

Before Navajo weavers started weaving rugs and tapestries for a non-Navajo clientele, Navajos wove blankets for use as clothing. In the middle of these woven compositions, a hole was sometimes left for the head of the wearer to protrude. This opening in the center is quite apparent in the composition in Plate 4. These blankets put the center of the person into the center of the garment, surrounding the wearer with the dynamic and holistic elements of the compositions.

Navajo jewelry is also made to be worn, and jewelry is the one art form that the Navajo do keep, cherish, and use for personal adornment. These compositions are also centered, not only by powerful center elements and motifs around which they are composed, but also on the persons who wear them. The necklace has its prominent element at its base, which when worn is centered in the upper chest, just over the heart. The concho belts are centered on the buckle at the center of the abdomen. Even the wrist guards and the wrist bracelets center the appendages at the junction of the hand and the arm. Hat bands are centered on the forehead. The pins and buttons are also usually centered on the persons who wear them.

Centering these art forms on and to the person who wears them tends to make the jewelry and the blankets extensions of the person, just as sandpainting makes the patient an integral part of the world portrayed. The transparency of most of the silverwork pieces and the head openings on the blankets tend to integrate them with and make them an extension of the person who wears them, just as the transparency of the sandpaintings make the earth below part and parcel of the painting. Thus, these art forms are not only visually holistic, but they also make the environment and the person part of the whole through the power of the center to control, focus, and synthesize—integrating multidimensional, symmetrical and asymmetrical wholes that are visual metaphors of the cosmos in motion and in concert.

## Part Two: Introduction

My experience in anthropology has been primarily backwards, or an inversion of the normal experience within the field. That inversion is replicated in the organization of this book. Here, we will take theory from the field of a non-Western culture and apply it to cultural domains of a Western culture. This is a new and different kind of ethnography, so we will call it the new ethnography. This new ethnography might best be described as comparative philosophy.

In the normal course of an anthropological career, one goes to graduate school at one of the major research institutions for several years, getting trained in whatever bodies of theory and methodology that particular graduate program has to offer. Then one writes a research proposal, gets funding, goes to the field for a year or so, and returns to the university to write a dissertation based on the field research. Usually three to four times as much time is spent at the university as is spent in the field. My experience was just the opposite.

I spent eight years in the field among the Navajo before I ever went to the university, and I spent only 18 months at the University of Chicago getting an M.A. and a Ph.D. in Anthropology. I did my research before I wrote my research proposal, wrote my dissertation before being admitted to candidacy, and defended it six weeks after receiving my M.A. I experienced culture shock at the university, not in the field, and I returned to the field to teach at the Navajo Community College after completing my rite of passage in graduate school.

The most important aspect of this inverted career was the perspective it gave me on this strange tribe of academics and what they believed. I actually expected what they said and wrote to make sense, to shed light on my experience in what they called the field, which in reality had become home for me. Instead, I used what I learned in the field to make sense out of what I was hearing at the university. As a result, I inverted the normal relationship of field/home and data/theory. I got my theories for understanding

the world and human experience within it from the Navajo. My intellectual friends and relatives among the Navajo were my colleagues, not my informants. I did not study the Navajo; I studied with the Navajo. I was there to learn ideas, not to collect data. From the theories and philosophies I had learned on the Reservation, I tried to make sense out of the beliefs, sacred literature, rites of passage, and strange behavior I found among the culturites.

Standard anthropology is intellectual provincialism if not cultural imperialism. It gets its theory from its Western ancestors and applies these theories to the data it finds in other cultures throughout the world. More recently, it has also applied some of these theories to Western peoples and cultures as well. This provincial binary opposition is ingrained in anthropological thought and sanctified in anthropological discourse. The natives have beliefs; the anthropologists have theories. The natives deal in myths; the anthropologists deal in knowledge. They tell stories; we write history. Their doctors are medicine men; our medicine men are doctors. Their psychiatrists are shamans; our shamans are psychiatrists. They have ethnoscience, ethnobotany, etc., while we have the real thing. They have cognized world views, while we have actual knowledge of the world. I submit that this is nothing more than intellectual and epistemological provincialism.

