The cropping tool let me zoom in on the image and adjust the cropping border precisely before trimming the image. Though the scanning process may cause an image to appear slightly out of focus or "soft," the program allowed me to compensate for this softening by using one of the Adobe Photoshop sharpening filters.

My images were printed in black and white, so I used Grayscale, for displaying black and white (See Fig. 17 below). Grayscale uses up to 256 shades of gray to represent an image. In Adobe Photoshop, every pixel of its Grayscale image has a brightness value ranging from 0 (black) to 255 (white). The values in between correspond to the points on the Grayscale spectrum.

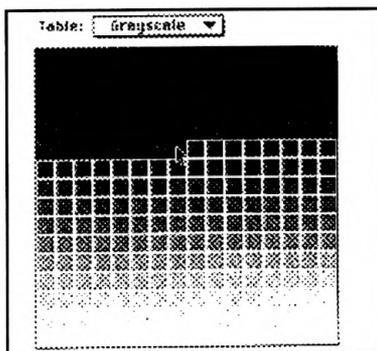


Fig. 17: Grayscale table in the Adobe Photoshop.
(Source: Adobe Photoshop User Guide, p. 106)

Adobe Photoshop also assigns an intensity value to each pixel ranging from 0 (black) to 255 (white) for each of the RGB components. For example, a bright red color might have an R value of 246, a G value of 20, and a B value of 50. In RGB color, various brightness values of red, green, and blue light combine to form the colors on the screen. The range of colors in the visible spectrum is represented by controlling the intensities of the individual RGB components. When the values of all the components are equal, the result is a shade of gray. When the value of all three components is 255, the result is pure white; when all components have a value of 0, the result is pure black.

Depending on the number of bits of information saved when the image was scanned, a Grayscale image contains up to 256 levels of gray. Gray levels can range from 0 (black) to 255 (white). There are five methods to choose from when converting a gray-scale image to a bitmapped image. The options determine the quality of the new bitmapped image, ranging from a high-contrast, black-and-white image to a textured or half-tone screen for output.

The "posterize" command enabled me to specify the number of gray levels (or brightness values) for an image and then map pixels to the level that were the closest match to the values of the original image. This was useful for creating special effects, such as large, flat areas in a photograph. The effects of this command were most evident when I reduced the number of gray levels in a Grayscale image.

The equalize command redistributed the brightness values of the pixels in an image so that they more evenly represented the entire range of brightness levels. With this command, Adobe Photoshop enabled me to find the brightest and darkest values in the image, and average all the brightness values so that the darkest value represented black (or as close to it as possible) and the brightest value represented white. This usually increased the contrast and balance in an image, since it redistributed pixels from the middle brightness levels into the high and low brightness levels. This command allowed to make "before-and-after" brightness comparisons.

2.5.3 What the Computer Scanning Revealed

The scanned image encourages seeing positive and negative, or solid and void in the image sequentially, and transforming them to black and white (See Fig. 16 on page 42). What I saw in the scanned images of Moore's work had a structural quality. I tried to make a sufficient number of iterations until I was able to achieve a balance between the black and white intervals. This relationship in the visual message had a strong connection to the sequence of seeing, or in this case, the scanning and absorbing of information. It was easy for me to visualize how tension and stress are generated to absorb the visual attention of the viewer. The significance of positive and negative in the context of Moore's work means merely that there are separate, yet unified, elements in all visual events, which are interdependent.

Understanding these aspects of visual perception has helped me articulate my understanding of Moore's sculptures and synthesize the guidelines to begin achieving a visual understanding of the specific relationship between the solid and void as transformed into black and white. I used this understanding to support my work in clay in the following stage. Scanning Moore's pieces and creating three-dimensional clay interpretations in this way enabled me to generate ground rules to guide my study of the city of Siena as a physical object having solids and voids as well.

2.6 INTERPRETING THE PHOTOGRAPHIC TRANSFORMATIONS IN CLAY

The next step of my study was based on the information that I extracted from the first. The computer scanned image of the photographic transformation made the interrelationship between solid and void (outside and inside) in Moore's sculpture clearer. It reduced and simplified those relationships (the information I needed to guide my next phase) almost to black and white (See Fig. 18 on page 47). At this point I had generated fragments of Moore's scanned images as a study pieces, as opposed to dealing with the whole piece.

In this phase, I transformed the two-dimensional images of Moore's sculptures into three-dimensional clay interpretations. The purpose here was not to reproduce Moore's sculptures but to produce a matrix for understanding the three-dimensional quality of a physical object. I transformed the computer scanned images of Moore's sculptures into an extended space exhibiting a range of relationships between solids and voids, including the passage in the form in which void is figure and solid is field.

Some of my clay pieces represent series of transformations in which I manipulated the forms to produce new configurations. I used the transformed images of Moore's work as figure/ground plans and starting points for my interpretation. Then I went through different iterations in each, changing the figure/ground relationship (See Fig. 19 on page 48). Each iteration represented a different gray threshold on a gray scale, from a continuum of white to black. I changed the hierarchy and the ranking of the elements such as solids and voids and their spatial relationships. A hierarchy of forms, sizes, and shapes of the solid and void helped me to determine the "right" organization in which the form revealed primary and secondary transformations. For some of Moore's transformed images, I created a series of three-dimensional interpretations showing the changing relationship between the solid and void (black and white) and figure and ground (See Figs. 20 and 21 on page 49). When the components changed not just one part (figure or ground, solid or void) was altered, but the character of the whole object was *transformed*.



Fig. 18a: Transformation no.



Fig. 18b: Transformation no.

2



Fig. 18c: Transformation no. 3

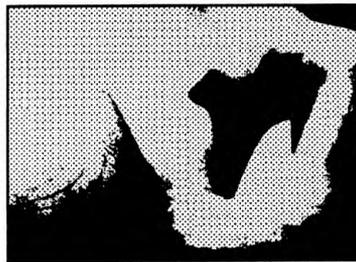


Fig. 18d: Transformation no. 4



Fig. 18e: Transformation no. 5

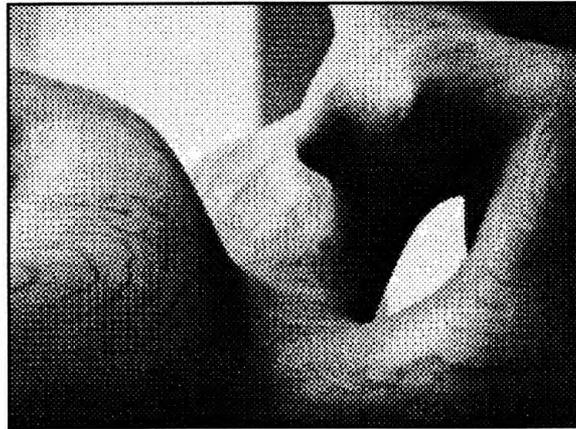


Fig. 18: Computer scanning and photographic transformation of a *fragment* from Moore's "Reclining Figure" 1935-36.

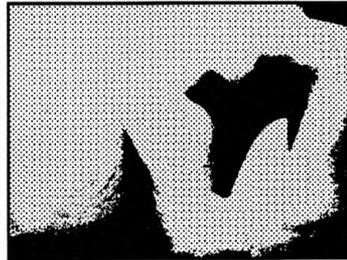


Fig. 18f: Transformation no. 6



Fig. 18g: Transformation no.

7

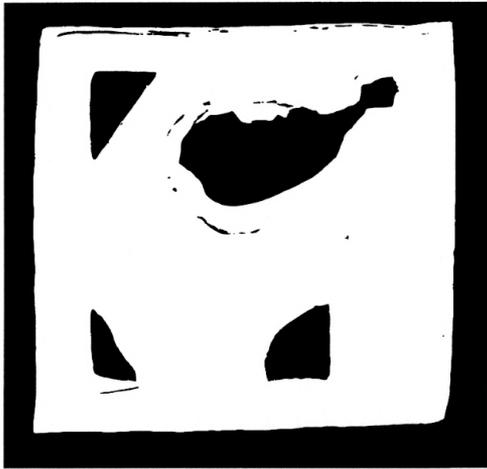


Fig. 19: 3D interpretation of figure/ground relationship in a transformed image of Moore's work.



Fig. 19a: First iteration in clay of Moore's transformed image.



Fig. 19b: Final iteration in clay of Moore's transformed image.



Fig. 20: Front view of transformation no. 1 in clay of Moore's fragment.



Fig. 20a: Back view of transformation no. 1 in clay of Moore's fragment.



Fig. 21: Front view of transformation no. 2 in clay of Moore's fragment.

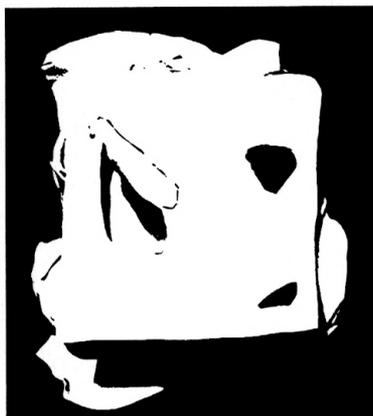


Fig. 21a: Back view of transformation no. 2 in clay of Moore's fragment.

