# Stony Brook University

**The Kinesthetic Basis of Landscape Art**

A Dissertation Presented

by

**Susan Pashman**

to

The Graduate School

in Partial Fulfillment of the

Requirements

for the Degree of

**Doctor of Philosophy**

in

**Doctoral Program in Philosophy**

Stony Brook University

**December 2013**

**Stony Brook University**

The Graduate School

**Susan Pashman**

We, the dissertation committee for the above candidate for the

Doctor of Philosophy degree, hereby recommend

acceptance of this dissertation.

Dr. Edward Casey, Professor, Philosophy

Dr. Robert Crease, Professor, Philosophy

Dr. Harvey Cormier, Professor, Philosophy

Dr. Robin Veder**,** Associate Professor of Humanities and Art History/Visual Culture, Pennsylvania State University

This dissertation is accepted by the Graduate School

Charles Taber
Dean of the Graduate School

ABSTRACT

**The Kinesthetic Basis of Landscape Art**

by

**Susan Pashman**

**Doctor of Philosophy**

in

**Doctoral Program in Philosophy**

Stony Brook University

2013

The failure of philosophical concepts of the natural environment and of the works of landscape art structured from it to fully describe the perceptual experience of landscape, like the failure of site plans to adequately represent such works, can be attributed to the ocularcentricity that has long infected the notion of landscape. When "kinesthesia" replaces "vision" as the essential perception in the landscape experience, landscape is both conceived and represented more adequately.

I define landscape art as "an expressive art that shapes the experience of moving through immersive volume as a structured sequence of both kinesthetic and visual perceptions to produce a continuum of specific feeling."

The macro-scale bodily movements required to traverse a landscape, as well as the retinal movements involved in scanning voluminal space, produce kinesthetic perceptions. Contemporary neuroscience specifies "emotion" as the unconscious sensation of self-movement, and "feeling" as the conscious awareness of emotion. Thus kinesthesia is the root of the felt qualities of a walker's movements through a work of landscape art.

Landscape art is a *Gesamtkunstwerk* that embraces elements of painting, sculpture, architecture, earthworks, cinema and dance. These arts, too, rely fundamentally upon kinesthesia for their expressivity. Dance comes closest to the landscape experience, but differs from it in that the audience for dance accesses it visually, whereas the walker in a landscape experiences kinesthesia directly, as the dancer herself does. In landscape, the work of art induces kinesthetic responses—and thus, feeling—*directly* in the walker's body.

Understanding the central role of kinesthesia as the source of feeling in all the arts clarifies the aesthetic concept of "congruence," permitting a fruitful re-assessment of such theories of expression as Arnheim's Gestalt aesthetics, Wolfflin's theory of sympathetic modeling, and the theory of art as "symbol" that considers expression as involving "forms of feeling." Most significantly, kinesthesia supplies to Dewey's theory of art as experience a concrete concept of "resonance" that empirically grounds, and thus completes, it.

Re-casting artistic expression as essentially kinesthetic yields an understanding of landscape art as paradigmatic of artistic expression generally, and so admits landscape art to the canon of philosophical aesthetics.

## Table of Contents

## List of Figures

## Preface

Aesthetics emerged as a field of philosophical inquiry in the mid-eighteenth century, the very moment when landscape and the emotions it elicits became the subject of much critical debate, particularly in England. Philosophical aesthetics thus grew up side by side with the interest in landscape. Edmund Burke and Immanuel Kant investigated the bases of feelings for both the natural and the man-made environment, while garden writers concerned themselves with "Beauty" in the created landscape. However, philosophers eventually lost interest in the beauties of nature and focused exclusively on the fine arts, among which they did not include an art of landscape.

The notion that the created landscape can function as a work of expressive art, formed in a distinct artistic medium, still eludes both garden writers and philosophers. For philosophers, the created landscape now occupies a position in philosophy akin to that formerly occupied by cinema: It is a phenomenon so complex and multi-layered both in its production and in its reception that philosophers are reluctant to start unraveling its mysteries. Landscape practice is regarded as a practical, rather than a fine, art, a craft in which technical skill predominates over expressive intent.

It is this lacuna in both philosophical and garden discourse that this dissertation sets out to redress in the hope of both opening a new branch of philosophical aesthetics and subjecting the theory of landscape to the rigors of philosophical method.

## Acknowledgments

This dissertation represents the most recent development in what has been more than half a century of pondering an enormous question: How is it that the mute, non-sentient world investigated by the physical sciences is also the world we enjoy aesthetically when it arrives in experience as emotion? For encouragement in my pursuit of answers to this question there are many I have to thank. My gratitude reaches all the way back to my high school Physics teacher at The Bronx High School of Science, Abraham Baumel, who was so praiseful of a term paper on "Psychophysics." The Graduate Faculty in Philosophy at Columbia University lured me away from Philosophy of Science and introduced me to philosophical aesthetics, in particular, to the work of John Dewey, whose insights into aesthetics have enriched my life ever since. Professor John Furlong at Harvard's Landscape Institute shared my admiration for the work of Rudolf Arnheim and encouraged me with suggestions to explore the works of Appleton, Pallasmaa, and others; Professor John Beardsley at Harvard's Graduate School of Design brought countless other writers to my attention and encouraged me to continue writing about landscape from a philosophical point of view. The support and encouragement I received as a master's student at The Inchbald School of Design, The University of Wales, stiffened my resolve to pursue this subject as a doctoral dissertation. My most profound gratitude extends to Professor Edward Casey in the Philosophy Department at Stony Brook University who, in a show of extraordinary faith and confidence, agreed to guide me through this dissertation, giving me the rare opportunity to advance my life's work in an academic setting, and contributing provocative suggestions for readings, especially on the subject of dance; Professor Casey's lapidary editing efforts have surely made this a more fluent work. Professor Robert Crease also has my gratitude for rigorously refining my understanding of Sheets-Johnstone's work on dance aesthetics, thus contributing greatly to the fourth chapter of this dissertation. Finally, to my husband, Jack, and to whatever unearthly beneficence made it possible for a seventy year-old woman to complete a doctoral dissertation in a subject she has long and deeply loved, I say, "thank you."

# CHAPTER ONE:
# THE DUAL-FACETED PROBLEM OF LANDSCAPE

Thinking about landscape was plagued from its beginnings by a set of misconceptions that, although understandable given the time in which they arose, proved fatal to developing a realistic and fruitful theory. This, in turn, conditioned the ways landscape was represented, and created severe restrictions on the ways landscapes could be imagined and subsequently built. The reverse is also true. A deeply-entrenched methodology for imagining and representing landscape reinforced the mistaken notions of what, exactly, landscape art is. The critical flaw in both the concept of landscape and the means deployed to represent it lay in not attending sufficiently to the way the body encounters landscape in actual experience.

Both philosophical aestheticians and the garden critics of eighteenth century England contributed to the mistaken concept of landscape that continues to infect discourse about landscape today. The mistake derives from what David Michael Levin (2003) terms "ocularcentrism," the tendency in Western thinking to privilege vision as the source of knowledge about what is real. Landscape practitioners reinforced this error with the use of aerial views and other "optical" modes of representation. Only in recent years are writers and landscape artists beginning to develop a more experientially apt—and therefore, productive—way of thinking about landscape.

## Traditional Concepts of Landscape

### The Traditional Concept of Landscape in Philosophical Aesthetics

Philosophical aesthetics began with a search for an explanation of the universality of aesthetic preferences, for the fundamental principles from which

aesthetic judgments arise. Edmund Burke (1757), believing he had noticed universal human responses to the encounters he denominated Beautiful and Sublime, looked for an explanation in human psychology. He found what he was seeking in the instinct for survival, the innate drive for nurturance and bodily comfort. Burke viewed this instinct as the source of the pleasure we take in soft lines, textures, shapes, and colors—qualities associated with feminine, maternal care—the qualities we call "Beautiful." It also explains the pleasure we find in tempting, and then triumphing over, death; testing our ability to survive and finding reassurance that we can conquer danger is a variant of the way the instinct for survival plays out and accounts, Burke argued, for the appeal of the "Sublime."

On the Continent, Immanuel Kant (1790) argued that universal aesthetic judgments could be explained by pre-supposing an affinity of the human mind for rational formal structures. Judgments of Taste, Kant decided, were universal, necessary, disinterested and based on a sense of "purposefulness without purpose," a perceived rightness of form only accessible to creatures possessed of both reason and desire. The experience of aesthetic beauty is thus quintessentially human.

Kant actually made reference in passing to landscape gardening in *Section 51, Of The Division Of the Arts* when he divided the "formative arts" into painting and "the plastic," and then divided painting into "the art of the beautiful depicting of nature and that of the beautiful arrangement of its products. The first is painting proper, the second is the art of landscape gardening." (Hofstadter and Kuhn, 325) Both landscapes and paintings of them, Kant claimed, are aesthetically valuable for pure contemplation of their forms.

Despite their radically different approaches—Burke from empirical observation and a psychology of association, and Kant from rationalist assumptions of innate aesthetic preferences—both philosophers proceeded on the assumption that the natural environment, considered aesthetically, is essentially a *visual* object and that it is solely its *visual* aspects that are the sources of aesthetic pleasure.

Kant was emphatic about this in the case of the intentionally formed landscape:

> (Landscape gardening) is nothing else than the ornamentation of the soil with a variety of those things (grasses, flowers, shrubs, trees, even ponds, hillocks, and dells) which nature presents to an observer, only arranged differently and in conformity with certain ideas. But, again, the beautiful arrangement of corporeal things is *only apparent to the eye*, like painting; the sense of touch cannot supply any intuitive presentation of such a form. (325-26) (Italics added.)

This same point is repeated in a note: "…landscape gardening may be regarded as a species of the art of painting …" (325, n.12)

The assumption that the aesthetic value of a landscape lay entirely in its visual characteristics derives from a philosophical tradition that long privileged the visual, a tradition traceable to the early Greeks. The powerfully influential Platonic tradition in aesthetics began with an identification of value with light, and of knowing with seeing. Despite his rigorous skepticism directed at the bodily senses, *clarity of vision* is the proper metaphor for the object of Descartes' quest for intellectual certainty. Reason is, for Enlightenment philosophers generally, an intuitive, innate *light*, and its achievement of knowledge is a perfect seeing. The totalizing, theorizing, Apollinian "Cyclops eye" of aesthetic Socratism, Nietzsche (1872) understood, sees all and truly grasps nothing. But it is the eye, Nietzsche pointed out, that has served Western philosophy ever since, as its fundamental presupposition, "an eye outside time and history," (Levin, 2003. p.4) "an eye that no living being can imagine, an eye required to have no direction, to abrogate its active and interpretive powers" (Nietzsche, 1956, 255, note 12).

**The Traditional Concept of Landscape in Eighteenth Century Garden Writing**

At the same time as Kant and Burke were considering the aesthetic value of the *natural* environment, a flurry of critical essays were produced in England that contributed to a heated debate about what the *formed* landscape ought to be. Having come through a period when the great estates of England were modeled on the perfect geometry of the gardens of France and the jewel-like, highly- ornamented gardens of Holland, England was ready to define a distinctively English landscape style. When, in 1794, Uvedale Price published an essay in the Spectator denouncing the fussy,

Continental-style gardens that were taking over the English countryside, a new, distinctively English, movement was launched. Joseph Addison, Alexander Pope and Richard Steele weighed in with further denunciations of what they regarded as the ruination of the natural English homeland by aesthetic incursions from the Continent. A school calling itself the Landscape Gardening movement set about tearing up existing landscapes and replacing them with carefully constructed—but *natural-looking*—free-form lakes, rolling lawns and casually grouped clusters of trees and shrubs.

The Landscape Gardeners--William Kent, Charles Bridgeman, Capability Brown and others--were hired by members of the educated class to construct estate landscapes based upon scenes they had encountered on tour in Italy; landscape paintings by Claude Lorrain and Nicolas Poussin, and by Dutch Renaissance painters were also held up as models for the freer, more natural look that was suddenly in style. French and Italian style landscapes that featured rigidly-structured arrangements of geometric forms were replaced with serpentine paths from which one could spot "eye-catchers:" "pictures" arranged to be seen from specific locations along those paths. In the case of the landscape at Stourhead, (Figure 1) the points from which the best views of its Gothic ruins and Palladian monuments could be had were actually indicated along the path laid out around a curviform artificial lake.