Anthropologists often do great violence to the philosophies, knowledge, and experiences of other peoples. The natives simply become tokens of some Western theoretical type. When we "explain" their beliefs and their behavior by our theories, we not only do indefensible violence to their beliefs and theories, we make two more grave errors. First, we miss the affinity between their beliefs and their behavior, on which our first understanding of them should be based. Second, and probably most important, we miss the opportunity to learn from them and to include what they have thought and experienced in a consultable record of what humans everywhere have thought and experienced:

The essential vocation of interpretive anthropology is not to answer our deepest questions, but to make available to us answers that others, guarding other sheep in other valleys, have given, and thus to include them in the consultable record of what man has said (Geertz 1973:30).

The new ethnography, as I practice it, treats the philosophical and intellectual stock of each culture as a distinct body theory, a unique intellectual construction regarding the world and human experience within it. The cultural constructions of all peoples are, for purposes of comparison and cross-cultural fertilization, held to be on a par with each other. Ethnography thus becomes the exploration of the philosophies and aesthetic accomplishments of humans everywhere, including those of the West. I view anthropologists as simply other natives immersed in their own cognized views of the world. To transcend this monocultural perspective, we must immerse ourselves—to the degree possible—in other cultural worlds, learning to converse with the intellectuals and artists of those other worlds.

The approach to ethnography recommended here was actually suggested to us long ago by Emile Durkheim, a social philosopher of the 19th-century. In *The Elementary Forms of the Religious Life*, he argues that when the ideas and theories that inform what Westerners call magical rites are understood, they "no longer appear as very simple notions . . . but rather they appear as priceless instruments of thought which the human groups have laboriously forged through the centuries and where they have accumulated the best of their intellectual capital" (65:32-33).

We regard the natives of other cultures not as informants, but as colleagues and teachers with whom we can attempt to converse and from whom we can hope to learn. And, to the extent they are interested, we can share some of our thoughts and experiences with them so that we both may become enlightened and enriched from the cross-cultural encounter. This kind of an endeavor provides the basis for cross-cultural fertilization in art, science, and philosophy. As such, ethnography becomes an adventure in comparative art and philosophy, rather than an exercise in intellectual provincialism or cultural imperialism.

While it may seem hopelessly idealistic to some, this has been the actual pattern, both formally and informally, of our experience with the Navajo. We did not study the Navajo; we studied with the Navajo. Both of us have taught and shared with Navajos whatever we have had to offer in the way of theoretical and artistic insights as teachers at Navajo Community College as well as with Navajos

in other places and forums. Likewise, our thought and art have been changed and enriched by what we have learned from Navajo thought, art, and experience.

The new ethnography takes Navajo comprehensions and truths at their Navajo face value. As natives of another cultural world, we are in no place to pronounce their comprehensions and truths to be anything other than what they are: Navajo understandings of the world and their place within it. It is inappropriate logically and ethically to use the theories of one culture, based on its presuppositions and its epistemology, to study, analyze, and interpret the comprehensions and truths of another cultural world, which is constructed out of different presuppositions and built on a different body of historical experience and collective thought.

What we have to do in this style of anthropology is to understand and interpret another cultural word in its own terms (Schneider 1968: 1-14). In this way we try to see the world as they see it and try to understand their experience in the world as they experience it. Of course, accomplishing this feat is impossible in a total sense. We can never be Navajos, think like Navajos, or experience things like Navajos do. But we can do this to some degree, and the greater degree to which we are able to do it, the better ethnography we are potentially able to write.

We do not do surgery in the sewer simply because it is impossible to create a completely sterile environment. Likewise, because it is impossible to ever totally understand another cultural world as the natives do is no reason not to try to understand some of it as the natives do. The only alternatives to this approach are to transform other peoples into tokens of one Western type or another, to use them as illustrations of one Western theory or another, or simply to proclaim them incomprehensible, making ethnography reflexive explorations of self. Every ethnography will contain distortions, but we should not resign from the task because it is impossible to write an ethnography without distortions. What we should do is be aware of the problems of distortion and strive continually to reduce them as our understandings continue to grow and improve. Commentary on our ethnographies by Native scholars and artists will provide our best gauge for how well or how poorly we are grasping the intricacies of their world.