The method I used to make my sculptural interpretations in clay can be called *cutting away* (See Figs. 22 and 23 below). Once I *cut away* the body of a physical object, the outside of it was no longer important for understanding its physical qualities. Cutting away was important in order to reveal one piece of the body to be able to look at the other part of it. In my work, the solid and void have a reciprocal relationship: the hole is made of what is implied and what is not at the same time. What I was trying to show was that *cutting away* as a process of investigation is not simply negative in the sense of wearing away information. Through the process of *cutting away*, I simply created holes as physical objects by themselves, according to my understanding of Moore's work. Other pieces of my work at this point were created by using the frame of the scanned image as a point of reference transformed into clay as a thin slab to move in both direction (front and back) while constructing the three dimensional interpretation. This way I used the technique of adding and subtracting to explore the three-dimensional entity of Moore's interpretations.



Fig. 22: 3-D interpretation in clay of Moore's work, showing the method of *cutting away*.



Fig. 23: 3-D interpretation in clay of Moore's work, showing the method of *cutting away*--another view.

In my sculptures I tried to make negative space visible and compare that space deliberately to the inner part of the body, the more profound part of the body that we don't see because we see only the presence of an object. We find that the inner part of the body in Moore's sculptures to be the void. I was trying to communicate visually at this point in my investigation that nothing is in a sense something. To communicate that which is absence has presence that I tried to understand. It is that absence of something which is a pure form that becomes the positive in my interpretations.

Observing my three-dimensional interpretations in clay, one can focus only on the voids in the physical object, at times forgetting the subject (the clay) that has been removed. This gives the pieces the feeling of being endless, that the inside and outside are interchangeable, making it hard to differentiate between the two. Also, in my sculptures fragments sometimes can be more telling than totalities.

2.6.1 Ground Rules for 3D Interpretation

What I was doing in my 3D interpretation was in a way what Moore did to the human body. He took the human body and through the process of abstraction created sculptures that dealt with the idea of a human body in a more conceptual way. In my case, I took Moore's sculpture which was as concrete as the physicality of the human body--the city--and I created a workable, physical object that allowed me to represent and extract something that I understood to be the relationship between solid and void, which I was able then to manipulate.

From Moore I learned how one designs beyond the rules, from the inside out. My task was to discover the inevitable boundaries and constraints inherent in a physical object (See Fig. 24a-d on page 52). Simple contrasts like black and white as well as solid and void, inside and outside, are all important carriers of the graphic transformed image and my design intention. Moore made his figure look the way our bodies feel from the inside. So my intention in the clay interpretation was to create three-dimensional objects that dealt with the internal and



Fig. 24a: Interpretation no. 1 in clay of Moore's photographic transformation.

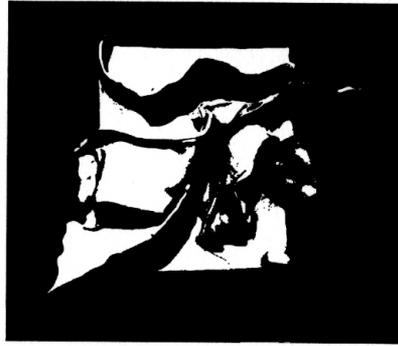


Fig. 24b: Interpretation no. 2 in clay of Moore's photographic transformation.



Fig. 24c: Interpretation no. 3 in clay of Moore's photographic transformation.



Fig. 24d: Interpretation no. 4 in clay of Moore's photographic transformation.

external forces that existed in Moore's sculptures, but also to find a way of constructing the pieces from inside out or from within. I tried visually to express those opposing forces created by solid and void, inside and outside, not only to energize the figural object itself, but perhaps to suggest that the space in and around the object is an enlivened space.

When building Moore's interpretation I tried to keep in mind that the frame is a point of departure or a point of reference from which I added and subtracted the clay.

2.6.2 What 3D Interpretation Revealed

By using the technique of cutting away, adding and subtracting the 3D interpretation of Moore's sculptures, I was able to discover what the hole was all about. I found the void capable of holding things together. Cutting away the body of the sculpture revealed that the inside of the body yields a different understanding of the nature of its physicality. I found that creating the holes in any bodily substance made it immediately more three dimensional, connecting one side of the frame immediately to its other side. My sculptural interpretations of Moore's works allowed me to analyze the nature of the void and apply that understanding to the city.

Once the image was scanned, I was able to go through several iterations. From the range of Moore's scanned images, I extracted the particular information about the solid and void, and I generated the selection of scanned images and photographic transformation to generate the next stage. When analyzing the composition of the two-dimensional black-and-white images, I observed the presence of external (outside) and internal (inside) forces operating within the composition. The internal forces corresponded to the voids in Moore's sculptures and the external forces to the solids.

2.7 CONCLUSIONS FROM STUDYING MOORE

I concluded that Moore created a dramatic interplay of external and internal forces in his sculptures energized the space around them. The discussion that follows is an explanation of what the terms *external force* and *internal force* denote in the scanned image.

2.7.1 External Forces (outside-solid)

Looking at Moore's "Reclining Figure" as a sculptural object, one observes that the visual field has no defined boundaries. One does not observe the sculptural figure in its totality. Instead images of fragments of the sculpture are placed together to create its whole with each image using a void as its focal point. One can only make a spatial interpretation of what is seen--its location and extension--based upon one's own spatial position relative to the void. One measures and organizes--up, down, left, right--in a physical system in which each void orients its own coordinate system.

The actual visual elements of the void are the focal points of this field; they are the concentrated energy, and thus each void can encompass a different radius of the object-surface. These fields extend into every dimension and each field has its own unique form.

2.7.2 Internal Forces (inside-void)

Internal forces act to restore balance after a disturbance from the outside. Exposed to a visual field, an observer organizes the field at once into two opposing elements: a figure against a background. One speaks of white with implied reference to black, gray, or other colors. To convey the meaning of "yes," one implies a latent understanding of "no." Every image is based upon this dynamic dualism, the unity of opposites. Certain impulses are tied together in a stable visual whole, while other impulses are left in their unorganized fluid state and serve only as a background and are perceived as intervals. This organization of figures and backgrounds is repeated progressively until the whole visual field is perceived as a formed, ordered unity.

2.7.3 Figure and Ground Relationship

Lao Tse said, "A vessel is useful only through its emptiness. It is the space opened in a wall that serves as a window. Thus it is the nonexistent in things which makes them serviceable."

Moore in his sculptures used the counterpart of hollowed spaces to represent the struggle to achieve an essence of the whole that transcends and reaches for the depths of the void, which are the depths of the meaning. Moore respects the white areas/intervals, or blank areas/intervals, giving them as much as consideration as the figure itself. However, in the photographic transformation of Moore's work, the image's surface is divided into unequal intervals (of black and white) which, through their spatial relationship, draw the eye of the observer to the relationships between solids and voids. We initially respond to the surfaces by separating them and distancing them from each other, but as they become more equal they become more ambiguous. This process allowed me to explain the search for balance between one and the other (black and white) in the transformed image, and thus create the unity by the greatest possible variation of surface.

By interchanging opposing values and using the analogy of the opposites *inside* and *out*, and *black* and *white*, I was able to establish a common rhythm and unify the whole composition. By interpenetration of different elements like solid and void, by interlocking positive and negative, black and white, I produced a reciprocal action. But at the same time, by maximizing the contrast of each individual unit, I achieved a greater intensity.

One aspect of the figure/ground relationship in my clay interpretation has to do with the horizontal plan to which Henry Moore's sculptures specifically belong. The idea of a very specific figure/ground relationship in Moore's work, however, has to do with the energy system that exists in the void. That energy succeeds in freeing the object from being static and stable and in a way freeing it from gravitation. By cutting away, I was able to understand that the essence of any 3D interpretation of Moore's work resides in the quality of a jar, of being able to hold and contain meaning. Even though precisely articulated, the units (parts of the body) of the figural body in Moore's sculpture flow into each other. The parts of the figure

(of the sculpture) merge and stream back into each other, permitting the circulation of energy. Moore's figures stress the interdependence of the solid and the void and their mutual influence, the indivisible unity of the whole and the equalization of the parts. The concavities and enclosing equal the *ground*, and the convexities equal the *figure* (See Fig. 25 below).

I further concluded from my 3D interpretation of Moore's work, that once you cut a section through the piece of the body, the frame is no longer relevant and the void becomes the object (as a hole) in itself. The property of the figure itself as in Moore's work is the property of the holes that have the quality of holding the power and energy that produces the meaning of a sculpture, engendering it with *mystery*.



Fig. 25: Figure-ground relationship in a transformed image of Moore's sculpture.