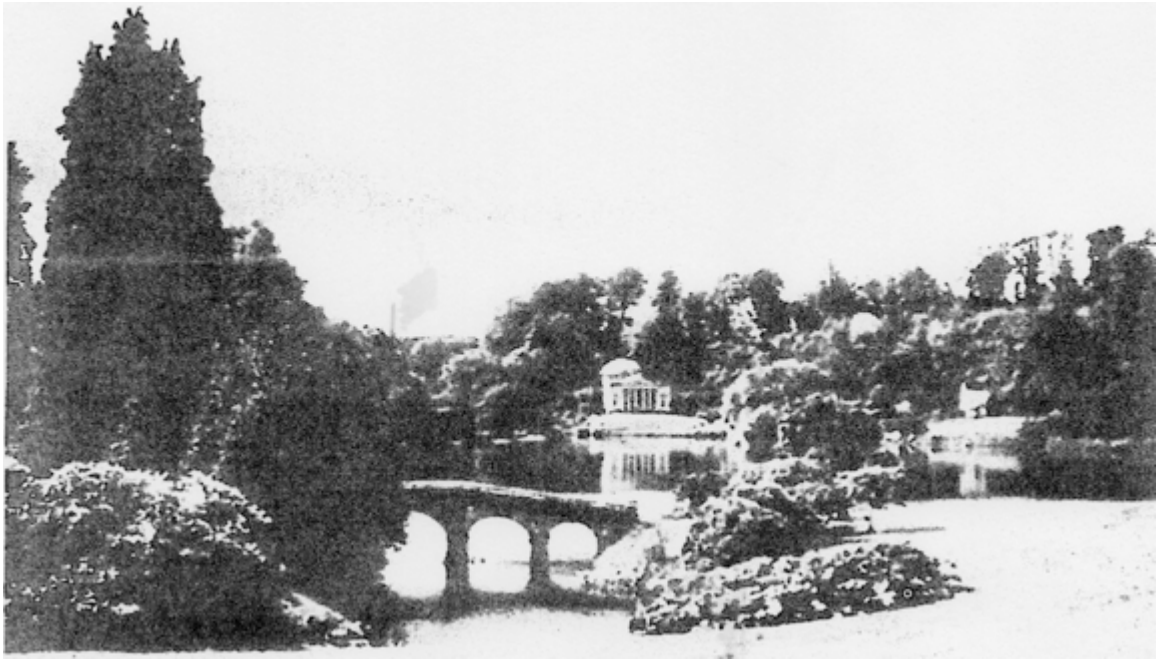

Figure 1: “Eye-catcher” from a viewing point at Stourhead. http://farm1.staticflickr.com/56/192706164_0c92d66b21_o.jpg

As the advocates of Landscape Gardening were not only fierce devotees of gardening, but also well-spoken, widely-published writers, much persuasive argument emerged during this period advocating for the aesthetic value of the “Picturesque,” a style which implicitly equated landscape with landscape paintings, much as Kant had in his philosophical aesthetics. The emergence of a body of written work that took the aesthetic value of a landscape to reside in its resemblance to paintings reinforced the philosophers’ privileging of the visual in *their* considerations of landscape. In both cases, the notion of landscape as a flat, static visual surface—and of the landscape experience as fundamentally *visual*—became locked into the theoretical framework in which all discourse about landscape was to occur.

## Traditional Modes of Representing Landscape

The Western preference for geometric clarity and quantifiable certitude infected not only efforts to *conceive* landscape, but the accepted modes of *representing* it as well. The aerial view employed as a site plan conveys the artist's intentions from an improbable—but optically "clearest"—viewpoint. Landscapes created as far back as sixteenth century Rome were built in accordance with site plans based on what a bird flying overhead would see. These representations portrayed the landscape as static, and from a point of view that could never be achieved in human experience. Not only did such plans reveal little of what would actually be experienced in the landscapes they represented, in many cases they in fact *falsified* that experience. At best, the site plan served as an accurate construction document, readable by engineers and workmen concerned with measurements of distances, shapes, and the quantity and placement of plant materials to be used. To this day, clients of landscape artists who employ site plans are hard put to understand just what the artist is proposing and what, in actual experience, the landscapes they are commissioning will be like.

A consideration of two classic site plans and the extent to which they accurately conveyed the experience of the landscapes they represented will demonstrate how the flat, static, optical representation of landscape distorts the way a landscape actually functions in lived experience.

With a tightly organized set of squares and rectangles, snugly enclosed and neatly structured along the dominating central axis, the site plan for Vaux-le-Vicomte

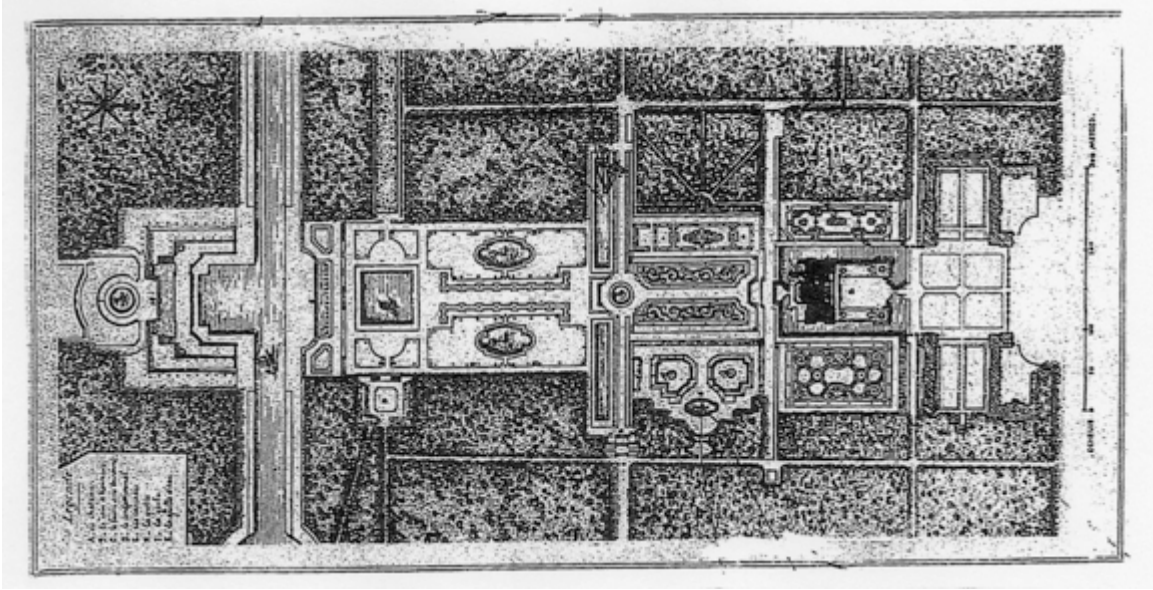

Figure 2: Site plan of Vaux-le-Vicomte. Norman T. Newton, *Design On The Land: The Development of Landscape Architecture,* Cambridge, 1971 (166).[1]

(Figure 2) built in 1658 by the French landscape genius, Andre LeNôtre, demonstrates how bilateral symmetry creates a sense of serenity and peace. This structure perfectly serves the Renaissance demand for balance and order by echoing the balance of the human body which itself is symmetrically ordered along a central axis. The composition is closed and complete, leaving nothing disturbingly "unknown."

In LeNôtre's site plan, the influence of Descartes' esteem for Euclidean geometry is evident; the plan pays homage to geometry's flawless logic, and to the Rationalist desire for clarity. Tightly clipped hedge walls, rectilinear *allées,* treillage, retaining walls and other structures keep the eye steadily trained along the sight line. The flat geometry of the *parterres broderies,* situated to be viewed from the terraces above, are accurately conveyed. Broad, shallow staircases extend the main building's

[1] Many of the illustrations in this dissertation are found in Norman T. Newton's *Design On The Land: The Development of Landscape Architecture*, a rigorous history of landscape architecture published in 1971 by The Belknap Press of Harvard University in Cambridge, Massachusetts. None of the illustrations in that book are dated; however, further information about each illustration is available in the Illustration Credits that begin in that book on page 693.

base horizontally, promoting a sense of repose, serenity and dominion over Nature's wildness.

In the lived experience of his works, however, LeNôtre's "Grand Manner" combined the Renaissance impulse for Rationalism with a completely opposite motive in which the natural world is presented as overwhelming in scale, infinitely complex in detail, and fundamentally unknowable except through emotion or intuition. This counter-rationalist style presents the landscape as unsettled, yearning, ever striving toward an infinite beyond. Landscape can convey this world view with a highly emotive play of complex dynamic tensions: lots of gushing water, axes thrusting dramatically outward, infinite vistas, and exaggerated scale. The intent in such landscapes is to mock and frustrate reason, utilizing tricks and surprises that provoke the excessive, untutored appetites and create unexpected and unsettling outcomes.

As Edward Casey describes it:

> A close consideration of the formal French gardens of the latter half of the seventeenth century reveals a consistent pattern of repressed but potent counter-formalism, even a covert collusion with wilderness. The simplicity of the basic layout of a garden often masks a complexity of construction rivaling nature itself in endless proliferation and seeming unpredictability. (1993, 161)

It is this counter-rationalist impulse that the visitor to Vaux-le-Vicomte in fact experiences as LeNôtre's art employs geometry and the laws of optics to *de*-stabilize the visitor and create anxiety. Due to variations in the vertical plane, changes in the viewer's position as he travels through the landscape create sudden and exaggerated visual changes; the visitor finds something invisible from one point appear magically at another; sizes and shapes shift dramatically. LeNôtre alternated wide and narrow vistas so that the visitor's view is alternately stabilized and then heart-stoppingly de-stabilized. Vaux delights with illusion and surprise precisely because the experience of walking through it is *not* what the aerial site plan would lead one to expect.

Nonetheless, site plans work best when utilized to represent geometric gardens that can be laid out on flat terrain such as is found in France; viewed from a raised veranda or seen from a large window, these gardens fairly well resemble the site plans

employed to represent them. The Italian landscape artists from whom the French learned to use site plans, however, had a more difficult time representing the actual experience their landscapes would produce. The works of the Italian landscape artists were destined to be built into the steep, rocky hills surrounding Rome and Florence. The flat representational device not only failed to adequately represent the Italian landscape experience, it often severely falsified that experience and fatefully restricted the imaginations of the artists who employed them.

The Villa Lante at Bagnaia, Italy (Figure 3) is a quintessential Italian *Cinquecento* villa, built into a rugged mountainside northeast of Rome, an area favored for summer residences by the nobility and clergy of the Italian Renaissance. In its site plan, we find an expression of classical, secularist values embodying the Humanist view of Man, a creature of nature who is dominant within it. Rudolf Arnheim (1966) relates the structure of such a plan to its Humanist source:

> (A) style of gardening in which man is not enveloped and absorbed by nature but is canopied and framed by subservient natural objects, which, like guards of honor, line the paths he treads, and adopt the patently man-made shapes of rectangles and cubes, spheres and cones, walls and arches. The site plan gives us a firm, secure geometry, a lot of "squaring off" as the human will is imposed on the wayward and sloping land. (126)

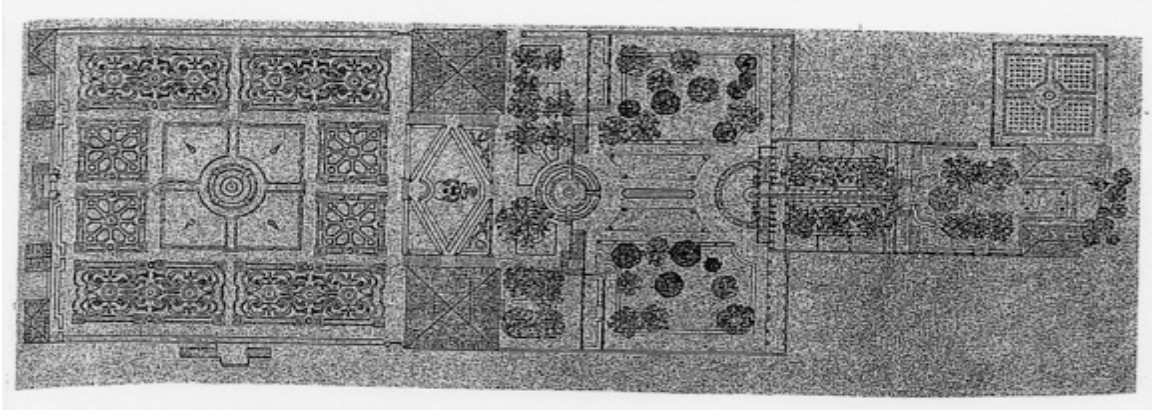

Figure 3: Site plan for Villa Lante, Norman T. Newton, *Design On The Land: The Development of Landscape Architecture,* Cambridge, 1971 (100).