Navajo comprehensions and creations should be put on a par with those of other peoples, including those of the West and those

of the anthropologist. This does not necessarily mean Navajo creations or comprehensions are any better or any worse than those of other cultural worlds. What it does mean is that the unequal superior/inferior, subject/object, observer/observed, scholar/informant relationships that have characterized anthropology in the colonial setting must be put aside and must be replaced by an egalitarian relationship in which anthropologists realize that they are simply other natives with other beliefs and other cognized world views.

When we started learning about Navajo art and culture, we did not go there to study dynamic symmetry and holistic asymmetry. This comprehension of Navajo art and culture emerged from our exposure to and immersion in Navajo art and culture. It is our characterization of what we learned from and about Navajo art and culture, and it represents, according to our best approximation, how the Navajo see the world and how they express their comprehensions of the world in their visual arts. Dynamic symmetry and holistic asymmetry is what we think we found in the Navajo cultural universe; it is not something we imposed upon it. This interpretation has emerged out of nearly 30 years of living, working, and conversing with Navajo people, much of which was in their language and in their communities.

In the following three chapters in Part Two of this book, we look back at Western art and science from the theoretical and aesthetic perspectives we learned from our encounter with Navajo art and culture. This is not done in the spirit of reductionism or in the spirit of imperialism, but in the spirit of exploration and comparison. Reducing Western art and science to Navajo premises would be as wrong as reducing Navajo art and thought to the premises of Western art and science. Likewise, to use one as a measure or a standard by which to judge the other would be equally inappropriate. But to compare the two to see what they have to say to each other, to see how they can reflect upon each other, and how they can enlighten each other, is to practice the best kind of comparative art and philosophy.

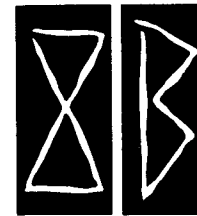
Dynamic symmetry and holistic asymmetry do not dominate Western art to the degree they dominate Navajo art, but they are present in significant ways and in significant places in Western art. What Navajo artists see in the world and express in their art has not totally escaped Western artists and is given significant

expression in the works of a number of Western artists. In the next chapter, we look at particular artists and art traditions in the West in which something similar to dynamic, holistic symmetry is given expression. We also explore how Navajo art in particular and American Indian art in general may have provided some of the stimulus for these holistic expressions of symmetry and asymmetry. Just as African art provided a major stimulus for European art, American Indian art played a major role in the development of distinctively American artistic traditions.

The cross-fertilization that has already happened in the field of art could also occur in the fields of comparative science and philosophy, but only a few, such as Capra in *The Tao of Physics*, have dared to take this adventure. The new science is desperately searching for new metaphors to understand the new world of particle physics. The Great Machine metaphor of the Newtonian age will no longer suffice. The images and concepts found in Navajo art and culture may provide some of the stimulus needed to formulate and articulate the kind of new syntheses and new metaphors that we hope will enlighten us all about the worlds in which we live. This is the impetus for the final two chapters in this book, which look at modern science in the light shed on it by Navajo aesthetic and philosophical propositions.

## Chapter Four

# Dynamic Symmetry and Holistic Asymmetry in Modern Art



Symmetry has been a concept of beauty, harmony, balance, and awe in a great variety of cultures and in many historical periods. In fact, symmetry has represented perfection for many people. A modern poet, Anna Wickham, addresses deity as "Thou great symmetry":

God, Thou great symmetry  
Who put a biting lust in me  
From whence my sorrows spring,  
For all the frittered days  
That I have spent in shapeless ways  
Give me one perfect thing.

*Envoi*  
from *The Contemplative Quarry*

Symmetry is a feature of nearly all artistic traditions, although its prevalence and significance have fluctuated from time to time and from place to place. In the Western artistic tradition, a symmetrical format provided the main pattern for organizing visual information until the late Renaissance. Since then, other compositional formats have developed and been preferred. In the last three decades, however, symmetry has again emerged as an important pictorial means in such traditions as chromatic *abstraction*, *color field*, and *one-image* art.