(Source: Henry Moore. Sculpture and Drawings, p. 256)

CHAPTER 3.0 PHASE TWO: THE CITY OF SIENA

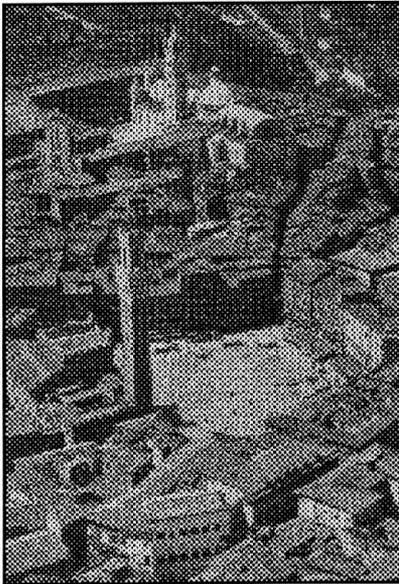


Fig. 26: Aerial view of fragment from the city of Siena. (Source: Benevelo Leonardo. The History of the City, p. 82)

I chose Siena for a case study because in its urban structure and morphology, I found the most clarity of the two elements I wanted to study, and also because of the representation of the clear relationship between what is there to be seen and what is not. The certain kind of structural qualities of the solid and void are very clear in Siena, (See Fig. 26 above) and those relationships of addition and subtraction of solids and voids can be observed in a tangible way that allows further study and an understanding of the depth of meaning that resides in the city's physical structure. Accepting the structure of the solid and void that make up the physical sense of Moore's sculpture, I found the medieval Italian hill towns to be perfect examples of physical objects that exemplify the idea of the body as a corporeal substance. Siena has certain qualities that exist in the interchanging relationship between its void and solid parts as much as between its seen and unseen parts. Accepting the notion of void, formal space, and body, I found the Italian medieval hill towns to be an examples of organisms that exemplify the idea of an existing body, proving the notion that "the city is a collective body."³⁰

³⁰ J. A. Clapp, The City: A Dictionary of Quotable Thought on Cities and Urban Life (New Brunswick, NJ: Center for Urban Policy Research, 1984) 14.

The physical object that Siena represents is an extremely complex entity. The city is also radically different in its complexity from the singularity of Moore's sculptures. The reality that Siena represents is based on the physicality of the form which is present in its buildings. With respect to the form, and derived from the study of Moore's sculptures, I attempted to expand the understanding of the city as a physical object. I examined the nature of the city using the idea of the seen and unseen in our reality.

Traditionally, we examine the reality of the city using the idea of its form as the capacity to represent ideas and engender meaning. This chapter limits the representational parts of the city to the forms which are always the positive while I was looking for the meaning in the idea of negatives (See Fig. 27 below).



Fig. 27:
Scanned image
of fragment of Siena.
(Source: Lotus
International no. 61, p.
44)

The starting points are the aerial photos of Siena in which the form is reduced to its two-dimensional appearance. From there I started to construct the idea of its third dimension. In

the city I believed that the void actually as a component of the form that produces its meaning that meaning that can't be understood without considering the void. The meaning of form in all its physical aspects is the becoming of the void. In that sense, the void is the other side of the form, that which gives its third dimension--that which is missing. Form in that sense loses its capacity to retain meaning without the void. I would like to think about of form as the corporeality of the city while the void is the metaphysical aspect of the city as a physical object. Perhaps the quality of the void can generate a more meaningful relationship based on the comparative relationship between solid and void to provide an alternative way of looking at the reality of the city of Siena.

In that absence of a singular relationship between the positive and the negative, perhaps the only valid way to look at an object is by looking from within, which requires the simultaneous interchangeability between the presence of the form and non-presence of the void. This part of my study addresses the power of absence in the city as a concept that does not depend only on a conscious aesthetic intention. In his essay "The Presence of Absence: Places by Extraction," Marc Treib suggests that the representation of what is absent is as important as what is present. In this case the present is the solid mass as opposed to the negative space. According to Treib, "One can conceive of absence as omission or one can think of it as abstraction."³¹ The notion of the void in the city is exactly about this omission and abstraction. I specifically apply this understanding of Moore's conceptual structure of bodily substance to the city of Siena.

³¹ Marc Treib, "The Presence of Absence: Places by Extraction." *Places* 4.3 (1984): 10.

3.1 PRINCIPLES DERIVED FROM MOORE USED TO STUDY THE CITY

My three-dimensional interpretations of the city examine the following: 1) the *figure* and *ground* composition in the form of *solid* and *void*; 2) the interrelationship between buildings as *continuous masses* and the surrounding spaces around the buildings as *enclosed voids* and; 3) the *inside* and *outside* relationship in the city.

3.1.1 Relationship Between *Figure* and *Ground*

Figure and ground exist not only in a plan but also in three dimensions. Mainly through concave forms, many of Moore's figures capture portions of space and make them part of themselves. Moore made holes which were filled with tangible air. He created a dramatic interplay of external and internal forces in his compositions that energized the space in and around them. The reciprocal relationship in which both the statue and the surrounding space assume figure as well as ground makes a dramatic interchange of forces between the two. In the case of Siena, however, one can say that the city was generated by individual semantic formation, unlike modern cities which are fragmented, and the fragments exist in either total isolation from each other or are only partially integrated. On the other hand, the city of Siena is a living organism. In it, the past, present, and near future are mixed. Connections among its own parts are very much present, and its composition is determent by dynamic tension between its parts. The relationships among consciousness, experience, and space cannot be clarified analytically.

I returned to the question of the city as a physical object which may be seen as "figures" surrounded by a "ground" (void), and I explored the nature of the void as figure and the nature of the solid as ground. I recognized that figure and ground are conceptually reversible, and so it followed that their roles were interrelated and interdependent. The meaning of the space interval (void) can also be understood in the city. Recognition of the integration of the actual "object" (building) and the "envelope" surrounding it, in which figure and ground are considered in a unity of mutual interdependence, is achieved through the interconnection of

figure and ground.

In my sculptures, the ambivalence of solid and void is obvious, and the tension created by the equality of the visual "weight" poses some interesting questions. As a tool of abstraction, the solid-void relationship and figure-ground relationship provide us with the necessary basic elements required for understanding the urban structure of a physical substance--in this case the city of Siena.

Figures are the visual forms, and the voids are the nonformal aspects which give privileged status to meaning and perception. One built (solid), the other imagined (void), but no less real, they together construct the symbolic views through which the invisible character of the city takes form. Using a portion of the city of Siena, I attempted to show that invisible spaces *in between* the buildings--what I call voids or negative spaces--are not isolated and disconnected morphological anomalies but act as integral parts of other more visible spatial and formal structures that together create the city as a physical object.

In the city map of Siena I found it possible to see any well-marked part of a visual field as the figure, leaving the rest as the ground. If the total field consisted of a black portion and a white portion meeting in a contour, either the black or the white portion could be seen as figure, the other being the ground. If either the black or the white portion was entirely enclosed by the other, the enclosed portion was more easily seen as the figure, but with practice, the enclosing portion could also be seen. If the contour separating the two portions was approximately vertical without enclosing either part of the field, the figure and ground could be easily reversed. My work helps illustrate the observations in the following passage in Ittelson's *Visual Space Perception*: "The phenomenal differences between figure and ground are classified by Rubin as follows: 1) the figure has form, while the ground is relatively formless, or if the ground has form it is due to some other figuration upon it and not to the contour separating it from the figure; 2) the ground seems to extend continuously behind the figure and not to be interrupted by the figure; 3) thus the figure has some of the character of a *thing*,

whereas the ground appears like unformed *material*; 4) the figure tends to appear in front, the ground behind; 5) the figure is more impressive, better remembered, and more apt to suggest meaning."³²

The idea of *figure-ground* relations in the city of Siena is certainly a much more complex one than is the overlay in Moore's work. At first glance--and even at second glance--the configuration of the ground floor plans of the study area in Siena suggests pure anarchy or pure complexity. Blurring boundaries and avoiding organization, beginning with the differentiation of inside and outside, inner skin and outer skin, which join in complex cooperation to shape the morphology of the physicality of the city, without ever losing sight of the whole but always complementing each other, we may finally see we live in that labyrinth of all labyrinths: our own body.

3.1.2 Relationship Between *Solid* and *Void*

For certain purposes the solid assists the legibility of the adjacent void. It seems to me that the general usefulness of the solid comes by its ability, as a solid, to be engaged by adjacent voids. In the city of Siena such reciprocity is possible and intended. In its plan configuration, it is possible to notice the equality of its two major faces of positive figure and passive ground, and their interdependent relationships. The void is a way of imposing unity on so heterogenous an object as the city of Siena.

Therefore, in order to generate a deeper understanding of the complexity of the city as a physical object, my research made use of the notion of the city as a collective of solids and voids, for understanding the relationship between the parts in the built environment that generate the city as a whole.

I found that architecture of the city of Siena deals with the relationship of masses, or more

³² William H. Ittelson, Visual Space Perception (New York: Springer Publishing Company, 1960) 93.

precisely the abstract relationship of masses. However, the crisp boundaries are absent between the buildings as physical objects in Siena and the negative spaces surrounding them. The buildings in Siena do not sharply delineate a boundary between space and mass, or void and solid, because the boundary is an interactive tensile interface. In architecture we traditionally think of the external envelope of the building as the definite boundary between the mass of an object and the space around and outside of it. However, understanding this clear relationship between the continuous mass and the enclosed void, which makes the city a physical object, provides an important insight into its corporeal nature.

The casual mixture of forms and figures is typical in the city of Siena. The representation of the medieval fabric is, in fact, only one of the elements that make up this project appealing to the character of continuity which is far more complex and intricate. In a sense, the configuration of the city of Siena, with its history and construction, occurs through the mingling of fragments of its architecture (the built form) and its voids (the unbuilt forms). One built, the other imagined but no less real, they construct two symbolic views through which the invisible character of the city takes form.

3.1.2.1 An Added Dimension: *Body and Soul*

Webster's Dictionary defines *body* as: a unit formed of number of persons or things; a collective whole; and *body corporate* as: the total organized substance of an animal or plant, whether living or dead; the physical organism.