Arnheim describes how we might expect to feel in such a place:

> It replaces the diffuse mood and aimless roaming induced by homogeneous expanses …and it defines the visitor's position and progression locally, thereby supplying him with …orientation in space. (1966, 131)

But this site plan is not an accurate portrayal of the landscape experience it represents. The visitor to Villa Lante soon discovers that what seemed a reassuringly balanced layout turns out to be a challenge. The center spine is everywhere blocked—either by plantings or by rushing water—forcing the visitor to choose a path along one side or the other, and thus to continually experience the landscape at a disturbingly unbalanced diagonal. Even more destabilizing, there is no clear home: The identical twin *casini* supply no clue to either the visitor or the resident as to where the garden's center of life is located. The symmetry promised by the two-dimensional site plan in no way characterizes actual experience. Views from within the landscape carry more dynamic tension than we would expect from the plan, a dynamism intensified by the constant visual and aural presence of cascades of tumbling water. Although Villa Lante's site plan is a model of classical Renaissance landscape, the experience of the landscape itself turns out to be what Heinrich Wolfflin (1888) would call Baroque.

The remarkable differences between site plans and the actual experiences of the landscapes they represent should have been obvious for centuries, but the aerial view has a long tradition as representing "objective" truth, the world as clearly seen, the world disclosed by rational science. Site plans are excellent as engineering documents to guide construction of landscapes when the artist will not be directing the building process on site but, as representations of what the artist's client might expect to experience when the work is done, site plans offer generally poor guidance. Until more sophisticated tools for representation could be developed, however, the site plan was the major means of representing landscape.

A century after the French geometric style reached its peak, the English Picturesque style came into vogue. At that point, the aerial view lost even more of its

relevance to experience. As the features of the Picturesque landscape were intended to mimic what was portrayed in landscape paintings, drawings that represented those features vertically—frontally, in elevation-- seemed a suitable replacement for the site plan. The "view" offered was from the vantage point of someone standing still, staring in the direction of the eye-catching "scene" to be built within the landscape.

Humphrey Repton gained great popularity as a Landscape Gardener when he devised his famous Red Books, series of drawings of proposed "views" from particular points in the landscape. His books juxtaposed drawings of a particular scene before his "improvements" were made with drawings of how the scene would look after his work was completed. An entire book of such drawings afforded the client a sort of slide show of what he could expect to see—from specific "viewing points"—on a stroll through his estate.

Of course, the Red Books, like site plans, offered purely *visual* representations of the landscape experience; Repton's drawings employed the principles of perspective developed in the Renaissance to create "realistic" representations, views that fixed the artist's focal point for the viewer. As static representations, the drawings could only convey a stroll through the landscape by offering a large number of "views" that could be seen as the client turned the book's pages. The books could not, of course, represent the aesthetic impact of the locomotion that would take the "viewer" from one point to the next. Nor could they convey the landscape's voluminal depth other than as a projection upon a flat—retinal—surface.

If his intent was to duplicate an experience akin to walking through a gallery of landscape paintings, the method devised by Repton was successful; however, if what was sought was an accurate representation of the experience to be had traveling through the landscape—perambulating about the "naturally" curved lake, crossing the rustic-looking bridge, approaching the imitation Gothic ruin, or coming suddenly upon the Palladian monument—the representations in Repton's books fell terribly short.

Unlike the artists who created the French and Italian site plans, Repton and other Landscape Garden "improvers" tended to supervise the building of their landscapes *on site*. This enabled them to proceed organically, as painters or sculptors or

choreographers—artists who work "in" their mediums—do, experimenting and evaluating their ideas as they developed them. The "improvers" could, therefore, more easily dispense with the site plan that was essentially intended for construction workers and engineers.

This difference in practice is significant. A landscape improver, working on site, could pause in the course of building the landscape and consider the effects of his efforts *over time,* time in which distance was traversed by the artist as he worked and made his adjustments. The elevation sketches Repton produced of selected views left much of the connecting landscape space between the views ambiguous; how far apart various views would actually occur would have to be determined *in situ*, which is to say over time and *within* a three-dimensional space. This on-site method of organically developing the landscape from within three–dimensional space and over real time implicitly took account of both depth and movement through the landscape over time. With the artist himself moving through the work as it developed, and making adjustments that took into account his own changes in position, the course that a visitor traveling though the landscape in time—his experience of volume and depth, as well as his experience of movement--was thus built into the work.

As James Corner (1992) notes in assessing the core problem of representing landscape:

> The difficulty in landscape architecture… is that the actual work of building and construction is usually done by people other than the landscape architect. The instrumentality of modern construction procedures leaves little room for emotive or tactile involvement. … [T]he landscape architect rarely has the opportunity to significantly touch and mould the landscape medium as it plays out in response to intervention. Although landscapists ultimately make places out of plants, earth, water, stone and light, they are caught at a peculiar distance from these same elements, working instead with a completely different medium, an intermediary and translatory medium that we call drawing. (145)

In representation, as in the conception and perception of landscape, the problem, Corner says, comes down to "distance." In landscape art, the process of making the work itself

involves an enormous perceptual gap between the medium in which an artistic idea is developed and the medium in which it will eventually come to completion. A landscape artist working at a drafting table is at a significant remove not only from the actual site where the work will eventually be built, but the voluminal, immersive nature of the work to be built is nowhere manifest in the flat, representational drawing.

The change wrought by the Landscape Gardeners or "improvers" in the method of producing landscapes resulted in the creation of works that freed, rather than suppressed, the essential nature of landscapes. It is, however, unlikely that the Landscape Gardeners intended to take the unique characteristics of the landscape experience into account when they adopted this way of working, or that they consciously intended to create anything but flat, visual impressions that could be subjectively framed to yield desirable "pictures." Although Repton's books may seem, in retrospect, an attempt to convey the experience of travel through a landscape, they actually won acclaim for the "before and after" views they provided. In the representational practices of the Landscape Gardening school, no explicit attempt was made either to render the three-dimensional character of a landscape or to convey the feeling of moving through it; it was the Picturesque views that were important, not the locomotion that carried the viewer from one scene to another. Yet, the influence of the Picturesque concept and of the improvers' practical techniques was enormous; the Picturesque ideal spread throughout the Continent in both private gardens and public parks, and eventually triumphed in America's public parks with the work of Frederick Law Olmsted.

**Contemporary Efforts To Resolve The Conceptual Problem**

Writers and practitioners at work in the landscape field today struggle with an idea of landscape that simply does not capture the experience of it; the language and concepts available to them embed representational models that cannot adequately convey the lived feeling of the landscape represented. Contemporary writers, only a few of whom are philosophers, recognize that the roots of their difficulties are deeply rooted in a way of thinking about Man and his world that neglects some fundamental aspects of

the landscape experience. Are these aspects simply in-utterable, as some have suggested? Does the flaw lie in our concept of Man or in our concept of the landscape, our way of conceiving what's out there or our understanding of how we perceive it? Or is it that flat, visual "pictures" are the best we can do by way of representing landscape? After all, it might be argued, a representation is not supposed to be the thing it represents, but merely a symbol of it, something that can stir the human imagination to make an appropriate leap to what is represented. Should we expect more from our concepts and modes of representation of landscape and, if so, where should we seek for a new concept and new modes of representation?

It was 1975 when the English geographer, Jay Appleton, attempted to revive philosophical debate about the aesthetic principles governing our experience of the natural environment. Posing the question, "What do we like in landscape, and why do we like it?" Appleton (1975) replied that what appeals to us in both the natural environment *and* in paintings of it is a combination of "Prospect" and "Refuge," a wide open savannah on which we can search for food coupled with shelter from enemies. Tracking Konrad Lorenz's Darwinian analysis, Appleton argued that we seek out places from which we can "see without being seen." Like Burke, Appleton believed he had discovered a fundamental universal taste and, like Burke, he located its origins in the survival instinct. He enriched Burke's theory with an argument drawn from evolutionary biology: An aesthetic preference for Prospect-and-Refuge has been handed down to surviving generations through a process of natural selection; we are the heirs of a long line of creatures who survived because they found Prospect-and-Refuge appealing.

Like the British landscape writers who preceded him, Appleton drew no distinction between landscapes and paintings of them, using both paintings and photographs (Figure 4) to illustrate the aesthetic appeal of Prospect-and-Refuge. Appleton's innovation was to merge evolutionary biology into his theory of aesthetics; however, neither Prospect nor Refuge was ever, according to his theory, considered as anything but a visual perception. The appeal of a particular landscape lay exclusively in its *visual* appeal.

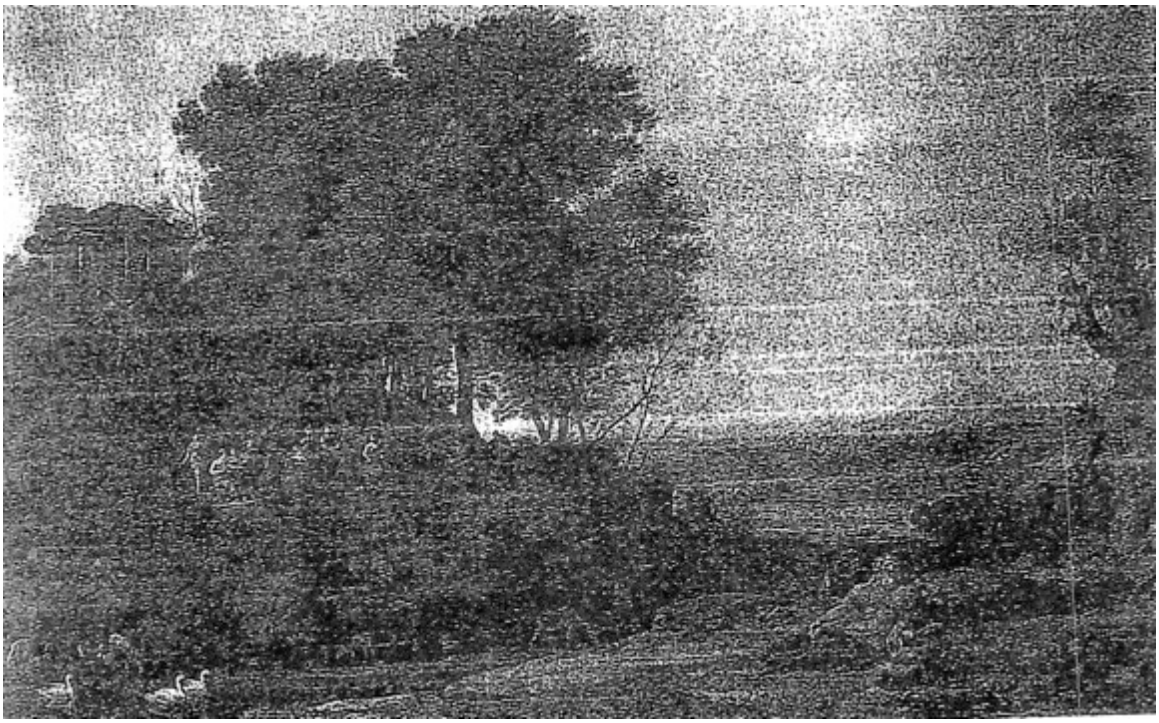

Figure 4: Claude Lorrain's '*Landscape With Apollo and The Muses'* (1680) employed to illustrate Prospect and Refuge. Jay Appleton *The Experience of Landscape,* 1975, 30.

Despite occasional allusions to the opportunity the landscape affords for locomotion, Appleton never considered that locomotion might itself account for a significant part of the essential experience of landscape, or that locomotion ought to be accounted for in establishing a concept of landscape. Although he twice re-worked his book, Appleton never seriously regarded non-visual aspects of landscape or movement through as essential to the experience of it.