A number of prominent artists of the last four decades, such as Frank Stella, Barnett Newman, Jasper Johns, and Jackson Pollock, employed symmetry as a primary structural means. Stella in his *pin stripe* painting, *Die Fahne Hoch* (1959), offered a virtual diagram

of horizontal-vertical symmetry, while Newman, in his search for the sublime, employed simple symmetry and investigated the symmetry of color, a topic about which we will have much more to say later in this chapter. Johns sought images that in their natural state were symmetrical, using them to make them seem to concern themselves simultaneously with flatness and dimensionality, although his works are essentially flat. The feature of symmetry probably led most of these artists to see a connection between their own art and that of the American Indian.

Stella and Johns acquired significant collections of American Indian art, and Newman made a study of it. Jackson Pollock, the revolutionary American painter, often referred to the influence that Navajo sandpainting had on him when he was exposed to it in his youth.

The abstract painters Hans Hofmann and Piet Mondrian also wrote about the importance of bipolarity and complementary asymmetry in achieving holism. Hofmann states: "The pictorial life as a pictorial reality results from the aggregate of two-and-three dimensional tensions: a combination of the effect of simultaneous expansion and contraction with that of push and pull" (Hofmann 1955:150).

Although Hofmann does not state the exact proportions necessary for unifying opposing forces, he does present the contrast of two-dimensionality and three-dimensionality that subdivides into the two bipolarities of "expansion and contraction" and "push and pull." When combined, these bipolarities supply the "aggregate" image. However, by observing Hofmann's paintings (e.g., *The Golden Wall*), one sees that these polarities form a harmonious whole. For example, one can perceive separately the action of either two-dimensionality (which reads across the picture plane) or three-dimensionality (which retreats behind and advances beyond the picture plane), depending on the focus of concentration. In other words, one force does not dominate the other in the visual perception of his works—both operate simultaneously and with equal intensity. A further examination of Hofmann's painting provides an example of how these bipolarities are affected by field forces.

In his classic essay, "The Plastic Art & Pure Plastic Art," Mondrian (1964) expounds on the bipolar, asymmetrical nature of art and proposes a corresponding theory for constructing dynamic

space. Basic to his idea is the bipolarity or asymmetry between the cultural and the individual, the objective and the subjective:

Although art is fundamentally everywhere and always the same, nevertheless two main human inclinations, diametrically opposed to each other, appear in its many and varied expressions. One aims at the *direct creation of universal beauty*, the other at the *esthetic expression of oneself*, in other words, of that which one thinks and experiences. The first aims at representing reality objectively, the second subjectively (in Herbert 1964: 115).

Because organization of pictorial elements deals directly with the underlying field forces, this aspect of Mondrian's theory provides insight for us here:

The only problem in art is to achieve a balance between the subjective and the objective. But it is of the utmost importance that this problem should be solved, in the realm of plastic art—technically, as it were—and not in the realm of thought. The work of art must be "produced," "constructed" (in Herbert 1964:115-116).

Jack Burnham (1971:57) also maintains that a balance of bipolar factors is essential to a work of art. The terms that he identifies and establishes for his own search of a common structural mode are naturalism and culturalism. According to Burnham (1971:57), a balance of these two forces in art must always be preserved since art, like myth, is engaged by society to mediate between the natural and the cultural. As such, art serves to naturalize the cultural and culturalize the natural. But what constitutes the natural and the cultural? "Within the Natural-Cultural dialectic the process of art-making is always natural, while the concepts and choices of the artist are invariably cultural. This is a mediation which the author finds to be consistently observed" (1971:56-57).

The plastic art theory of Mondrian, which includes the objective-subjective bipolarity, and the structural art theory of Burnham, which he describes as the natural-cultural dialectic, both stress the requirement of balancing or synthesizing bipolar asymmetries. Mondrian proposes the concept of equivalence that offers insight into precisely how these asymmetries are holistically integrated. Concerning the meaning of balance in his own theory, Mondrian (1964:122) claims that, "The important task . . . of all art is to destroy the static equilibrium by establishing a dynamic one."

The "fundamental law of equivalence" to which Mondrian refers is "unified expression through the balance of two opposites" (1964:115). For him, a unified aesthetic expression was created by "equalizing" the energies produced through the action of the field forces, the final result of which was dynamic. Mondrian's idea of unifying opposites is exemplified in his painting *Tableau I* (1921).