The Romans saw the soul as a function of the brain located in the head, and therefore, in their conception of the human body, the head is governed by the soul. In the idea of the city as a physical object, the relationships are comprised of two components: the *visible* and *invisible* parts of the human body. These two entities are physically separate, but together they comprise the unity of the human body.

Webster Dictionary defines *incorporation* as 1) to make into a body, made one in a body; 2)

formed into or associated as part of corporation; 3) to unite in or as one body; and *corporeal* as 1) bodily; as man's corporeal frame.

From these definitions the following equations emerge: *body* equals physical, and soul equals metaphysical. Thus this discourse concerns a rapport between "in" and "out," as with a person having a body and a soul. It is about the difference between what something looks like and what it really is. Based on an understanding of these definitions, I use my understanding of the relationships suggested by the metaphor of the body, profoundly influenced by the experience I had of the medieval city, to express how parts fit together to form a whole in the city. This same concept of a direct relationship between part and whole is poetically expressed by Paul Valery in his article, "Some Simple Reflections on the Body." According to his discussion of "the problem of the three bodies," the word "body" responds to very different needs of expression. The first body he refers to is what we mean by *my body* when we speak of it to others as a thing that belongs to us. However, this body, according to Valery, "is formless: all we know of it by sight is the few mobile parts...." He goes on to say he has "no idea of the spatial relations between "[his] 'forehead' and [his] 'knee' and [his] 'back'...."³³ The second body is the one which others see, the one which confronts us in the mirror or in portraits. It is the body which has the form and which lovers see or want to see. In this case our knowledge of our *second body* goes a little further than the view of a surface, as in the case of *my body*. The *third body* has unity only in our thought because "to know it is to have reduced it to parts and pieces."³⁴ The *fourth body* is what Valery calls the *real body*, which he also calls the *imaginary body*. The first body offers nothing but moments, the second a few visions, the third a mass of figures, and the fourth a kind of incarnation.

As for the analogy between the human body and the physical body of the city, this study mainly deals with the *imaginary body* and the *real body*, the one which consists of solids and

³³ Paul Valery, "Some Simple Reflection on the Body," Fragments for a History of the Human Body, ed. Michel Feher, Zone 4 (New York: Urzone, 1989) 399.

³⁴ Valery, 400.

voids as well as visible and invisible entities forming together the unitary reality of the city. I use Valery's ideas to reinforce my understanding of the idea of a physical body--a concept of seeing the city as man's corporeal frame made as one body, or made one in body. By talking about the city as an entity made "as one being," I mean that its physical and metaphysical components are integrated into a whole.

The idea of incarnation, of the soul taking a body, is expressed as if the body were a vessel into which the soul enters. This concept of the soul as an entity is also connected to the idea of the *outside* and *inside* and the way the *body* and *soul* or positive and negative are interchanged and made relative. Effecting the boundaries between inside and outside is all part of the unitary reality in Moore's sculptures as well as in Siena, and as a result, the body of each of these two physical objects is experienced as something external, hollow, with a vessel-like qualities.

3.1.3 Relationship Between *Inside* and *Outside*

The problem I investigated emerged from the idea of body as something *hollow*. The "soul" comes into the body from the outside and dwells in it as if it were a shell. An analogous idea is that the body is *a vessel* into which the soul enters and exists independently of the body; therefore, the boundary between the "inside" and "outside" is not distinct. The voids in Siena break down the masses of the city. Surface as a closed, terminal structure and the skin as a boundary of the personality cease to exist. Inside and outside become interchangeable, just like a breast in Moore's sculpture can be represented as a vessel opening into the body cavity. In Siena the voids are the inside cavity of the body, and understanding the quality of the voids in the city is almost like taking the body apart, as if to find out what is inside it. The physical presence of the city is considered to be the body of the city, whereas the cavity of the body is the soul represented in the void. The inside /cavity of the physical body of the city is the mirror of the soul. The inside (void) and the soul are less visible but more important. The inside cavity also evokes the impressions of a mysterious spirit commensurate with a feeling of surprise. In the void we can find not only the many different ways of looking at the body

of the city, but also the possibilities of reading into its meaning.

The principle of container and contained body and soul inform not only Moore's pieces but the city as well. In the "Reclining Figure" sculptures, the container, as pure space, has been almost wholly resolved into a perfect abstraction. Hollow form has been carried further here in "Reclining Figure" than anywhere else in Moore's work. In the case of Siena, re-understanding the particular relationship between the parts of the so-called "piece of its body" that comprises the city of Siena is to determine the inevitable link between the solid and void that make the city a corporeal entity.

3.2 SCANNING A FRAGMENT FROM THE CITY MAP OF SIENA

Taking Moore's work as the point of origin, I then explored the quality of the void in the built form of the city of Siena. When my study moved to consider the city of Siena, the original principles I derived from Moore obviously engendered more complex relationships than what I found to be the primary elements in Moore's design, and that is why I chose to deal with only a fragment of the city, one that to me was representative of the city as a whole (See Fig. 28 on page 68).

3.2.1 The Study Area

In my process of study, I wanted to eliminate looking at the city as a whole because, obviously, in the city of Siena there is a *hierarchy* of certain relationships which suggest a quite different reading of the city as a physical body. So I chose a segment of the city in such a way that I tried to read and look at part of the topography of the city and see which segment embodied the most information that was the most characteristic of the phenomenon of the void I wanted to explore. At the same time I wanted to take a slice of the city in such a way that the regular reading of its streets, piazzas, and morphology would not provide for an easy explanation of what the city is about. However, in my study, I was more interested in a piece of its body, but not with what we call street, piazza, etc. I was interested in the relationships between voids and solids. So I chose to analyze a "piece of the body" (See Fig. 29 on page 69) of the city in its conceptual form. I was trying to find a typical fragment, or a specific fragment, of the city, that dealt with these relationships of solid and void and that were essential to represent. I chose a fragment that I thought was the most explicit. Then I went through few iterations in four different scales (See again Fig. 3 on page 13).

By establishing the analogy between the fragment of the city representing the whole and a sectional view of a sculpture by Henry Moore, I provided a framework within which one can see that the city is more than the sum of its parts and is a system of relationships between solids and voids that collectively make it a whole. Re-understanding the particular character

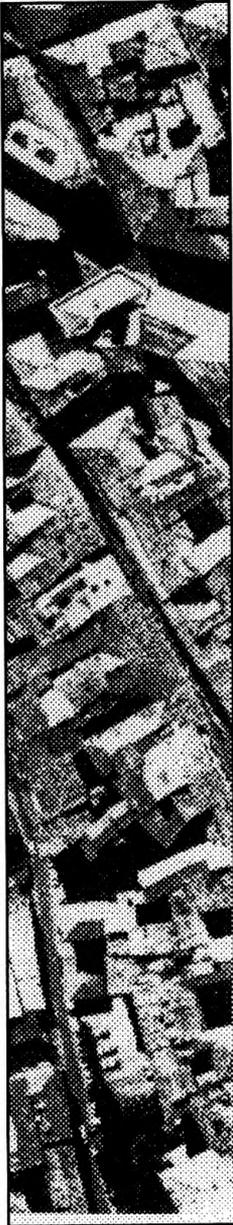


Fig. 28: An areal view of a study area from the city of Siena in scale no. 1



Fig. 28a: Computer scanning and photographic transformation no. 2



Fig. 28b: Computer scanning and photographic transformation no. 4



Fig. 28c: Computer scanning and photographic transformation no. 6



Fig. 29: An aerial view of a study area from the city of Siena in scale no. 3.



Fig. 29a: Computer scanning and photographic transformation no. 1.



Fig. 29b: Computer scanning and photographic transformation no. 2.



Fig. 29c: Computer scanning and photographic transformation no. 3.

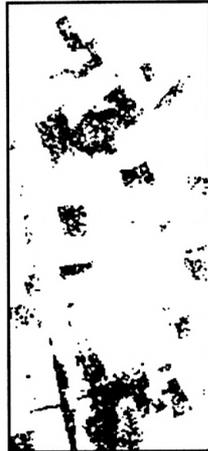


Fig. 29d: Computer scanning and photographic transformation no. 4.

of this relationship between the parts of the "piece of the body" that city comprises is determined by the causal link between the solids and the voids, and inside and outside, makes the whole in the city. I believe that the study of fragments of Siena represents the striving towards understanding an essence of the city as a whole. The solids and voids are all parts of the unity of the entire mass suggested by the unitary reality of the city.

The *study area* or site plan of Siena I submitted offers an extremely effective and precise key to interpretation. What emerges clearly to me is the idea of proposing a fragmented type of construction rather than a single building, or the city as a whole--that is to say countering the block of buildings with an urban structure enabled me to interpret and represent this piece of city. Using a portion of the city of Siena, I attempt to show that spaces *in between* the buildings--what I call voids or negative spaces--are not isolated and disconnected morphological anomalies but act as an integral part of other more visible spatial and formal structures that together create the city as a corporeal entity.

I believe that the fragment of Siena recapitulates the essence of the city as a whole. The solids and voids are all parts of the unity of the entire mass suggested by the unitary reality of the city. Moreover, in my way of reading the city as a physical object, the object becomes the body. It is a different interpretation of the city, suggesting that the city has more than one face. It is more about imagining and dreaming.