The advent of Postmodernism and the acceptance of phenomenological method have brought about a more experience-based approach to how landscape is conceived. Jaundiced views of Cartesian clarity have allowed attention to be paid to the perceptual blur by which three-dimensionality becomes visually apparent and have led to the dethroning of the "optical" which has had such a toxic effect in the development of landscape concepts. Most recent attempts to say what landscape is acknowledge that past efforts neglected three-dimensionality and overlooked the fact that landscape is only fully experienced by traveling through it. Yet, even the most sophisticated of these

attempts falls short, for the most part because they do not follow through on the clues they have uncovered as to how landscape actually enters experience. An examination of some of these attempts will allow us to better frame and clarify how our ideas must be enlarged.

In *Social Formation and Symbolic Landscape*, Denis Cosgrove (1997) traces the origin of the landscape concept as essentially visual to the transition from feudalism to capitalism. The idea of landscape as something to be viewed from a distance without interest in working it derives, he notes, from the Renaissance notion of art as something, like money, whose value endures in transfers from owner to owner; Renaissance art acquired a "detached" value that implied a disengaged outsider. The advent of landscape as art implied that landscape, too, was something purely visual, in the nature of painting, and something that, like a painting, was to be transferred from one distanced owner to another for money.

> (T)hroughout western Europe, the idea of landscape came to denote the artistic and literary representation of the visible world, the scenery (literally that which is *seen*) which is viewed by a spectator. It implied a sensibility…closely connected to a growing dependency on the faculty of sight as the medium through which truth was to be attained…Significant technical innovations for representing this truth included single-point perspective and the invention of aids to sight like the microscope, telescope and camera…. (9)

The developing reliance on mapping contributed, Cosgrove points out, to the flattening of the idea of landscape, adding to the primacy afforded its visual aspects:

> The need to map the spherical earth on a flat plane was met by a geometric grid. The grid's projective geometry made the earth visible and itself became a powerful stimulus to further visions of spatial order. (21)

The earliest Oxford English Dictionary definition of landscape as "a view or prospect of natural inland scenery, such as can be taken in at a glance from one point of view" (16 ) is, Cosgrove points out, a painter's definition. This is, he concludes, a definition from

"the outside," the controlling, spectatorial view of one who is neither immersed in the landscape, nor practically involved as an insider worker of the land:

> The landscape drawn, painted or photographed, placed on a wall or reproduced in a book, is addressed to an individual viewer who responds in a personal way, and can elect to remain before the scene or to turn away. ...(W)e are offered an important element of personal control over the external world. …The insider does not enjoy the privilege of walking away. (18)

Landscape painting thus defined the human relationship with the land as one of individual control (23): Perspective as a mode of representation reduced what had been a collective insider experience to the controlled visual experience of an individual outsider/spectator. Renaissance values that privileged the individual over the collectivity and sought Man's control over wild, disorganized Nature played out in the way landscape came to be conceived; the flat, pictorial view of landscape symbolizes Renaissance values, and those values came to infect and distort the idea of landscape and the modes of representation it employs. The error in our idea of landscape, Cosgrove concludes, is that we have come to conceive it as an "outsider" experience rather than as the "insider" experience it actually is. Here, finally, is an analysis directed at the actual experience of landscape.

Cosgrove diagnoses the underlying motives for the capitalist bourgeoisie's insistence on the pictorial model: The Renaissance idea of landscape, he argues, creates an *illusion of affinity* with the insider's world. Thanks to the development of perspective techniques that can render "realistic" scenes of the land from a distanced, "outsider" point of view, a leisure class that did not work the land as insiders could nevertheless persuade themselves of their insider status because of their clear, distinct, Cartesian knowledge of it. Cosgrove suggests that we will form an adequate concept of landscape once we recognize the need to become, once again, insiders.

Cosgrove is correct in noting that the problem with our idea of landscape is due, in part, to "distancing." He is correct that the surrounding, immersive volume of the landscape experience has somehow been lost, possibly because of leisure class attitudes.

However, his linking "distance," "disinterested contemplation" and the "visual" in a single notion, "outsider-ship," obscures the real distinctions that should be drawn.

The Renaissance notion of "disinterested contemplation" is not, as Cosgrove suggests, necessarily bound to the visual arts. It is, of course, true that vision takes place at a distance; in vision, we do not make immediate contact with the objects of perception (as the foot of a walker makes direct contact with the ground), but it is absurd to think that all visual experience is the subject of "disinterested" or "outsider" contemplation, an indulgence of the leisure class. Nor is all "disinterested"—aesthetic-- contemplation focused on visual experiences.

What Cosgrove identifies as the leisure class practice of disinterested contemplation is what we mean by aesthetic experience generally, the experience in which we deliberately attend to an encounter for the sheer enjoyment of it and apart from any utilitarian interest it may hold for us. Landscape may certainly be an object of such "disinterested" aesthetic contemplation. The fact that images of landscape in paintings are flat and "visual" should not distract us from the fact that, even when we understand landscape as immersive, three-dimensional volume to be traversed, it can nonetheless be an object of contemplation, an aesthetic encounter considered purely for the feelings it elicits. One may regard non-visual aspects of experience in a detached, contemplative fashion.

More important, it is not only the 'interested," utilitarian consideration of landscape that requires an "insider." *All* experience of landscape, including aesthetic appreciation of it, involves immersion in it; it is a three-dimensional volume, and only by traveling *through* it can one fully experience a landscape. What Cosgrove's insider-outsider distinction ignores is that *both* the insider who works the land *and* the leisure-seeking outsider who regards it aesthetically must immerse themselves in it and travel through it in order to experience it at all.

Nor does the degree of control Cosgrove attributes to the "distanced," visual experience lie at the heart of the issue. The landscape visitor enjoys an aesthetic experience that he can give up as easily as he can turn away from a painting; one traveling through the landscape can turn his attention to feelings and thoughts other than

those derived from his experience of the landscape as easily as a visitor to an art gallery can turn away from a painting on the wall.

It is not the fact of standing physically outside a landscape that makes the experience of it "aesthetic:" One can stand outside a garden imagining the best way to fertilize or water it. Cosgrove fails to grasp that being *inside* landscape places the visitor in the *only* position from which landscape can be experienced with the entire body, and *it is the whole body that supplies the perceptions that the formed landscape uniquely structures*. For, as formal order produces our pleasure in music and all the other arts, it is the structuring of various non-visual, whole-body, responses that accounts in large measure for our aesthetic enjoyment of our movement through landscapes.

Thus, while Cosgrove's "insider-outsider" distinction organizes several useful notions for conceiving landscape more fruitfully—distinterestedness, ocularcentricity, and the Renaissance/capitalist enthronement of the individual with his quest for order and control—his distinction ultimately complicates the real problems of understanding and representing landscape as an art form.

The traditional ocularcentric concept of landscape was critically assessed at a 2003 Dumbarton Oaks colloquium that focused on the centrality of movement in the landscape experience. Previous discussion of movement in landscape had considered it, as Appleton did, from the point of view of the traveler on a quest for scenic views, a Picturesque approach. Kevin Lynch's *The Image of the City* (1960), for example, studied what people remembered of their walks. But the experience of locomotion is not an experience of a series of still snapshots; the perception of locomotion involves perceptual *integration*, continuous adjustment to small changes in position that are registered both visually and kinesthetically. The perceptual integration of sensations over time is what creates the sense of continuity, the feeling of a *single, uninterrupted movement*. It is this aspect of the landscape experience that participants in the Dumbarton Oaks conference set out to articulate.

Michel Conan, in his introductory essay, (2003) pointed out the seldom-noted fact that movement involves a visual experience which, unlike clear, focused, static visual perception, bears an unavoidably fuzzy, indeterminate quality. Conan did not,

however, launch a Postmodern attack on the epistemic veracity of focused vision; rather, he limited his essay to the lack of visual clarity by which we sense locomotion, the visual blur we experience from the window of a moving train.

While it is true that ambiguity in the visual field is part of the experience of movement, it is, as I will argue below, also an aspect of the visual field even when we are standing still. A blur at the periphery of the visual field is an essential cue that we are experiencing immersive volume. Conan thus overlooked the significant fact that visual ambiguity characterizes both of the unique aspects of landscape experience: the three-dimensional character of the landscape medium and the fact that a landscape experience requires locomotion. However, like the colloquium itself, his essay marks the advent of a new seriousness among landscape writers regarding the centrality of locomotion in the experience of landscape.

Linda Parshall's contribution to the Dumbarton Oaks colloquium, an essay on C.C.L. Hirschfield, (2003) characterized the eighteenth century landscape writer as ahead of his time for calling attention to the role of movement in the landscape experience. Hirshfeld had argued that the landscape experience could not be conveyed in two dimensions, and objected to formal French gardens on the ground that they reveal themselves in a single optical view; the movement required to fully experience an English garden, he believed, made it a "higher" form of landscape art. Gardens, in general, are superior to paintings, Hirschfeld argued, along the lines of Lessing, because of their "potentially greater effect, an effect heightened by the varied elements of motion." (36)

If the English Picturesque landscape was a "higher" form because it more fully engaged the perceiving subject--or if, as Parshall hinted (42) Hirschfeld believed that movement itself adds an element of beauty all its own—neither Parshall nor Hirschfeld, ventured to say precisely what that entailed. Once again, essential issues were raised but not fully explored. Parshall's provocative suggestion that motion is linked to "its aesthetic correlative, e-motion," is one that this dissertation will explore more fully.

In "Sensing the Stones: Bernard Lassus and the Ground of Landscape Design" (2003), Stephen Bann's contribution to the Dumbarton colloquium, he quoted Lassus:

> (T)he landscape is formed from walking and no longer only through the fixity of belvederes and viewpoints (that is, walking as a link, as underlying continuity, forms landscape.) The garden path is obviously related to … the temporal scale, to the sensations felt by the foot: ascents, descents, obstacles, track, roughness or softness of materials, fluidity or firmness of their foundations, variability of ground with atmospheric or climatic changes…. (63)

Had Bann followed through on the idea that travel over the ground—an essential aspect of the landscape experience—is accompanied by sensations first felt in the foot, he might have brought us closer to the crucial differences between landscapes and paintings of them: the *kinesthetic* input from which feelings unique to landscape arise. Although his essay did not go beyond noting that landscape perception begins in the feet, it is the start of a fruitful inquiry, one that will be pursued further in later sections of this dissertation.

In the Dumbarton essay that came closest to noting the relationship between a landscape's form and the experience of traveling through it, John Dixon Hunt (2003) classified classical garden schemes according to the extent to which movement in them is more or less rigidly "programmed." Hunt, apparently unaware that he was describing various styles of choreography, missed an opportunity to discuss the relationship between the built environment and the way the entire body of the walker feels moving through it. Hunt never explicitly called the body into the conversation, and focused instead on the variety of ground shapes by which different styles of landscape design condition movement through it. Had he gone beyond merely classifying classical forms to inquiring about what is actually perceived by the walker, we might have begun to see the relationship between landscape art and the kinesthetic source of the feelings unique to it.

In a book that appeared after the Dumbarton Oaks colloquium, Hunt (2004) sought again for a way to take movement into consideration. Eighteenth century visitors to Picturesque gardens, Hunt noted, would often log their impressions as they traveled through them; Whateley's *Observations on Modern Gardening* (1770), for example, declared on its title page that it is "Illustrated by Descriptions;" the written narrative

significantly supplements drawing, Hunt argued, because narrative reflects the temporal aspect of the landscape experience as no static drawings or other flat images can. Not only must words be read in sequence over time, but words, Hunt pointed out, are better at conveying human emotional experience than are single—or even several—site plans. A narrative arc captures *changes* in mood, the rhythms and pulsations experienced as the visitor travels through a landscape, and also the *continuity* of the landscape experience.

Hunt's turn to narrative to supply the missing component in landscape's concept, while it has a long tradition, perhaps indicates the extent of his frustration with traditional ways of representing landscape. Narrative undoubtedly supplies a unique dimension to the representation of landscape, but it is important to understand that it is the temporal aspect of the narrative "arc" that makes this possible.