The foregoing discussion of dynamic symmetry and holistic asymmetry in modern art stresses the unification of opposing visual forces through the idea of equivalence. This approach to holism produces a new summative entity, instead of merely furnishing an even distribution of parts across a picture plane. This holistic entity exists in dynamic equilibrium, which is commonly perceived as spatial tension.

The synthesis of contrast, as a means of creating unity, has become increasingly important during the historical development of modern art from Monet to Olitski. Early 20th-century artists such as Picasso, Braque, and Mondrian all produced spatial tension in their paintings by equalizing strong dark-light relationships (see Navajo textile in Plate 29). Matisse and others applied complementary colors with equal energies to create forceful expressions of the emotional qualities of life (see Navajo compositions in Plates 5, 6, 8, and 9). All these artists reduced complex orchestrations of values and colors to high contrasts of asymmetrical pictorial elements. Later, the emphasis on bipolar dualism evolved as the primary method of pictorial organization, especially with the advent of color field painting.

In color field painting, contrasting red, yellow, and blue energies are equalized to envisage overall holistic configurations (see Navajo composition in Plate 29). We propose that the equalization of asymmetrical color properties supplies the primary organizational means—in conjunction with the field forces—for constructing the pictorial configuration of holistic asymmetry.

Mondrian's idea of balancing bipolarities or asymmetries through the principle of equalization provides the foundation and springboard for developing an understanding of color symmetry based on the unification of binary pairs. Central to Arnheim's color theory, as it relates specifically to pictorial organization, is color completion. Color completion, a form of holism, is the unifying effect of space that occurs when combinations of complementary hues are applied with contrasting, neutralizing energies. Bipolar

symmetry results from opposing properties of complementary colors; holistic symmetry develops where the neutralization of energies occurs when the intensities of contrasting energies are brought to a state of dynamic equilibrium.

The effect of color symmetry can be produced by a single unification of two bipolar hues. It can also be accomplished to a larger degree by unification or integration of several bipolar colors. Hue basically divides into three bipolar pairs: red and blue, blue and yellow, yellow and red.

They are the only set of complementarities in which all constituents are pure hues and therefore totally exclude the other two. There is nothing yellow in the pure blue, nothing blue in the pure red, and so forth. At the same time the three colors require one another. This particular structural combination of mutual exclusion and attraction is the basis of all color organization . . . (Arnheim 1974:357).

The basic asymmetry of the fundamental triad is the principle by which all three hues exclude each other in terms of their individual properties but also require each other to ensure the creation of a full or holistic color union. Color symmetry, the unification of a bipolar color pair, constitutes a new singular, summative entity. Thus, the total concept of color completion, which encompasses the ultimate effect of color symmetry, is dynamic and holistic (see Figure 20 below).

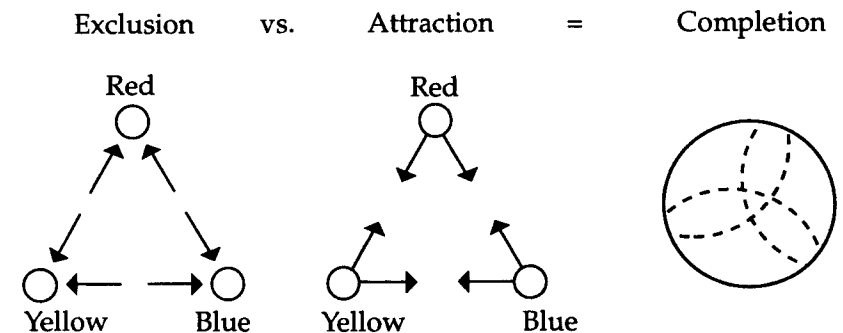


Figure 20. Total Concept of Color Bipolarity:  
The Fundamental Triad

When the basic bipolarity of hue—exclusion and attraction—is applied to secondary hue mixtures, we find that any combination of two primary hues opposes and complements the third:

This produces a symmetrical system of three intertwining pairs of complementarities. Each pair consists of a pure hue and the balanced mixture of the other two: blue and orange, yellow and purple (or violet—whichever word one prefers for describing a balanced red-blue), blue and orange. This amounts to a two-level hierarchy, consisting of the three primary pure hues and three secondary balanced mixtures (Arnheim 1974:358).