3.2.2 Information Extracted From the Scanned Fragment

After I scanned the image of the city, I was trying to answer the question of how the *void*, *solid*, and *formal spaces* worked together to generate the bodily substance of the city. The scanned image helped me understand the relationship between the *continuous mass*, signified by the white areas, and the *enclosed void*, signified by those which were black. I was also able to extract information from the scanned images concerning the way the voids in the city, as well as the holes in Moore's sculptures, work together with the mass in a spatial relationship. The scanned image, after being transformed, for some reason made the invisible parts (voids

and holes) of the object very powerful. The graphic qualities of the composition denote this power of the voids. Maybe this power resides in the absence of a conscious aesthetic intention in the void, and it is the absence of intention that creates its vitality. Discovering the qualities of the void in the scanned image of the city, as well as in the sculpture, enabled me to see an aspect of the physical object hitherto unknown to me.

Within the dimensions of the scanned image of the city of Siena, I was able to recognize the most basic structures that encompass the body of the city. As a result of the scanning process, the images were organized and structured visually. They described intended meanings visually. I could easily differentiate between the solid mass (buildings) that were white, formal spaces such as piazzas and streets, which were usually black, and the voids (in-between spaces), which were usually represented by shades of gray. This contrast in color enabled me to distinguish and appreciate the qualities of each physical object, such as *city* and *sculpture*. Scanning seems to be the perfect demonstration of counterpoise, which when used in a visual composition, produces the most ordered and organized effect possible.

Scanning enabled me to see how the two compositional elements, positive and negative, or solid and void, fight for attention in their interaction. After scanning the image, I used the Adobe Photoshop program to change the figure-ground relationship and further transform the image, so I started with an image where one (solid or void) was dominated by the other and went through different stages reversing the situation.

3.2.3 Transformation from 2D into 3D

My sculptures are freed objects: they have membranes that are bent that keep unfolding. This creates a state of fluidity that makes the spaces inside the sculptures. They all give the feeling of an endless space filled with air. However, this transformation of the 2D image into a sculpture reveals its photographic origins only when seen from the top. Using the black-and-white photos, I converted each tonal value into dimensions of height. The lighter parts of the original image become the high point of the object; the darker parts turn into the ground floor.

The forms of my city sculptures are not simply a collection of solids and voids--they represent a transformation in space. One can sense where masses once were in the present arrangement, and the existence of a "memory" of an implied earlier form. My spatial transformation revealed a structure of order through spacial progress. As the eye of the observer moves through the actual object (my interpretation of the city), new aspects are revealed at each turn. But the total unity can only be understood as a multi-dimensional phenomenon, a form in the process of becoming--*a transformation*.

In my sculptures not just one part of the object is altered, but the character of the whole physical body of the city is transformed. I transformed a two-dimensional, black-and-white field (the scanned plan of Siena), into two-dimensional and three-dimensional visual spaces of hierarchically arranged layers of figure/ground ambiguity, and depth. And through these means of height, width, depth and time--an imaginary four-dimensional entity--I approached a new plastic expression in space. One can imagine moving through and elaborating frames of volume. A continuum of space may sustain the intersection of volumes acting at a distance from each other.

3.3 MAKING THE 3-D INTERPRETATIONS

Making the city sculptures, I could easily recognize the presence of the box or a frame that exists in each one of the pieces (See Fig. 30 on page 74). I found that the frame that exists in the fragment of the city suggests something that I did not see in Moore's pieces. Moving from one scale to another, the frame changes its function in relation to the overall composition. In the beginning in the small scale of the study area, the box, or frame has a greater significance, holding the composition together. In this scale, the frame has the same importance as with a painting, holding all its elements together in one whole. Moving to the larger scales, I realized that my sculptures grew not only on one side of the frame but also on the other side (See Fig. 31 on page 75). So I used the frame to hold the two faces of one object. One side always remained flat, and seemed to represent an aerial view of the city. The other side of the frame was more three-dimensional in its quality, expressing the physicality of the voids and the spaces in between them. Once the object started to grow to its other side, the frame began losing its power to represent the point of reference (the city map). The other side of the sculpture also dealt with the sense of physicality and the complexity of the void. In other words, the exploration of the other side was about the void that became an object as a hole. I was no longer interested in the buildings themselves but in the relationships between figure and ground, and relationships between elements that kept folding and flowing one into the other. It is easy to see a continuous flowing line that connects all the voids and solids together. The frame that exists in my sculptures is what the figure/ground relationship is about. And it was interesting to discover that as I moved up in the scale, I was losing the frame, and it became less and less relevant, maybe because of the growing relevance of the void itself. But still the frame remained present in some kind of implied memory all the way through my pieces.

3.3.1 What the 3-D Interpretations Revealed

In all my studies of the void in its physical sense, the frame starts to fall apart, giving presence to the object itself. Ultimately I wanted to achieve some way of looking at one of those voids,



Fig. 30 a: 3-D interpretation in clay of the study area from the city of Siena, scale no. 1.



Fig. 30 b: 3-D interpretation in clay of the study area from the city of Siena, scale no. 2.



Fig. 30 c: 3-D interpretation in clay of the study area from the city of Siena, scale no. 3.



Fig. 31 a: 3-D interpretation in clay of the study area from the city of Siena, scale no. 1.



Fig. 31 b: 3-D interpretation in clay of the study area from the city of Siena, scale no. 2.



Fig. 31 c : 3-D interpretation in clay of the study area from the from the city of Siena, scale no. 3.

when it becomes an object itself; I wanted to investigate what those voids were all about. My pieces ultimately argue that there is a different way of looking at the city, and offer an understanding of this invisible space and its inversion, which is what the city is all about.

In my final pieces and in the end, the frame disappeared and the city was defined by a relationship of these void-objects to each other. When the frame was lost, I was able to see the voids as objects that can be put in a definable relationship to each other, and start thinking about them as a different way of representing the city. I saw the city as a system of relationships between these void-objects. I moved from reading and looking traditionally at the city to seeing it in opposite, inverted terms. In the end, the city, for me, is an agglomeration of relationships between its void-objects. The methodology implied in studying Moore's sculptures is used in this way to understand the nature of the physicality of the city, which has to do with the physicality of the void.

3.4 CONCLUSIONS FROM STUDYING THE CITY

My three-dimensional iteration for the city provides a different way of reading or interpreting the city. The power of the voids in my sculptures is about the energy that exists in the void and that draws the viewer to the inner part of the object which I called "Shaped Voids." I concluded that each individual hole has two faces or two sides, and, in fact, the frame holds things together, not only on one side. In the end, the boxes in my sculptures evolved to become a frame that play the role of a ground plan or a base from which objects start growing out to the other side of themselves. Eventually the plan starts losing its importance and relevance, because I was no longer interested in the frame as a separate entity that holds things together but was interested in the object as a whole.

I was able to understand what the voids are about as physical objects, to see the inside of the objects, and to appreciate the unfolding quality of the void as a container and its complexity. Moreover, understanding that part of the configuration of an object has to do with the exploration of its other side, providing its own meaning. However, I concluded from my three-dimensional iteration that the void is not always equivalent to an absence and its negation, but denotes the potential that exists in the void and which raises the question of its meaning. I now understand the nature of the physicality of the city by looking at two aspects of the void: the first deals with the void in its physical dimension and physical sense of holding and contains something, and the second is the mysterious sense of the void, its potential in its nature of "becoming" and for reading into it a temporal implication.

CHAPTER 4.0 COMPARISON AND CONCLUSION

In my research I set up a systematic way of looking at and exploring the holes in Moore's sculptures and the void in the city. I narrowed the scope of my study by focusing only on the "leftover" spaces of the city, which I considered *voids*. To do so, I systematically examined the nature of the *hole* in Moore's work and the *void* in the city. First I assumed that the void embodies an absence. At the same time I supposed that this absence does not represent a negation but denotes a potential for reading meaning into it. In the end the configuration of the absence in the form of "Shaped voids" made the absence present and even more so physically tangible.

It became clear to me that there is no one-to-one correspondence between translating and exploring analytically each and every aspect of the void. I found that none of the "Shaped Voids" pieces I created were definitive expressions of the void, but at the same time I established that each sculptural iteration represented a different aspect of the void. As I worked through my series of ceramic pieces and series of iterations of the same fragment of the city, I began taking over Moore's principles of design (discussed in chapter one), appropriating them to my own ends.

4.1 PHASE THREE: COMPARING MOORE AND THE CITY

I used Moore's sculptures as a conceptual framework for understanding and analyzing the leftover spaces in the city; nevertheless, Moore's work is not an equivalent to the city. Therefore, I was open to the possibility of realizing something that I have not, could not have, anticipated by looking at Moore's work. In the case of Moore I had one entire finished object to examine, that represented a bounded entity. At the same time, I chose to examine Siena because I felt that as a walled city it also represented a bounded entity.