**Contemporary Approaches To The Problem of Representation**

We have seen that the continuing effort to arrive at a more experientially adequate concept of landscape has yielded significant insights. Although a satisfactory explanation of how landscape makes us feel is still lacking, the concept of landscape is now understood to involve "insider" immersion in a volume, and locomotion through that volume.

At the same time that landscape writers have expanded the landscape concept to align it more accurately with felt experience, landscape artists have themselves sought representational models that more accurately convey the lived experience of the landscapes they create.

Landscape is a collaborative undertaking, requiring a wide range of professional expertise, considerable time, coordination, and expense. It is therefore usually necessary to have an accurate notion of what is being proposed before the work of implementation can begin. When carefully measured and keyed, site plans, along with coordinated elevations and perspective drawings, are vital in guiding implementation.

The site plan is usually the final product from the artist's own hand, the working out of his ideas in the same way an orchestral score—also a work performed by others—

is the final expression of the composer's concept. However, a composer of music can play his ideas to himself and make adjustments within his actual medium so he can experience for himself what he wants his audience to experience. The landscape artist, by contrast, usually works remotely, not within the actual medium in which his work will ultimately be created. Frequently, he is not present on site when his idea is realized.

As any practitioner who has tried to explain his ideas to a lay client knows, a site plan bears about as much resemblance to an actual work of landscape as a written musical score does to a heard symphony. Not only are flat drawings inadequate to represent what the finished landscape will be like in actual experience, they can inhibit the way landscape ideas evolve. Although a composer eventually notates his ideas on paper, he first works them out on an instrument, but the landscape practitioner does not think experimentally in his actual medium; he works out his ideas for a three-dimensional work in two dimensions.

In "Representation and Landscape," James Corner (1992) wrestles with what he considers the representational "problem of incongruity" (145). Landscape's scale, Corner points out, and its capacity to envelop and surround, cannot be adequately conveyed in drawings. Landscape presents an "intimate immensity" that matches our own interior experience of consciousness (Bachelard, 1969); two-dimensional representation struggles against the immediacy and directness of three-dimensional experience. Movement through landscape creates a wealth of kinesthetic perceptions that alter the meaning of the work. Corner is troubled that not only the kinesthetic aspects of landscape experience, but other sensations—tactile, auditory, viscous, plastic—defy visual representation as well. Nor can drawings convey the character of the artist's chosen material, the living biome, which is, itself, in process, changing color, mass and form as the work develops (148).

Corner recognizes that his problem is that landscape is a whole-body, temporal experience, whereas drawing creates merely static images accessed solely through the retinas. After considering the limitations of supplementary projection drawings--elevations, section drawings and planometrics—and after giving consideration to a notation system resembling Laban's dance notation—Corner concludes that the idea

with which he starts each work cannot ever be properly represented: "Nothing, and certainly not a picture, can replace or equal the direct and bodily experience of…a place" (146).

In defense of drawing, Corner points to its "speculative" function (159), the way sketching allows an idea to wander aimlessly as it acquires a concrete shape. Sketching permits the artist to pull away and contemplate what has been done, and then alter his concept as he continues, Corner says. This is, of course, how drawers draw, how painters paint, how choreographers and composers do what they do. But if the feedback the sketcher receives does not accurately reflect the experience he is trying to create, the feedback falsifies artistic production. The landscape artist can only hope to do the same experimental musing other creators do if he sketches *on the site itself*, or in a medium that resembles the site more closely than do drawings on paper.

Drawings cannot represent the experience of locomotion. Philetus Holt, in his illustrations for F. Hamilton Hazlehurst's work on LeNôtre (1980), utilized scenographs—sectional perspective drawings presented in series—much like those utilized by Repton to illustrate his "eye catchers." Hazlehurst arranged his drawings in sequence to reconstruct in imagination the path a visitor to the landscape might travel; in a series that could perhaps be used to compile a flip book, he demonstrated the changing elevation of the walker with respect to the landscape, showing the walker's surround "moving" up and down as he "traveled forward" experiencing visually the sudden "appearance" of the "surprises" LeNôtre had built into his landscape—the effects that render it counter-Rationalistic. Hazlehurst's scenographs (Figure 5) were an attempt to impart a temporal dimension into two-dimensional representations. This inspired innovation partially succeeds in demonstrating some of the elements of surprise and imbalance in LeNôtre's work and should, perhaps, be employed to supplement many more site plans. The fact, however, that scenographs still fail to fully represent the immersive experience that is landscape, indicates what is lost to an understanding of landscape—and, more importantly, to the artist—when landscape representation is restricted to two dimensions.

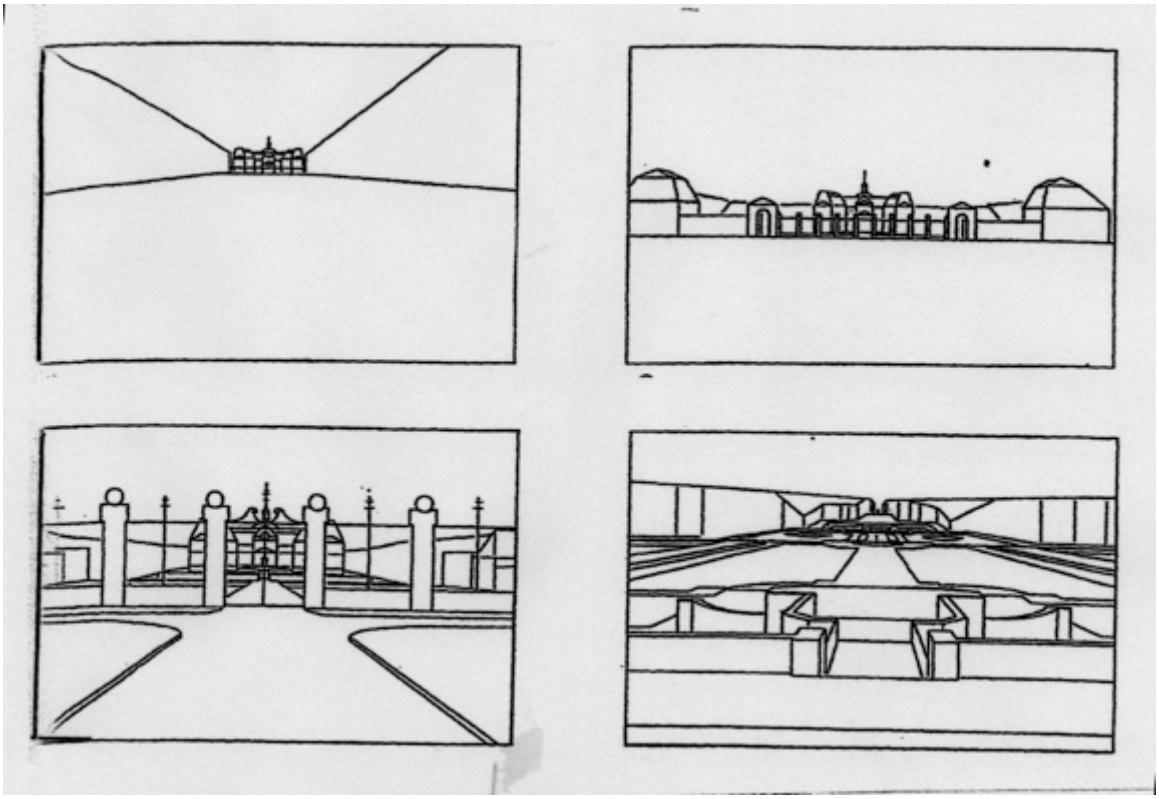

Figure 5: Scenographs of Vaux-le-Vicomte, Philetus H. Holt III, for F. Hamilton Hazlehurst's *Gardens of IIllusion: The Genius of Andre LeNostre,* 1986, 145-46.

Steenbergen and Reh (1996) utilized axonometric projections of geomorphic renderings generated by computer programs to create in two dimensions a sense of volume they could not create by other means. (Figure 6 shows Vaux-le-Vicomte in this new mode of representation.)

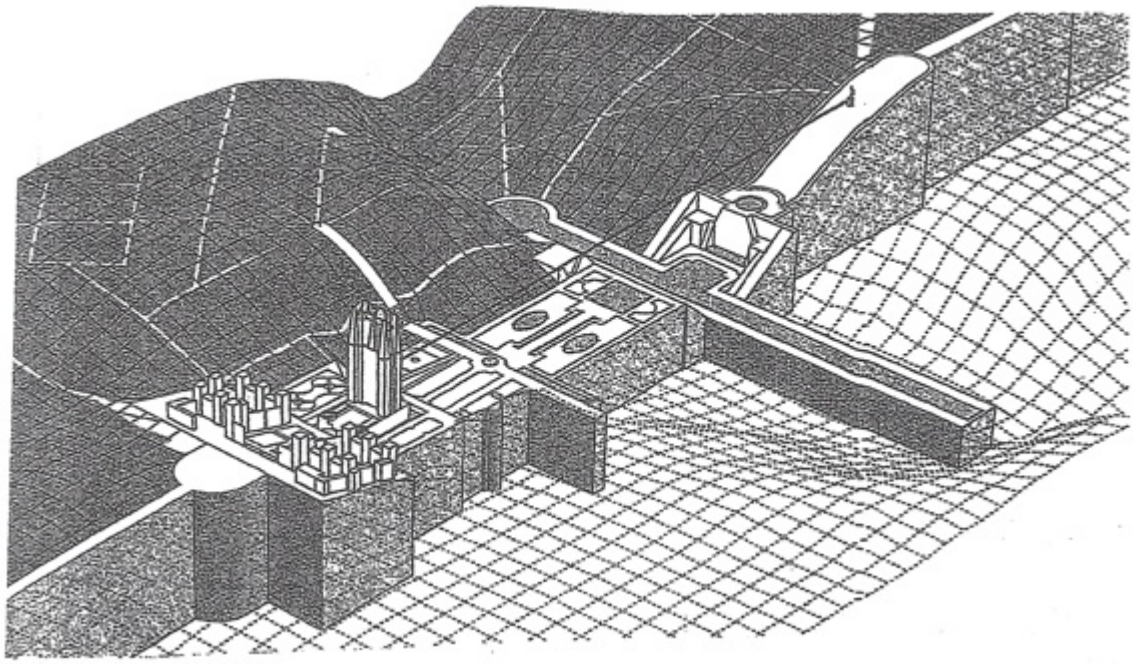

Figure 6: Computer-generated three-dimensional volume, *Vaux-le-Vicomte*. Clemens Steenburgen and Wouter Reh, 1996, *Architecture and Landscape: The Design Experiment of the Great European Gardens and Landscapes,* Netherlands, 23.

In the end, however, axonometric drawings are still drawings: They are two-dimensional and static whereas the experience they want to convey is neither.

One great hope for more adequate representation of landscape lies with new developments in computer software such as programs that allow the landscape artist to build a virtual model of his work that can be "traveled through" by a video camera, creating a virtual stroll through the site. This cannot convey the kinesthetic aspects of locomotion nor can it convey an accurate sense of depth, but it offers promise for landscape representation, providing both a faint sensation of motion and a continuity of visual experience unlike anything drawings can supply.

In 2008, a colloquium was convened for practitioners to explore alternate means of representing landscape. Although presenters at this colloquium covered every imaginable variety of two-dimensional landscape representation--from plans to axonometric drawings, from elevation construction documents to photography and cinema--only Peter Walker, Kurt Rieder and Marc Treib (2008a) acknowledged

Corner's problem of the insufficiency of drawing to represent a three-dimensional experience, and only Treib (2008b) confronted the extent to which sketching in a flat medium restricts and distorts the idea that finally emerges. Other practitioners tacitly acquiesced in Laurie Olin's view that "(d)rawing is the work of designers. Whether it is done with a computer or a pencil, drawings are what we actually make." (2008)

Walker (2008) touted the advantages of clay models for representing landscape ideas.