This “symmetrical system of three intertwining pairs of complementarities” at first appears to be merely what is commonly referred to as complementary colors or hues that lie opposite each other on the color wheel. However, Arnheim postulates that all three hues of the fundamental triad are included in each pair of complementarities—one pure color and a “balanced mixture of the other two.” The principle of bipolar symmetry is still operative, but on a less obvious level (see Figure 21 below).

If we focus our eyes on an intense red for a period long enough to saturate the cone receptors for red in the retina (usually only a few seconds), then suddenly take our eyes off the red and focus on a neutral color or white, we will for a short moment see green. This is because the red receptors tire from the saturation and the other receptors for blue and yellow take over and try to balance our perception of color. This phenomenon in the physiology of the eye is

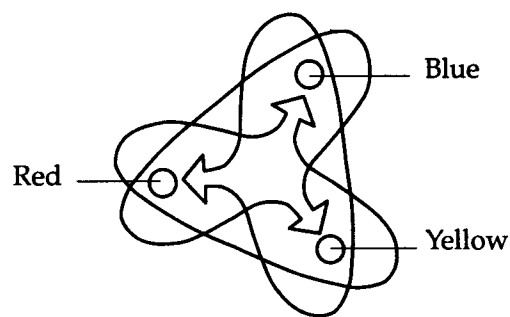


Figure 21. Bipolar Symmetry of Complementarities

an optical effect or illusion called simultaneous contrast. This is evidence that the central nervous system in human beings is constantly oriented toward achieving some kind of balance, harmony, or equilibrium. The law of *pragnanz*, another functional aspect of the central nervous system, seeks the simplest solution or clearest resolution to any imbalance or disequilibrium. In this case, green is the best hue to balance red because green is exactly opposite red on the color wheel.

Whereas color symmetry in Navajo weaving is often very subtle in terms of hue, color symmetry found in contemporary art is more overt and dramatic. Examples of three-way color symmetry (in terms of hue) are found in Hofmann’s *Memoria in Aeterna* and in Mondrian’s *Tableau I*. Three-way hue symmetry is also illustrated in my own paintings based on Navajo weaving configurations (see Plates 10, 33 and 34). In my work, I have combined all three of the primary hues in an attempt to achieve a dynamic equalization of the visual energies found in each.

Although Cezanne’s painting is considered the precursor to the trend of reductivism, the early twentieth-century artists Kasimir Malevich and Marcel Duchamp produced works and expressed theories germinal to its conceptual evolution: “Both the yearnings of Malevich’s Slavic soul and the deductions of Duchamp’s rationalist mind led both men ultimately to reject and exclude from their work many of the most cherished premises of Western art in favor of an art stripped to its bare, irreducible minimum” (Rose 1968:277). This passage denotes the two primary components of the reductivist trend, the emotional yearning for primary elements of expression and the intellectual drive to alter the course of Western art, which were integral in the development of “primitivism” in modern art.

The intellectual component of this trend, called “Modernist reduction” by Clement Greenberg, eventually evolved into a major movement during the 1960’s in which symmetry surfaced as a dominant feature. This movement, composed of field painters, sculptors, and environmentalists, came to be called minimal art (Rose 1968:274-279). Minimal art stressed holistic symmetry, where the concept, image, and space all reduce to a singular entity.

The accelerating momentum of the reductivist trend, combined with the intense rejection of abstract expressionist

principles, provided the motivating force that led to the emergence of systemic symmetry and the logical unfolding of color field painting. A number of New York painters, such as Stella, Johns, and Noland, were dissatisfied with the overemphasis on gesturalism and all that its application implied. Lawrence Alloway (1968:39-40) described some of these artists' innovations, which were in opposition to abstract expressionist principles as "the mounting interest in symmetrical as opposed to amorphous formats, clear color as opposed to dirty, hard edges as opposed to dragged ones." In a sense, systemic symmetry was born out of amorphic asymmetry. This occurred in conjunction with the increased concern for the reduction of imagery to fundamental forms.