Since I was interested in the relationships between *voids* and *solids*, I chose to analyze a

"piece of the body" of the city. In the case of Moore's pieces, I am not talking necessarily about the human body but "a body" in its conceptual form, and the same goes for the city. I was trying to find a typical fragment, or a specific fragment, of the city, and a specific sectional part of Moore's sculpture that dealt with these relationships and that was essential to represent. In Moore's case, I used a *sectional view* or a *side view* of the sculpture. My idea required cutting a piece of a sculpture to examine and from which to begin my pieces. In the case of the city I used *aerial view* and the frame became the ground plan I used to start to build the pieces. The side view of Moore's sculptures with the holes generating their own sense of freedom from gravity, sense of pull, and sense of gathering the objects around themselves is similar to the aerial view of the city where the buildings are gathered around the leftover spaces. That is why my three-dimensional interpretations of Moore's sculptures are *vertical*, whereas my three-dimensional interpretations of the city are more *horizontal*. My three-dimensional pieces interpreting the city started to do something that I didn't see in Moore's sculptures because of the frame or the box. The box suggested something about gravity, and maybe the frame was no longer flat, but had an upper side or other side of the form.

Reading the scanned image synopses and further transforming the two-dimensional images into its three-dimensional manifestations, I found that Moore's sculptures are much more about *solid* and *void* relationships, whereas in my sculptures the issue concerns the *inside-and-outside* relationship (See Fig. 32 on page 80) being expressed through the object, which is composed of different membranes surfaces that are banded. This suggests that the actual object emerges from the base, which is the plan view or the starting point from where the object starts to evolve. In the case of the city the frame of the box was no longer important the way it was in Moore's case. Because I had arrived at the object itself, I was no longer looking at the frame as a separate element but I was interested in looking at the object as a whole. In this case I arrived at a very specific relationship between the object and its own frame because the frame had become dissolved into the object--the "Shaped Void" itself.



Fig. 32: Back view of "Shaped Void" no. 4.



Fig. 32a: Front view of "Shaped Void" no. 4.

In Moore's study I used the frame to define the fragment of the image that I was exploring, so here the frame was a grounding moment that in a sense limited the part of the sculpture that I looked at. That changed as I moved along the process of transformation--for physical necessity, as something that allowed me to make extrusions and to hold the object together. So in Moore's study the frame is much more the outcome of limiting the field at which I was looking, something that did not exist originally in his pieces. Moreover, the frame here is an invented element that I developed in order to start physically building the object and putting it together.

One can say that initially I started from the same promise in both cases. In case of the city of Siena, I started with the frame because I realized that without using the frame, there would not be a *figure/ground* situation and using the frame as a ground plan-- from the city map-- allowed me to grow from the plan view as a starting point into the extrusion of the object.

In my development of Moore's pieces I didn't arrive at the same level of resolution as I did with the city. My "Shaped Void" pieces in the end of the study are freestanding objects, unlike my interpretive pieces of Moore because there was never an objective to begin with to arrive at some kind of object that interprets Moore's sculptures but it was much more an attempt to arrive at some kind of studying and understanding the fragment that then allowed me to move to the exploration of the city. My study of the city take the process much further because Moore was the base for the exploration of the city. However, my pieces which I call "Shaped Voids" revealed the different physical elements of the void and are an attempt to reveal the depth of the void which is inaccessible in a single view. The void is about the mystery of the body of the sculpture, the city, and my work. The void in the sculpture and in the city make up the conceptual analogy of an idea which makes up the bodily substance of the two. And my pieces are about the exploration of the tangible aspect of the invisible substance--the void (See Fig. 33 on page 82).



Fig. 33: Back view of "Shaped Void" no. 1 in clay for a fragment from the study area of the city of Siena.

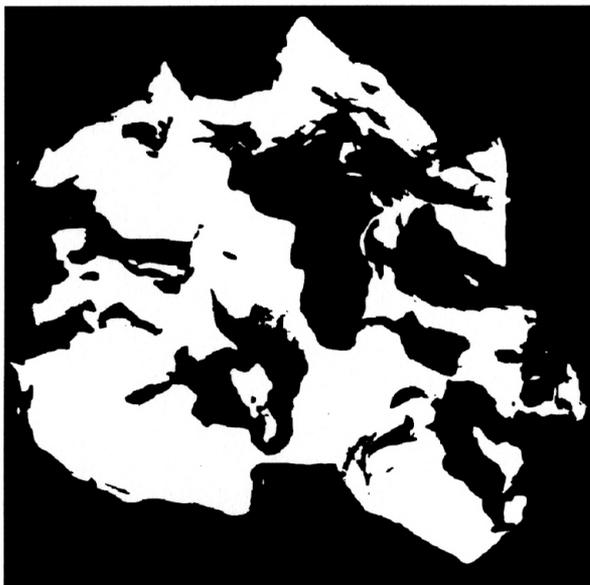


Fig. 33a: Front view of "Shaped Void" no. 1.

4.2 CONCLUSIONS FROM MOORE

Moore's sculptures became a conceptual framework, a starting point to begin my work. For my study of the city I had to understand Moore's attempt to get to the essential nature of the stone, or the wood, and to shape it, as it were, "from inside," from its own center. In Moore's creative act, the artistic creation is a matter of transferring or "projecting" the *inside* to the *outside*. Moore does that by a deliberate use of the holes that complement the idea of the body as something *hollow*. I have already shown in chapter 2.0 that "Two Sleepers" is an example of how Moore expressed the body as something hollow; in this series of drawings, Moore's access to the human body was a creation of inside/outside ambiguity. To make inside concrete and outside vast became the first task Moore tackled. However, the *inside* and *outside* in this drawing are not symmetrical and are not received in the same way. The asymmetry stresses the quality attached to the inside and outside, where the body of the figure is experienced as something hollow, as having the qualities of a vessel. It appears as if the wide open mouth (See Fig. 34 below), or the hole, in the drawing of his sleeping figures as well as in his sculptural pieces leads into the body and represents an opening to its cavity, as if the body were represented as a vessel.

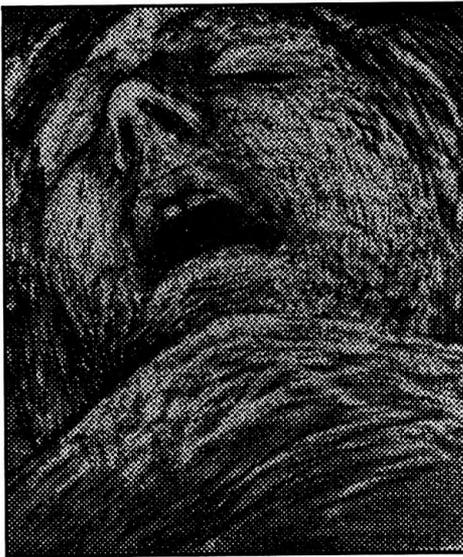


Fig. 34: *Henry Moore: "Head of a Sleeping Figure," 1941. Page from a shelter Sketchbook. chalk, watercolor.*
(Source: Henry Moore. Henry Moore on Sculpture, p. 229)

In his "Reclining Figures," Moore proposed that the boundary between the *inside* and *outside*

of the sculpture in his work is neither a part of the enclosed body nor a part of the surrounding. Yet Moore remained sure that the boundary did lie on a crisp margin. In his own way he redefined the sculptural relationship between *space* and *mass*, as well as what is *inside* and what is *outside*. He understood that the sharp boundary between the mass of an object and the space around it was an illusion, and he expressed this difficult idea with his "Reclining Figures," "in which the space pours into the mass and conversely the mass surrounds empty space so the distinction between *inside* mass and *outside* space is blurred. Moore required that the viewer at some level integrate the notion that space admixes with mass; both affect each other and seem to inform each other."³⁵ So the distinction between inside and outside is blurred. At some level the viewer assimilates the notion that space admixes with mass. It became clear to me that in Moore's sculptures the way the inside and outside are interchanged and made relative abolishes the clear division between the two.

This understanding of Moore accrued further in my work that represents the final and fundamental part of my analytical pieces. That is why my conclusion is derived from Moore but mostly discusses my analytical pieces.

³⁵ Leonard Shlain, Art & Physics Parallel Visions in Space, Time.& Light (New York: William Morrow and Company, 1991) 373.

4.3 CONCLUSIONS FROM THE ANALYTICAL PIECES OF SIENA

At the scale of the city, architecture, too, is the "art of the hollow body." The figuration of the city of Siena as a physical object is elusive and results from the relationships between the inside and outside. Looked from the outside everything is immeasurable; exploring the city, however, reveals the way the void (the invisible side of the city) contributes to the sense of its physicality.

What is the relevance of the idea of the leftover spaces in the city? The city as a physical object grows up to encapsulate the void. To understand the city as a physical object more directly, I explored the notion that the city has a depth that resides in its invisible nature--the void. The basic elements of the city comprise not only its *formal* aspects but its *nonformal* ones as well. The void makes the city more tangible and intense. It is a dimension that is open to interpretation since it has no predetermined meaning. It is also open to our imagination; it is about *mystery*. The void in my sculptures of the city makes the view from around the piece as it is experienced from different directions similar to the experience of visiting the city. The viewer is free to wander around the city, and discover its inner parts, those parts that are neither defined nor expected. The city is a complex structure that creates a ground for exploring the void's mysteries.

My city sculptures analyze the city as a "found object," and discover its imaginary depth. The way I looked at my sculptures while constructing them defines the way I looked at and explored the city. There is no singular perception or preconceived notion of what is the physical aspect of the void when producing the pieces. "Shaped Voids" make the concept of the void tangible and capable of being explored in its different aspects.

As I said, my pieces are the analytical pieces representing my understanding of the tangible aspects of the void. Showing the relationships between rather unlikely objects--drawing, sculpture, and city--my sculptures are a progressive series of convergence of matter and void.