> We had always known that many of our clients or reviewers could not read plans or deal with abstract representations, but here was a combination tool that could represent three-dimensional space, scale, and usability as well as color, texture, detail, and character. (163)

Significantly for the argument here, Rieder (2008) reported comparing three-dimensional clay models with two-dimensional virtual images of three-dimensional space, and finding the clay model the most comprehensible representational device:

> (Clay models') physicality makes them easier to understand through touch and sight. In contrast, the projected two-dimensional digital image of a landscape still leaves many viewers struggling to form a mental image of the design concept in the absence of richly detailed textures that provide crucial cues to depth and distance. (175)

Computer assisted design software that facilitates the transition from the clay model to construction documents can also supply grading to individual landforms; Rieder wondered if it might be advisable to simply bypass the clay model and begin by generating a three-dimensional digital working model in the computer. He rejected this alternative because "(e)xperience at (his design firm) has shown that a three-dimensional digital model is more successful and useful for representing a design derived from a two-dimensional CAD file—and not the reverse." (178) Rieder does not consider the reason for this directional bias but the problem does not lie, as he supposed, merely with the designers' unfamiliarity and discomfort with the blank computer screen. Rather, I would argue, the process succeeds better when a clay model is produced first because

our natural understanding of the landscape experience is of a three-dimensional, temporal phenomenon.

Treib (2008a) suggested supplementing drawings with other means of representation to capture the temporal aspect not only of a landscape's reception, but of its creation, and urged that creation of a landscape might be best accomplished *within the landscape medium itself,* as a process of trial and error over time:

> …(W)e may intensify the aesthetic aspects of an existing landscape using observation and verbal instruction rather than drawings. In fact, it would have been quite difficult to use plans to make a garden like Stourhead because the landscape developed in space rather than on paper, and over time rather than at one moment…We would probably lack any sense of the dramatic rise and fall of the land, nor the spatial positions of the architectural elements, for a plan tends to be a two-dimensional experience…at best a very abstract(ed) conveyance of a design idea. (114)

Treib would thus return the creative process to the sort of on-site immersion in the actual medium that occurred in the creation of the English Picturesque gardens.

The inadequacy of two-dimensional drawings in conveying the experience of movement, Treib pointed out, is evident in considering the famous kidney-shaped pool in Thomas Church's 1948 Donnell garden (Figure 7); the pool appears simple and flat on a site plan but, when one approaches it, it morphs into a dynamic free form whose contour alters dramatically with each step.

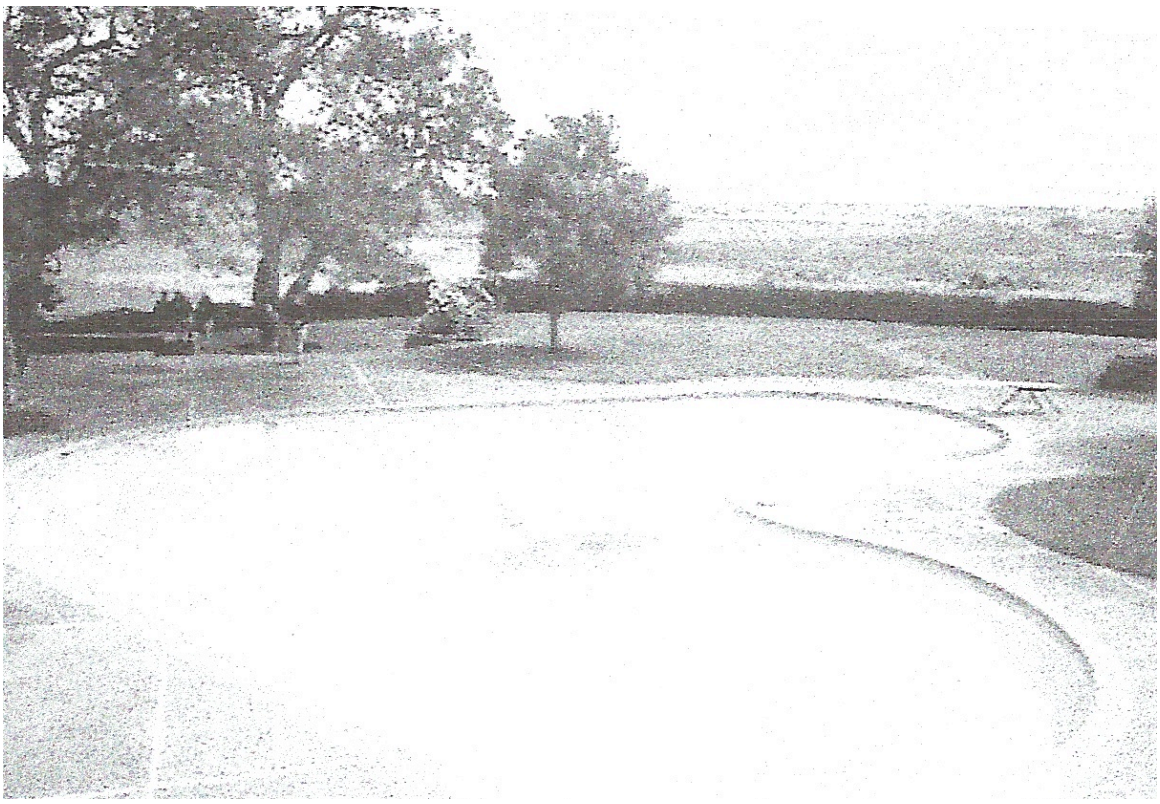

Figure 7. The kidney-shaped pool in the Donnell Garden designed by Thomas Church. http://www.ahlp.org/images/Figure-6.jpg

In Modernist and Minimalist works such as those by Walker, Martha Schwartz, and Dan Kiley, as Treib notes, “the fascination with grids, overlaid patterns, and rotated arrangements of stripes or checker-boards has led to many built landscapes that are interested primarily in their plans” (118). (See, Fig. 8)

Figure 8. Burnet Park by Peter Walker.
http://1.bp.blogspot.com/_UBDCYtcPUD4/TM7n_98p281/AAAA

Recent experiments in landscape representation, insofar as they are carried out on flat surfaces, yield little that is innovative. The use of collage, it is sometimes argued, frees the artist from the restrictions of the measured grid and allows imaginative play with spatial ideas dense in connotative value; by using images and other materials that suggest, rather than visually represent, landscape features, collage, it is argued, might get beyond the retinal or optical to the underlying idea or, perhaps, the archetypal essence that the landscape artist wishes to convey. But this, of course, leaves little for the actual builder of the landscape to rely upon and poses an even greater problem of legibility for a client. The issue remains the difficult one of finding ways to represent landscape that meet the creative needs of the artist who requires feedback in the process of sketching, the builder who must have clear instructions on how to proceed, and the client who wants to know in advance how the landscape experience will feel.

Bernard Tschumi's famous experiment in his proposal for the *Parc de Villette* in Paris (1983) relied on a complex set of overlapping "path notations" to represent simultaneously, various layers of experience: spatial, temporal, programmatic. (Fig. 9)

Tschumi severed the aspects of an experience that ordinarily occur simultaneously, creating layers that could be physically overlapped for viewing. It is a representational device that responds to Hunt's suggestion for getting beyond an ocularcentric—and toward a more *temporally* experienced—idea of landscape.

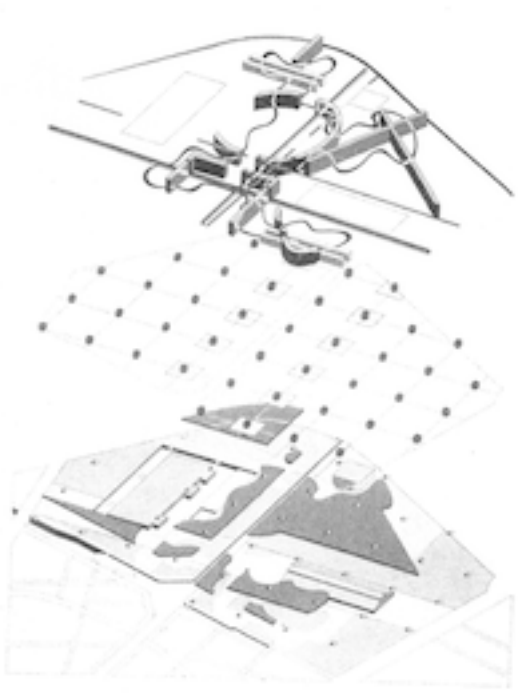

Figure 9. Overlapping notations, Parc de la Villette, Bernard Tschumi, 1988. http://landscapelover.files.wordpress.com/2010/11/villette1.jpg

Of course, slicing what is perceptually an organic, integrated experience into "layers" destroys it, but Tschumi apparently hoped that overlaying a set of transparencies could cure that defect, essentially putting Humpty-Dumpty back together again. In effect, he adapted Eisenstein's cinematic device of montage-- the creation of layers of "correspondences"-- for coordinating the complex aspects of creating a film. The idea of landscape art as a "program" that takes temporality or movement into account is a bold step forward. Tschumi's recognition of the correspondence between the experience of landscape and the experience of watching a film is also a significant insight into the nature of the landscape experience.

However, film is, for all that it employs movement and sound, a primarily visual experience, something projected and experienced on a flat screen and within a bounded frame. Cinema relies on camera movement for the perception of depth but eliminates other cues normally relied on in depth perception; although cinema may provoke simulations of kinesthetic experience in the viewer, it does not engage the entire body as the landscape experience does.

It is obvious from inspection of Tschumi's representational drawings that his programs do not make clear what sort of experience to expect; if anything, they confuse the issue far more than a site plan would. Not only are Tschumi's drawings illegible to one not tutored in their method, they do nothing to convey a sense of either locomotion or volume. The *Parc de la Villette* experiment raised great hopes for a new experience of landscape, but those hopes were disappointed as the work itself was widely considered a critical failure. As a visit to the site makes clear, his method did not allow the artist to conceive the lived experience of his landscape in a way that would produce an aesthetically pleasing, or even interesting, experience for one moving through it.

Edward Casey's examination of the sketches and paintings made by John Constable of a region in East Anglia suggests yet another approach to capturing in two dimensions the experience of a landscape. Although Constable was not attempting to convey the sense of a specific built landscape but, rather, a region including farmlands, natural forest lands and wet lands as well as buildings, the way he managed, says Casey, to capture the felt essence of the region was to sketch and paint the same place from various viewpoints. Constable was not trying, with this method, to present a full 360 degree view of a place but only to capture its essential feel. The views are not aimed at particular "eye-catchers" as Repton's were, but they adopt the same stance, the stance of the landscape painter looking head-on at the landscape; in this, they take the viewpoint of the walker, rather than the aerial position adopted in traditional site plans. In Constable's series of paintings of Dedham Vale, Casey notes, the artist's point of view

> …is shifted horizontally along the surface of the depicted ground—so that, for example, we see a certain lane near Dedham now from one side and now from another—or it is altered vertically: for example, in two

> paintings that set forth vistas of Dedham, in the first of which (*View of Dedham*) the spectator's point of view is elevated approximately sixty feet off the ground, while in the second (*Dedham Vale*) the viewer's vantage point is much closer to the ground level and is more continuous with the foreground. (2002, 84-85)

As a method for conveying a proposed landscape to be built, this technique of repeatedly shifting viewpoints does, in a surprising way, take into consideration some very natural movement that will undoubtedly constitute the walker's own experience. Constable not only shifted along the ground in natural—rather than *measured*—increments, but took account in his shifting views of the natural movements of a prospective walker's gaze as he might in one case look up and off into the distance and, at another moment, cast his gaze down along the ground. The presence *within* the landscape of the human body and its possible natural movements is thus accounted for in Constable's decisions to show essentially the same "place" from a variety of viewpoints. The series representing Dedham Vale thus demonstrates an advantage of locating the human body, with all its many degrees of movement, within the landscape as a perceptual center.

Although it is occasionally possible for the landscape artist to work out his ideas in his own medium as Olmsted did, on-site experimentation is rare. Less arduous and less expensive sketching can, however, be carried out with computer programs designed to produce the visual sensation of movement through a three-dimensional space. The multiplicity of such programs in the current market underscores a growing awareness of the promise they offer.

## The Contributions Of Environmental Aesthetics:

### Aesthetics of the Natural Environment

"Environmental Aesthetics" is the name selected by certain philosophers and other writers for a recent movement that attempts to bring the natural environment back under the lens of aesthetic inquiry. Although some Environmental Aestheticians (See,

e.g. Berleant, 1991) include the built, historically-evolved urban environment in their conversation, Environmental Aesthetics generally focuses on what surrounds us and is "appreciated" on our travels through nature; it explicitly excludes those intentionally-structured outdoor spaces created mostly from materials found in nature which this dissertation refers to as "landscapes." In our discussion of Environmental Aesthetics, it will be useful to refer to the natural, unstructured environment as "nature" or "the natural environment," and to the structured, deliberate works of human intent as "landscapes," granting that there are many intermediate modalities between these two extremes.