The major type of systemic symmetry identified by Alloway (1968:56-58) is one-image, which generally refers to paintings which consist of a single field of color. This general definition includes paintings based on modules, grids that are contained in a rectangle or expand beyond their edges. In addition, it encompasses paintings that are freer but end up with a reduced number of colors. All of these pictorial conditions stress dynamic, holistic symmetry:

The field and the module (with its serial potential as an extendable grid) have in common a level of organization that precludes breaking the system. This organization does not function as the invisible servicing of the work of art, but is the visible skin. It is not, that is to say, an underlying composition, but a factual display. In all these works, the end-state of the painting is known prior to completion (unlike the theory of Abstract Expressionism). This does not exclude empirical modifications of a work in progress, but it does focus them within a system. A system is an organized whole, the parts of which demonstrate some regularities (Alloway 1968:56-58).

This passage describes the link between holistic symmetry and systemic art. The characteristics of holistic symmetry are systemic, synthetic, and summative. Holistic symmetry reduces compositional parts and integrates them into summative wholes. This is often achieved by the addition of repetitious parts, which together form all-over patterns. Summative wholes and all-over patterns possess the qualities of simplicity, clarity, directness, and immediacy.

Newman, an artist whose works are exemplary of early one-image painting, offers two distinct variations of this concept. One is the overt or obvious emphasis on the center of the picture plane, and the other consists of a subtle system of proportions. The first variation is illustrated by his painting, *Onement I* (1948). In this work, a single band is centrally positioned:

The thick paint is irregular enough to diffuse the symmetry of the line and make it impossible to speak of division. The band is more like a zipper in its function of joining them. . . . The unity of the piece is stressed, too, by the fact that the band goes from edge to edge of the canvas, with no internal veering or stops. The image is the result of all the painting, not of its parts (Alloway 1970-71:30).

Specific examples of other one-image paintings are by artists who turned away from gestural art, as well as those who never entered it. The former are represented by Pollock's drips of 1951, Leon Smith's stitching patterns of 1954, Liberman's hard edges of 1950, and Noland's chevrons of 1960. The latter group includes Stella's symmetrical black paintings of 1958-59, John's targets of 1955, Kelly's panels of 1952-53, Newman's *Onement* series of 1948, Rothko's dominant colors of 1950s, and Reinhardt's crosses from 1953.

Other terms besides one-image have also been used to signify the singularity of the structure and the object. They are "unitary fields," "close-valued colors," "non-relational," "one-color," "oneness," "literalism," and "all-over pattern." All of these terms indicate a holistic configuration and represent variations of systemic symmetry.

Symmetrical, systemic painting served as a nucleus of avant-garde energy around which numerous artists with differing theories and techniques revolved. The urgency to combine field and modular imagery with holistic configurations, in addition to the discovered compatibility of color and symmetry, inspired many artists to undertake a thorough investigation of the pictorial possibilities of the color field. This specialized investigation unfolded in a very logical fashion through its culmination in the late 1960s. Since these works, which stressed color within a field context, were structurally sound and expressively clear, Walter

Darby Bannard (1970:40) claimed they were the best and most significant paintings during that decade. Others called this period of color research "The Great Decade of American Abstraction" (Carmean 1974).

The tradition of abstract art and the use of color as subject matter to convey interrelatedness and holistic essence was already in existence before Kandinsky, Malevich, Mondrian, and Pollock came on the scene in the first half of the 20th-century. Abstract art and holistic concepts already existed among American Indians, and one of the highest and most extensive developments of abstract art was found in Navajo weaving.

The use of color to convey abstract and holistic essences and themes is found in many aspects of Navajo language, art and culture, not just in Navajo weaving. The concept of holistic essence—*hózhó*—is not new to the Navajo. It permeates every aspect of the culture and its maintenance, celebration or restoration is the goal of all ritual action. The concept of *hózhó* is too abstract and too contextual to express in simple and autonomous imagery; it must be conveyed in interactive, symmetrical, and holistic compositions that are presented in one-image formats:

In a sense, contemporary artists have led us to a new way of seeing these blankets, one which would not have been readily accessible thirty or more years ago. That a great many of these artists have a serious interest in Navajo blankets is demonstrated by their personal collections. The premises of "abstract art" are no longer controversial, but neither are they deeply rooted in our society. Abstraction was not a special "artist's" vocabulary for the Navajo who wove these blankets; rather, it was a valid means of personal expression in their society. The Navajo weaver dealt with many of the same concerns as contemporary artists, but in the more integral Navajo culture these concerns were central and shared by everyone (Kahlenberg and Berlant 1972:26-28).