The two most primary binaries in my work--inside/outside and open/closed--play off against each other. The inside and outside relationship in my sculptures become more ambiguous as the form of the figure fades. This ambiguity increased with the filling up of the void as I created more surface area in my pieces. In the pieces where too much surface has been created, less space is there to explore. The motion created by each piece results from an abstraction that does not resolve itself geometrically in the piece.

My goal in this study was to open up the ultimate depths of the city, which is why my sculptures schematicize two strong possibilities, which sharply classified two types of images: at times closed, at others wide open, as in the wide open mouth (hole) in the "Two Sleepers," which gives a third dimension and depth to the cavity of the body.

The method of inquiry that I applied to investigating the matrix of voids throughout the process of abstraction wasn't to fulfill "a model" which was already in my mind. That is the reason why my pieces lack the appearance of preconception and perfection. For each piece I had to go through several different iterations (See Fig. 35 on page 87 showing ten iterations of the same fragment), each an attempt to encapsulate the void. The process led me to the discovery of many different directions for reading into the void. It does so in a way beyond conceptualizing because it is mysterious, which means that the process of exploration is required. My work does not allow or commend immediate understanding; to do so will be contrary not only to my intention but also to the process by which each piece was created. My goal was to create work which is aesthetically sound and visually challenging. I believe that the final image is contained in each piece, waiting to be uncovered by the observer. I worked by chance and experimentation, trial and error, adding and subtracting, making and removing marks until the best image or aspect of the void presented itself. I usually did not begin a work with a clear idea or plan of how it would turn out; when I did, I used that "plan" (of the city) as a starting point, an opening line, and pursued that path until the work was complete. The formal creation was the result of an intuitive process; decisions were made instinctively with my hands responding to a shady part of my mind that I was neither aware of nor able to



Fig. 35a-35j: Series of interpretations in clay for a fragment from the study area of Siena. "Shaped Void" no.1.



Fig. 35b: "Shaped Void" no. 2.



Fig. 35c: "Shaped Void" no. 3.



Fig. 35d: "Shaped Void" no. 4.



Fig. 35e: "Shaped Void" no. 5.



Fig. 35f: "Shaped Void" no. 6.



Fig. 35g: "Shaped Void" no. 7.



Fig. 35h: "Shaped Void" no. 8.



Fig. 35i: "Shaped Void" no. 9.



Fig. 35j: "Shaped Void" no. 10.

recall later. The conscious part of my mind was occupied with a stream of thoughts. This condition served two functions: it prevented me from taking an editorial approach to making art and may be considered left- brain avoidance; second, it allowed me to explore my own experiences using my imagination, by playing with alternative points of view. During this time I was able to reflect on the primary subject of my work--the void, or more specifically the implications of the void.

The first interpretation (See Fig. 36 on page 89) has to do with a space that was not looks enclosed. At this point the interpretation has an immediate relationship between the surface and the space. The surfaces in the beginning pieces play against each other, generating a dynamic sense of movement within themselves. However, the feeling they radiate is of an open space that is a result of the membrane that starts to grow and project itself into the other side of a frame, denoting the fragment retained from the city map.

As I moved to more complex pieces (See Fig. 37 on page 90) that speak about something which is beyond the point of reference of the map, the surface remained very important because its shape and form and size was the result of my working and constructing the clay. The membrane of the clay itself and its movement towards and against other surfaces was what was so important at this stage of my exploration.

But, there was, first of all, something in the nature of the clay itself. According to Caroline Richards, "You can do very many things with it, push this way and pull that, squeeze and roll and attach and pinch and hollow and pile. But you can't do everything with it. You can only go so far, and then the clay resists."³⁶ As I handbuilt my pieces from clay, I pushed, pulled, pinched, and stretched them in places. The clay recorded these gestures and captured their energy. The reason I used clay as a medium was that the membrane of the material did not exist in advance but was something that had to be constructed. Using the clay to construct

³⁶ Caroline Richards, Centering In Pottery, Poetry, and the Person 2nd ed. (Hanover, Massachusetts: Wesleyan University Press, 1989) 19.



Fig. 36: Back view of "Shaped Void" no. 3.



Fig. 36a: Front view of "Shaped Void" no. 3.



Fig. 36b: Side view of "Shaped Void" no. 3.



Fig. 36c: Side view of "Shaped Void" no. 3.



Fig. 37: Back view of "Shaped Void" no. 9.



Fig. 37a: Front view of "Shaped Void" no. 9.



Fig. 37b: Side view of "Shaped Void" no. 9.



Fig. 37c: Side view of "Shaped Void" no. 9.

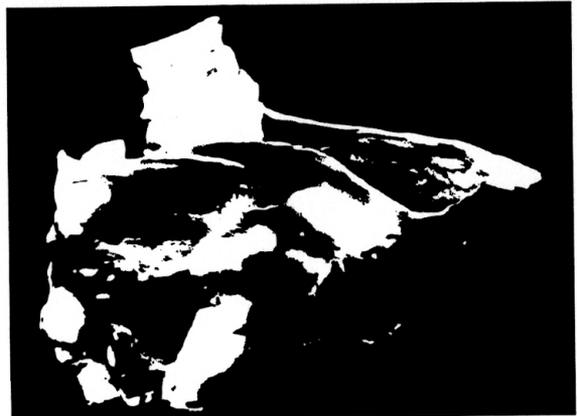


Fig. 37d: Side view of "Shaped Void" no. 9.

the membranes that were the surfaces that encapsulate the voids, I created the voids, rather than using voids to create mass. For that matter using clay helped me to build something that differentiated between solid surface and the leftover space.

Capturing the "force of energy" in the clay, to me, holds endless possibilities in reading into the void. Those possibilities are an integral part of the nature of my pieces which are integral parts of the nature of the void. "Shaped Voids" also deal with a dynamic interplay of "forces of energy"--from the outside in, and from the inside out. They are representations of the flow of energy from inside out as well as outside in. They convey the power of the hole that draws the eye of the viewer inside the object. This power and energy that exist in the void free the "Shaped Void" object from being static and make it more dynamic and dramatic. The idea of the energy that exists in the void is the property that resides in the physicality of an object, because it has the power to retain things on the other side.

What is interesting, despite that I was actually building the void, is that one is still able to fully appreciate the "energy system" that is projected from within the object to the surrounding. This rendered a simple contrast that exists in the nature of the void. This powerful conflict, of the relationship between inside and outside, which under normal circumstances would destroy a piece of work, gives "Shaped Voids" character by weaving the threads that circulate mutually between the inside and outside, exterior and interior, one side and the other side of a physical object.

My final pieces became more enclosed, suggesting a direction of an the enclosing of space (See Fig. 38 on page 92). These pieces have a great sense of volume in them, and one can feel the enclosed space from the outside. From the outside, the surfaces give the feeling of opacity and depth at the same time (See Fig. 39 on page 93).

All my three-dimensional interpretations also show that "Shaped Voids" can be taken by hand and examined as "objects" in themselves. They must be looked at from all sides, because of



Fig. 38: Back view of "Shaped Void" iteration no. 5.



Fig. 38b: Side view of "Shaped Void" iteration no. 5.



Fig. 38a: Front view of "Shaped Void" iteration no. 5.



Fig. 38c: Side view of "Shaped Void" iteration no. 5.



Fig. 39: Back view of "Shaped Void" no. 9.



Fig. 39a: Side view of "Shaped Void" no. 9.



Fig. 39b: Side view of "Shaped Void" no. 9.



Fig. 39c: Side view of "Shaped Void" no. 9.

the inversion of the frame. The point of reference (the map of the city of Siena) is no longer important because I have arrived at the object itself where the frame becomes an integral part of it. Moreover, the fact that "Shaped Voids" have more than one face informs the creation of an "imaginary map" of the city as an interpretive object. This enabled me not to see better or to see more completely, but to see something else: *the void as an object in itself*, and not as an *absence*.

The iterations of "Shaped Voids" possessed a level of tangible feeling, but it was the *formation* in each, not the *form*, that remained mysterious. Making several different iterations for the same fragment enabled me to reconstruct the city, generating a new imaginary map to the city to understand some parts of the city by digging into its imaginary dimension. When building "Shaped Voids," I remembered that it was the inverted aspect of what I had observed that I was building, so it was difficult for me to see the totality of an object while making it. Only after firing the first bisque fire could I eventually flip the object over to its other side to fully appreciate its totality. I was also very concerned with the "boundary lines" that create the differentiation between solid and void, inside and outside. By selecting the "boundary lines" carefully in each of the iterations, I tried to achieve a visual language that expressed the reciprocity of the relationship between solid and void as well as inside and outside. This method of inquiry allowed me to physically represent an idea which is really metaphysical in a tangible way. That is why "Shaped Voids" represented in a physical way that which theoretically can't quite be built--the void--which is formless and invisible.

4.3.1 Different Aspects of the Void

To explain the physical nature of the void I discuss in this section the primary elements that evolved in my pieces and which I used as vehicles for understanding the different aspects inherent in the void: the volume as the property of the "Shaped Voids," the movement of the surface of the "Shaped Void", and the mysterious and imaginary feeling of each piece.