There are significant differences between nature and landscapes, but Environmental Aesthetics is examined here for what it can tell us about the material from which landscape art is formed. As is the case with every art form, the aesthetic qualities of nature, and the ways it is experienced, set the ground rules for what the landscape artist can make of it and how, exactly, that product functions expressively. It is therefore worth examining the contributions of Environmental Aesthetics for what they can contribute to the present inquiry, and for what lessons can be learned by noting where Environmental Aesthetics falls short.

As mentioned above, the eighteenth century joined the notion of "disinterestedness" as the distinct mode of aesthetic appreciation to a fascination with the natural world to produce a style and a theory of landscape known as the Picturesque. However, despite the enthusiasm of--and popular acclaim bestowed upon-- the English landscape writers who advocated this style, and despite the fact that no less a figure than Kant considered nature and formed gardens appropriate subjects for aesthetic contemplation, neither the natural environment nor man-made landscapes found their ways onto the lists later philosophers compiled of the "fine" arts. In Hegel's enumeration of the fine arts, the intent was to track the evolution of Spirit as it manifests itself in various sensuous forms, each more "spiritual" than its historical precedent; to include natural phenomena in this enterprise would require expanding the notion of the artist to include the creator of nature. Hegel, however, also excluded from his list of fine art landscapes in which human intent—and so, a Spirit of the time—is clearly evident.

Environmental Aesthetics does not seek to embrace nature and our experience of it within the bounds of traditional philosophical aesthetics. It concedes that nature is not art, and so the experience of nature lacks a history or "art world" paralleling those the fine arts possess. (See, e.g., Bourassa, 1991) Arnold Berleant (1991) explicitly announced his intent to establish a "new" aesthetics that would include many aesthetic experiences excluded from the traditional model, an aesthetics that would include the experience of nature.

Environmental Aestheticians note the lack, in nature, of a frame, of clear boundaries that separate the experience of art from the rest of ordinary experience. Without a frame, they point out, nature arrives in experience unstructured, lacking the formal dynamic properties on which expressiveness depends: Balance, variation, and symmetry are all formal qualities which rely for expressiveness upon visual tensions that reference a frame. But the lack of a bounded art object, Environmental Aestheticians argue, should not keep us from describing and accounting for our feelings in the vast, "boundless" natural environment; when approaching nature, we should give up any concern with judging it as a work of fine art; rather we should lay out guidelines for "appreciating" it. (Carlson, 2000, 35-36)

It is, of course, arguable that our experiences of even the rawest of natural environments arrive "framed;" the horizon supplies a "line" demarcating the far end or "top" of the environment and our forward gaze supplies "boundaries" however ambiguous. Thus, there is a sense in which nature "viewed" is already somewhat structured dynamically. Perhaps this is why some Environmental Aestheticians suggest that nature's "appreciators" must imaginatively establish their own frames, and thus create their own subjective works of art. The visitor who pauses at a "scenic overlook" in order to utilize a viewing device positioned to provide a framed "view," manipulates his visual field and composes it in the same way a nature photographer does with his lens. (Kant seems to suggest this sort of activity when he describes landscapes as merely a species of painting: Structured landscapes "give corporeal extension…in accordance with truth" whereas paintings "give the illusory appearance of corporeal extension…") (Bernard, 1914, 210)

George Santayana (1896), an early exponent of appreciating nature by "framing" it, claimed that reason, as the source of formal structure, can impart spirituality to raw nature, setting a human mark upon the crass, causal environment. The views of the Environmental Aesthetician, Emily Brady, (2004) also suggest that nature can be transformed into a graspable art product by projecting the human imagination into it. Brady credits the "metaphysical imagination" of the *appreciator* with endowing nature with "transcendant meanings." By framing, selecting, projecting, and amplifying sensuous input from nature, the appreciator composes his own meaningful—expressive—work of art. Brady's and Santayana's notion that wild, disorganized nature supplies the raw material—the medium—for expressive art is a significant starting point for a theory of landscape aesthetics; however, their approach, by taking the experience of nature to be ocularcentric--static, painting-like, distanced and flat—fails to take into account certain essential characteristics of the experience of nature.

Most Environmental Aestheticians in fact approach the non-art aspect of nature by explicitly *distinguishing* it from painting. Allen Carlson, (2000. 33 *et seq*) for example, notes four essential distinctions between nature and paintings of it: 1) Nature "moves" in perception, whereas paintings are "static;" 2) nature presents itself in three dimensions, not the flat two dimensions of painting; 3) whereas painting implicitly presents a "viewpoint" set at a distance from the viewing subject, nature surrounds us, presenting multiple—in fact, an endless number of—views; and finally, 4) nature does not merely address the visual sense but, rather, affects many other senses as well.

Ronald Hepburn draws similar distinctions, emphasizing the immersive character of the natural medium of landscape and the locomotion that is essential to experiencing it:

> On occasion (the spectator) may confront natural objects as a static, disengaged observer, but far more typically the objects *envelop* him on all sides. In a forest, trees *surround* him; he is *ringed* by hills, or he stands in the *midst* of a plain. If there is movement in the scene, the spectator may himself be *in motion* and his motion may be an important element in his aesthetic experience. (Hepburn, 2004, 45) (Italics added.)

Stan Godlovitch (2004, 108 *et seq*) urges a rejection of all aesthetic approaches that are directed at an aesthetic "object" because they "limit the vastness of Nature, its essential trait." Incomprehension, he concludes, is precisely what stimulates our emotional responses to it: "Nature is, for us, fundamentally inaccessible and ultimately alien" (113), and even more mystically: "Nature, the great Insensate, is beyond us, as are those of its ways whereby the only clear picture we have is filtered nomologically as patterned processes, repetition, and obedience to necessity."(113)

Hepburn, Godlovitch and, especially, Carlson offer some excellent insights into what traditional theories have missed in the natural environment, characteristics that must be articulated if we are to understand how the material of which landscapes are made can be formed to function as expressive art. However, they fail to carry these analyses beyond discriminating the experience of nature from the experience of painting.

It seems that so long as nature, not a deliberately structured, artfully arranged, landscape is under consideration, it remains "indescribable" and "unknowable." Environmental Aestheticians tend to fall back upon what Carlson (2004, 38) called "the built-in indeterminateness" of nature as a reason not to press on with further analysis. The question for Environmental Aesthetics then remains: Can there be a systematic approach to feeling when what is felt is unbounded—i.e., unframed—and without deliberately arranged dynamic structure, when the perception is not of art?

I will argue in what follows that the unique characteristics of the experience of nature can indeed be analyzed to specify more clearly what generates the responses it arouses as it "surrounds," "envelops" and "rings" us. As I shall demonstrate below, it is precisely because the environment surrounds us and invites us to move through it that it elicits an entirely unique set of perceptions, unlike the responses we have to purely visual experience. Once we delve more deeply into the question of how we experience the environment, we can begin to understand how its characteristics can be formally structured to create a work of art that might take its place among the "arts of art history."

Environmental Aestheticians, focused as they are on the natural environment—the material from which intentional landscapes are structured—renounce any effort to account for expressiveness when they note that the unframed, unstructured environment,

lacking as it is in human intent, can never function as art. Thus Carlson, Hepburn and Godlovitch conclude their investigations, as most Environmental Aestheticians do, with rapturous acknowledgements of the joys of experiencing nature and with formulas for deepening our appreciation of it. Understanding his four distinctions between the environment and painting, Carlson says, leads us to the "full, rich aesthetic appreciation that the natural environment allows and encourages." (2000, 34) Hepburn concludes that because of these very distinctions, a rigorous analysis is impossible; there can never be a traditional aesthetic theory of this "moving" vastness in the midst of which we often enough find ourselves experiencing intense pleasure. (2004,49)

As the natural environment provides the materials from which the shaped landscape is formed, one wishes that Environmental Aesthetics could serve as the starting point for an aesthetic theory of landscape art. Although landscapes utilize frames to organize the experience of them, they are experienced much as Environmental Aestheticians claim nature is: as three-dimensional, "moving," having multiple viewpoints, and, most significantly, as addressing vision as merely one among several senses. What virtually all Environmental Aestheticians ignore, however, is that vision does not provide the defining—essential—perceptual component in the experience of nature; while noting significant differences in the experiences of nature and painting, these writers implicitly commit themselves to the notion that our experience of nature is an essentially *visual* one. (This point is only emphasized by Carlson's pointing out that the natural environment *also* provides *other* sensory input, but that other input is never fully described or analyzed.)

In order to understand the material that sets the ground rules for what can be done expressively in landscape art, we need to know more about our experience of nature. We must grasp more precisely the character of landscape's expressive medium and articulate the sensory systems that provide input in our experience of it; we must understand precisely how those systems supply *feeling* to the perceptions they produce. Only then will we be able to articulate how nature can be structured to *heighten* our experience of it in landscape art. These are the issues this dissertation takes up in order to arrive at a theory that makes it possible to understand the art of landscape at least as

well as we understand painting, theatre, dance, poetry, sculpture and music—the "fine" arts.

**Arnold Berleant's "Engaged" Aesthetics Of The Natural Environment**

While some proponents of Environmental Aesthetics distinguish nature from art, and focus upon how better to appreciate nature, Arnold Berleant radically revises traditional theory in order to assimilate environmental appreciation to philosophical aesthetics. His "new" aesthetic theory, he claims, repudiates the old as unnecessarily restricted by ideas of "disinterested contemplation, designing intellects, art historical traditions, art critical practices and the artworld." (2004,13)

Berleant criticizes traditional aesthetic theory for "never really (providing) a satisfactory account of the actual workings of the arts and (owing) its influence to its compatibility with the classic philosophic tradition rather than to its theoretical success in explaining the arts." (2004, 87, note 9) His new aesthetics, would, he claims, emphasize "participatory engagement by the appreciator with the object or circumstance of art." (2000, xii) Berleant calls upon phenomenology as the appropriate approach for an aesthetics of the environment because, as a *body-based* approach, it can restore the body to our accounts of the experiences of both nature and intentional landscapes, both of which involve the body in ways that make them problematic for traditional aesthetics.

As I will argue in what follows, traditional philosophical approaches suffice to explicate landscape as art—and to give a fuller account of the experience of the natural environment—so long as the body's *kinesthetic* perceptions are taken into account the way other perceptions, such as the visual, are traditionally considered. It is, in other words, the fact that traditional aesthetics neglected non-visual bodily experience that makes a consideration of landscape difficult, not the general approach or methodology of the theory itself.

The theorists and landscape professionals considered in the previous sections would undoubtedly welcome a theory that focuses on bodily engagement, and that bridges the insider-outsider dualism. Berleant seems poised to provide a philosophical

response that is true to the landscape experience, but his "engagement" theory in fact offers nothing new: John Dewey (1929; 1932) posited a subject-object continuity, and specified *all* experience as the melded product of experienced object and experiencing subject. Nor is Berleant the first to recognize the particular significance of Dewey's thought for an exploration of our experience of nature. Jay Appleton's famous answer to the question "What do we like in landscape and why do we like it?" was, he claimed, the logical heir to Dewey's philosophy because it relied upon the engaged, participatory nature of perceptual experience articulated by Dewey. Unfortunately, Appleton's Prospect-and-Refuge theory centered almost exclusively on visual aspects of the experience of nature and so overlooked its primary perceptual content. A similar problem afflicts both Dewey's aesthetics and Berleant's "new" approach.[2]

Dewey, unlike either Appleton or Berleant, supplied a theory of expression that accounts for how the experience of art differs from other experiences. The artist, according to Dewey, selects certain perceptual objects and qualities based on whether the experience of them *resonates*, or is *congruent*, with the emotion he wants to convey. (This shifts the problem to the notion of "resonance," a concept at the very core of Dewey's theory of expression, and one which will be elaborated and evaluated in a later section of this dissertation.) The artist, having selected his materials for their resonance with a specific feeling, produces something that embodies that feeling in a purified, heightened form. It is this process of selection that produces expression, an experience that stands out from ordinary experience, announcing itself as art.