Navajo weavers, however, have never totally relied on abstraction and color as their visual means of expression. They have also relied extensively on a variety of geometric patterns that are based on cultural motifs. The color field painters also discovered that, in order to get the colors to interact freely across the picture plane, they had to use simple and archetypal geometric imagery—much like that used by Navajo weavers, though not as extensive or elaborate.

The concept of openness has proven to be a basic premise in color field painting. By tracing the evolution of color field painting from Pollock to Louis to Olitski, Bannard (1972:66) demonstrates that the basis of continuity of these artists' work "has been openness, space between." In Pollock's art, openness refers to the "open linear tangle" of drips of paint, which creates a "uniform, symmetrical density." Louis utilized this idea and applied it to his *Veils* and his *Florals*. Here, the holistic configuration consisted of "forms within a single form," centrally located. In Louis's *Unfurleds* series, the center is vacant, banked with streamers of pure hue on opposite ends of a large horizontal canvas. In this series, openness consisted of dispersing rather than converging pictorial elements.

For colors to expand into a viable continuous surface, there must be a limited number of interruptions and contrasts. An all-over structure, which supersedes the tendency of the surface to be divided and cut into individual pieces by line, is necessary to allow for dominant, outward flowing monochrome imagery.

The effect of openness in color field painting allows hue to spread visually over huge, expansive areas, thereby creating a continuous surface. This continuous surface is anchored to the picture plane by colored images positioned on or near the edges, as exemplified by the paintings of Louis, Noland, and Olitski.

Color field as an important type of dynamic symmetry and holistic asymmetry represents the most thorough investigation of the pictorial possibilities of color to date. This concentrated effort to discover the structural properties of color and achieve its pictorial potential affirm the association of color field painting with holistic symmetry.

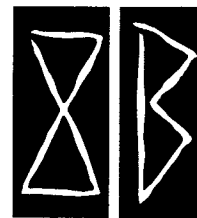
As we have seen from the previous discussion of color symmetry, Navajo artists were working on these properties and possibilities with color long before the notion became popularized in color field painting. Holism and symmetry have always been basic premises of Navajo art because the culture has such a powerful and pervasive emphasis on holism, not the least of which is conveyed by *hózhó*.

Dynamic symmetry and holistic asymmetry are not just the sum of the parts but the compositional effect of the summative image. Dynamic symmetry and holistic asymmetry are, then,

aesthetic form in their most vital and their most significant manifestation, expressing an aesthetic and subjective comprehension of the universe and its basic features. In the next chapter, we will see how this comprehension finds expression in the technical comprehension of the universe found in modern science.

## Chapter Five

# Dynamic Symmetry and Holistic Asymmetry in Modern Science



When you have learned how to look for symmetry, and how to describe the symmetry which you find, you will constantly be discovering it in the most unexpected places, and observing more and more the role it plays throughout nature and art (Holden and Singer in Young 1965:232).

When people first think of symmetry, they usually think of perfect mirror imagery or what is sometimes called bilateral symmetry. There is also up and down symmetry based on a horizontal axis. When vertical and horizontal symmetry occur in the same composition, the result is what we call quadrilateral symmetry. The important point with regard to quadrilateral symmetry is that it has two axes, which together provide the composition with a center. Arnheim (1982) has written eloquently and extensively on the power of the center:

Cosmically we find that matter organizes around centers, which are often marked by a dominant mass. Such systems come about wherever their neighbors allow them sufficient freedom. In the vastness of astronomical space the rotating galaxies and the smaller solar or planetary systems are free to create such concentric patterns, and in the microscopic realm so are the atoms with their electrons circling around a nucleus. Even in the crowded world of our direct experience, inorganic and organic matter occasionally has enough freedom to follow its inclination to form symmetrical structures—flowers, snowflakes, floating and flying creatures, mammalian bodies—shaped around a central point, a central axis, or at least a central plane. The human mind also invents centric shapes, and our bodies perform centric dances unless