4.3.1.1 The Volume as a Property of the "Shaped Void"

Looking at "Shaped Voids," I must admit that the void has dimensions. The void has volume--this volume having length, width, and depth--and the void has an organic sense of growth (See Fig. 40 on page 96). One can see that the volume of the void is equal in its dimensions (length, width, and depth) to the natural air that would fill it up (if one could place air in the void). In fact the void in my pieces is an empty space; it is the leftover space between the surfaces of the piece that is capable of containing something but demarks its absence; such shapes can exist only because of the volumes that exist between the membranes which we can fill with our imagination (See Fig. 41 on page 97).

Talking about the volume of the piece is not about the volume as something to be filled in, but the volume of something which is not there. To consider the void as a volume having length, width, and depth is possible while observing my pieces. The void connects one side to the other, making each piece immediately more three dimensional. "Shaped Voids" consist of openings, each opening a revelation of the other side of the object. The void offers many different opportunities for reading into object's multiple levels of meanings, and the potential it shows to be engaged with the intervals and open ends of meanings.

4.3.1.2 The Movement of the Surface of the "Shaped Void"

Where Moore used holes to create surfaces, I used surfaces to create holes or spaces. In my sculptures the existence of the surface is important because of its inherent capacity to separate the region of what is the same from the region of what is the other--moreover, to separate the *inside* from the *outside*.

When I speak of movement in my work I mean the movement of one membrane of clay against another membrane. That is why I chose to work with slabs. Initially each form was hand built with a series of slabs and strips of membrane clay. This required constructing the piece in a controlled fashion, yielding various "imperfections" that gave the shape a unique gesture. The membranes of the clay were the traces of the boundaries between inside and



Fig. 40: Back view of "Shaped Void" no. 2.



Fig. 40a: Front view of "Shaped Void" no. 2.



Fig. 40b: Side view of "Shaped void" no. 2.



Fig. 40c: Side view of "Shaped Void" no. 2.



Fig. 41: Back view of "Shaped Void" no. 7.



Fig. 41b: Side view of "Shaped Void" no. 7.



Fig. 41a: Side view of "Shaped Void" no. 7.

outside. The surfaces that evolved in my pieces encapsulated the void; at the same time they became intermediate tools for the movement of the viewer's eye around and inside the piece.

I also created surfaces with different degrees of opening and closing to further stress the movement of the surfaces, playing with both the visible and the hidden qualities of the spaces. As a result, I found that the outside and inside of the shaped spaces in my work are so frequently blurred and inverted that I concluded that they give the feeling of being half-open.

What is "in between" the surfaces of my sculptures is my definition of the void, for it is a disconnected space. Those surfaces cannot touch since, in fact, in between the first surface and second surface, there is something divisible or a leftover space which could only be named the void. That accomplished, there remains an absolute void, for there is a place--the concave surface--which nobody fills up.

In exploring the void I found that the void itself became the property of the piece. The void comprises the surface that envelopes the inner part of the body of the piece. In fact, the reason for moving around the piece while observing it resides in its form. If the form were abstracted from the body of the piece (as in the case of my work), there would remain only the matter. However, matter does not possess anything in itself by which it can resist such movement. Perhaps one might say that when the form is abstracted in my pieces, the matter does not retain any quality, since all qualities come from the form, but the matter retains quantity, because quantity comes from matter. In my pieces whatever has form is in the process still of being formed. Form is never fixed; the form is eroding and reshaping constantly; all forming then is transforming. "Shaped Voids" are in the stage of becoming, reforming, and transforming, which is central to the open-ended process of my design.

4.3.1.3 The Mysterious and Imaginative Feeling of the Void

My pieces seem externally fragile because they contain a delicate and gentle affirmation of the spirit reflected in the nature of the void. "Shaped Voids" possess a great deal of *mystery* and

imagination. Mystery for me works in terms of what one *cannot* see; the opacity of the body with the small opening of the mouth in the "Two Sleepers" is an example. My pieces are mysterious because the observer cannot conceptualize the space in the piece from any single angle. The observer has to move around them to resolve the mystery and transform it into another register. In the process of making the pieces as well as exploring the voids in them, time was a factor that helped me in translating the unknown into the known. Going through several iterations of the same segment of the city in "Shaped Voids" resolved some of the mystery through the exploration of the different angles, each stressing a different aspect of the same void. Likewise, exploring the city takes place in time, and the city is recreated as a physical object in our mind (See Fig. 42 on page 100).

The idea of imagination is another yet interesting entry to my pieces both in terms of its problems and its opportunities. It seems to me that "Shaped Voids" objects celebrate the imaginative possibilities of the material--clay--as much as the object itself. There is a unique relationship between clay as a material and the void as an object. And within that relationship there is a the power of the object to provoke our imagination. Maybe it is about the power of the vessel image that exists in the "Shaped Void" objects. My work necessarily involves the use of imagination not only while making it but also while understanding and experiencing it.



Fig. 42: Back view of "Shaped Void" no. 10.



Fig. 42a: Front view of "Shaped Void" no. 10.



Fig. 42b: Side view of "Shaped Void" no. 10.



Fig. 42c: Side view of "Shaped Void" no. 10.

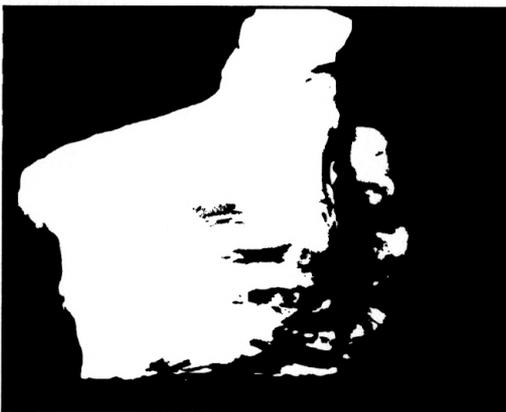


Fig. 42d: Side view of "Shaped Void" no. 10.

4.4 SIGNIFICANCE

My sculptures evoke a striking contrast between the back and front of an object divided by its frame, which is further emphasized by the unsymmetrical structure of the whole. Uniformity versus variety, discontinuity versus continuity, flat versus three dimensional, and order versus disorder are binary oppositions exhibited in my pieces. I found that lines became curves, surfaces became spaces. The sculptures also rendered parallel polarities, such as inorganic shapes becoming organic, quite meaningfully. What was interesting was that although the back and front of the objects seemed completely independent in their interiors, they utilized elements which the other half contained. Yet the sculptures succeeded in putting such polarized elements in one architectural structure.

In the end those pieces had to speak as "bodies of work" and for their own spaces, conveying the idea of how a membrane surface evolves to become enclosed space. "Shaped Voids" are also about the consequences of technique and a way of looking at "things" to reveal "something else." The sculptures reveal an object that has different points of view, including the view of approaching them from their inside and not the outside, so one would not take for granted any particular point of view. My objects are representations of *possibilities*--"Shaped Voids" in their analytical aspect have the same possibilities for as the sculptures of Moore and the city of Siena.

As I have already mentioned, aesthetics, the relationship between *solid* and *void* and *inside* and *outside*, and relevance to one's own experience, standards, and interpretations are primary concerns in this body of work. In reality, the sculptures convey an extreme aesthetic condition in my work, and has qualities most often associated with the uncanny.

My sculptures give a concrete tangible form to a nonformal substance (the void). The nonformal quality of the void often suggests a transparency of context as well, revealing unnoticed structural qualities in the object itself. The void may have an inherent quality of

substance, or it may have an inherent quality of organization of substance. For this reason, one can distinguish between "physical" and "conceptual" voids. One may distinguish between certain plans to which the void is able to attribute a physical essence and other areas where substance is totally opposed to the transmission of the essence of the solid object. And one may also discover that all of these voids, regardless of their representational content, are defined as parts of the physicality of the city. The double nature of the void (physically and conceptually) may be illustrated by an analysis of "Shaped Void" objects in which the void implies an image of the city.

My pieces deal with the immeasurable, invisible aspects of the city and attempt to understand the void and allow me to see something that yet cannot be represented. In practice, my study is also about the way analysis relates to design, but the design itself can not be hierarchically privileged. Yet my study speaks about the necessity of a method of inquiry in any design project. The way I worked this project was about exploration and discovery. The process led me to the discovery of many different directions for reading into the void. It does so in a way beyond conceptualizing because the void is mysterious, which means that the process of exploration is required in order to get in the discovery of things. This is the way I work one thing leads to the next, one step is the following of the previous one and is based upon it. The process was not about a big person making huge things but it was about making and exploring many different aspects of the same issue and putting them together into a series of objects.

I've been trying throughout my thesis to create something that is not driven by specific criteria. It is curiosity and an intuited sense of something that has driven me to look for criteria and to articulate what to do about them in the process. If I knew what an object was going to look like, if I knew what it meant, I wouldn't have to make it. All of that is laid out in the work and, I hope, that if people know the language and background, they will have a more complete understanding of the physicality of the city inherent in the nature of the void. At some level, I want to grab, to engage, people through my work and keep them looking

until somehow, maybe, I have conveyed to them a different way of looking at the city through my work.

I've always been encouraged by this sort of process. This effort to personalize my work suggests that if one can see or understand what I have tried to convey, then perhaps a similar response and experience and insight is about to happen in them. The process of design in this thesis is also about the significance of what I have discovered, and in the end, the proposition of my thesis is the necessity of analysis in any design project.

I've obviously just skimmed the surface here, but I hope I have communicated a better sense of how I worked these process out and what was in it for me.

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