Berleant, it seems, is so concerned to stress the continuity between aesthetic and ordinary experience that he fails to articulate necessary distinctions. Art, nonetheless, seems to announce itself to him so that he proceeds to a consideration of how aesthetic appreciation in each art entails "engagement." The natural environment, he decides without much discussion, is *not* art but is a proper subject for philosophical aesthetics nonetheless, and a subject that benefits greatly from a phenomenological analysis. But without taking "expression" into consideration, Berleant cannot distinguish art from the rest of what we experience, and cannot say why nature can be aesthetically appreciated

[2] In the final chapter of this dissertation I develop a way of conceiving "resonance" or "congruence" in Dewey's expression theory that overcomes the objection of ocularcentrism.

and yet not be art. Dewey's expression theory is a successful example of how subject-object dualism can be avoided, the experiencing "appreciator" be considered an engaged participant in the working out of the art process, and a work of art nevertheless be distinguishable from ordinary experience.

Berleant (2000) argues that new developments in the arts demand a phenomenology-based aesthetics. The concept of aesthetic experience, he argues, must expand beyond the subject-object distinction for aesthetic theory to continue to do its job in a world filled with such "participatory," "engaged" art forms as action painting, optical art, Happenings, and the subjective cinematic camera, art that induces the appreciator to play a role in the work's formation. Berleant claims that his new phenomenological aesthetics not only embraces the contemporary art forms that could not be fitted into traditional theories, but that nature can find adequate explanation there as well.

But philosophy has long acknowledged that art, *like everything else*, is experienced by a contributing, participating, engaged subject. And art has always made statements about the participatory role of the observer in aesthetic experience, whether negatively as in "objective"—representational—art, or more positively as in impressionist painting, optical art and conceptual art. The art forms that intrigue Berleant simply make *more explicit* what was always implicit in the art experience: the participation of the appreciator. The history of Western art might perhaps be understood as a continuing progression toward the participatory forms Berleant takes as requiring a new model. Art itself is, in fact, more "continuous" than Berleant imagines.

Nature, says Berleant, is excluded from traditional aesthetics for not clearly manifesting expressive intent. But recent developments in the established fine arts, he points out, aim at blurring distinctions between chance and deliberation; Jackson Pollock's action painting, for example, insists upon chance, as do Happenings, and some modern music. Earthworks, too, often blur the distinction between intentional art and adventitious "nature." It is all these ambiguous, or borderline, instances—mixed-breeds of artistic intent and natural chance—that Berleant hopes to include in his new aesthetics along with non-intentional raw nature.

Intentional works of art that deliberately leave space for improvisation and spontaneous audience supplementation do, in fact, employ chance happenings but they do so deliberately; the experience of chance and spontaneity is part of the meaning of the work which can only succeed to the extent that the participant/viewer understands the role he is intended to play and understands, as well, the expressive point of this arrangement. The formlessness and lack of intention in nature is something altogether different. Whereas in Happenings a participant understands the open structure and his own participation in it as "part of the message" of the work, nature conveys no such "message." It is an error, therefore, to treat these two experiences as aesthetically comparable.

It is with his insistence that both art and nature demand "engagement" that Berleant can possibly supply what has been missing from traditional theories, particularly theories of landscape. His notion of engagement repudiates eighteenth century "disinterestedness," the disengaged, distanced, non-participatory attitude of the spectator. It is disinterestedness, Berleant claims, which must be disavowed if aesthetics is to expand to include appreciation of both the newer art forms and of nature. We must abandon the Formalist aesthetic that singles out the work of art as a situation valued for its own sake and that proposes a stance vis-à-vis art that renounces all interest in its utility to us or to society.

But, *all* experience is the experience of a body that has evolved to evaluate each of its experiences in terms of its primal need to survive. Thus all experience is irreducibly *interested*. It is therefore biologically false to posit a "disinterested" perception or experience. Perception is always conditioned by fundamental human needs that color, or lend the *feel* to, experience. Neuroscience agrees with Berleant as to the impossibility of a Kantian "disinterested" stance or experience; neuroscience, not a new aesthetic theory, has vanquished the disinterested observer.

It is, however, entirely possible to segregate the feeling of an experience from other meanings which may connect it to our interested and engaged lives and thus to *contemplate* or *attend to* a feeling *for its own sake*, to enjoy a feeling without considering other values it may hold for us vis-à-vis our more utilitarian concerns. When

a situation announces itself as a condensation of resonant elements--as heightened, purified feeling--it thereby suggests or prompts that activity of segregation and attention; certain situations--art --arrive in experience as situations whose *feeling* might be worthy of attention for its own sake. Thus, although art, like all experience, is interested, involved, active and engaged, it is always possible to detach ourselves from utility considerations and experience the *feeling* elicited by the situation in a manner that sets aside other ends. This is what I shall refer to as an "aesthetic" attitude. It follows that an experience may be both engaged—interested in the way all experience must be—and also offer an opportunity for "enjoyment for its own sake," as when a situation prompts us to set our experience of it apart from concerns of action and "simply enjoy."

We can—and often do—insist on the value of certain situations without regard for how we will use them in our active, survival-directed lives. There is, therefore, no need to revise traditional aesthetics to accommodate the experience of art generally or the complex experience of landscapes in particular. What is needed, rather, is a more probing consideration of how landscape is experienced—what perceptual modes are activated in that engaged, interested, but nonetheless aesthetic, experience. The traditional approach must expand to include the vast domain of *kinesthetic* perceptions as a subject of aesthetic inquiry and expression.

Berleant is not alone in claiming that environmental experience is, by its nature, more "active and involved" (Carlson, 2000. p. 35), more "engaging" than other, more "distanced," arts like painting and sculpture. What Environmental Aestheticians seem to want to convey with this claim is that nature—and so, landscapes--are uniquely experienced within *three dimensional* space in a mode that involves *moving through* them. But this merely amounts to saying that perception of nature arises from sensations not accounted for in traditional aesthetic theories. Kinesthesia, the "sixth sense," is not unlike vision in manifesting the continuity between perceiving subject and perceptual object; both vision and kinesthesia—like *all* the senses—are "interested" or "engaged."

Although the expressive medium of landscape art is perceptually different from that of the more "distanced" spectator arts—painting, theatre, dance, sculpture, architecture-- the distinctions between the experience of nature or landscapes and the

experience of, say, painting should not prompt us to seek a radically different approach to aesthetic theory. Rather, we should perform the same painstaking analysis of kinesthesia that we perform with vision and hearing in accounting for the visual arts and music. Kinesthetic sensations are susceptible of being structured according to formal principles just as other sensations are; they can produce organized feelings in the same way deliberately structured visual sensations can. Neither the depth involved in the experience of nature, nor the necessity of locomotion in experiencing it destroys the possibility of saying precisely what happens in that experience. Properly understood, the kinesthetic experience that lies at the heart of our "surrounding," "immersive," "engaging" environment and the landscapes constructed from it can be grasped as a set of perceptions available for transformation into expressive art.

Further, once we understand the role of kinesthesia in our experience of nature, we can appreciate the role it plays in *all* aesthetic experience, including our experience of painting. This is no difficult matter although we are not, perhaps, accustomed to focusing on kinesthetic perceptions *per se.* Once we learn to attend to them in experiencing landscape art, we are easily persuaded of the role they play in all expression.

All art requires a certain attitude of attention. This includes the art of landscape, notwithstanding that we move through it, penetrating it and feeling it surround us. The "distancing" that the walker performs, he performs consciously, seeking to isolate certain feelings in order to enjoy them "for their own sakes." This is no less easily done with the feelings aroused by kinesthesia in our experiences of nature and the landscapes made from it than with feelings aroused by other sensory inputs.[3]

Berleant and other Environmental Aestheticians further press the point that nature, unlike any of the fine arts, specifically addresses and engages "the entire body." This fact about nature surely does not render it unsuitable as an expressive medium for landscape art. Virtually all perceptions of the world are whole-body experiences; to the extent that the experience of landscape art affects the entire body, it is a highly

[3] At this point, I use the term "feeling" loosely to denote an emotionally toned sensation or perception. A precise definition will be provided in the final chapter where "feeling" and "emotion" will be distinguished.

expressive art form. Nor is the fact that the experience of nature affects the entire body a reason to forego a rigorous systematic analysis of it. In what follows I shall indicate how recent developments in the neurosciences explain how inputs from kinesthetic receptors create the feelings we experience when we move through a three-dimensional volume; this same neuroscience can also account for the expressive kinesthetic aspects of sculpture, architecture, music, dance, cinema and painting.

Berleant and the Environmental Aestheticians are correct in their claim that nature is engaging. But what is needed to introduce the art of landscape into the pantheon of the traditional arts is a clear explanation of *how* it engages us, and of how it carries the unique feel of a distinct art form--what distinguishes it both as to medium and the way that medium carries its feelingful message. We need to know what it is in the experience of the environment that permits it to serve as the material for an art form that bears every mark of the traditional arts, an art with its own "art history."

**Contributions From Feminist Philosophy**

Berleant notes that forefronting continuity over separation or sharp dualisms, contextual relevance over objectivity, historical pluralism over certainty, and ontological parity over priority has drawn Feminist theorists to his aesthetics of "engagement." Feminist thinkers see an opportunity in nature's apparent resistance to systematic analysis and its intrinsic lack of order. Cheryl Foster (2004), for example, insists that landscape is best known not through narrative but through direct acquaintance:

> One of the more powerful and enduring kinds of experience in the formation of aesthetic appreciation of nature resists direct or clear expression in discursive prose. I call this sort of experience the 'ambient' dimension of aesthetic value, and in so doing contrast it to some degree with what I shall term the "narrative" dimension … (198)

Foster explains that one of the problems with "ambience" is "the difficulty in giving a succinct sense of it in words. Surely, it connotes a feeling of being surrounded by, or infused with, an enveloping, engaging tactility, but the ambient in all its forms resists discursive formulation." (205)

As I shall demonstrate in the sections that follow, such notions as "surround" and "enveloping" can be perfectly well understood as aspects of depth perception; and the feelings connected with depth perception are explicable as due to movement of both the small muscles in the eye sockets and the larger musculature involved in moving the limbs and the full body. Thus, the feel of both nature and the landscapes constructed from it turn out to arise from the specific neurophysiology of the way it is perceived, and in that it is exactly like all other experience, experience that aestheticians can—and do—say quite a lot about.

Feminists may prefer a phenomenological approach because it replaces the quantitative, Cartesian and Newtonian, stripped-down approaches to space with an account of how nature and landscapes actually *feel*. But one need not disregard the hard sciences in rendering an account for feeling. Neuroscience, particularly when it aims to give an account of consciousness, supplies support and validation for the descriptive accounts of phenomenology; the two approaches go hand in hand. Neuroscientific models of consciousness, even when they call up the hard science of electrochemistry, lead us to explanations of why nature and landscapes feel the way they do; combined with other, no less scientific, theories of perception, neurophysiology can partner in rendering an account of the non-Cartesian, non-Newtonian, utterly rich and humane experiences we have in both nature and the formed landscape. The failure of traditional theories to render an adequate description of nature is due not to their Cartesian dualism or their preference for the quantitative sciences, but to their neglect of the essential characteristics of our experience of it. The problem lies in a failure to grasp that the natural environment, an immersive volume experienced by moving through it, requires a theory that takes *kinesthesia*—the perceptions of the whole body's movements—into account.

It is not within the scope of this dissertation to examine or critique the writings of Feminist theorists who have considered either landscape art or Environmental Aesthetics. The Feminist contribution is noted here only to emphasize that the theory developed below incorporates quantitative experimental data to account for the feelings that landscapes and the environment arouse in us. I do not believe that the environment's

characteristics of "immersiveness," "penetrability" and "ambiency" make it a peculiarly "feminine" subject of discourse. On the contrary, I believe that what seem like "soft" or mysterious characteristics are merely aspects of the materials of landscape art, characteristics of one sort of artistic material among many. Like the materials of painting or music, the material of landscape art can be understood by carefully probing the sensations it produces in us, kinesthetic sensations. By attending to how kinesthesia operates to create feeling, we will come to understand the feelings that account for landscape's expressivity, feelings that may, at first, seem ineffable. We can then understand how landscape creates its unique feelings as thoroughly as we understand how music creates its particular effects, and painting the feelings that distinctly belong to it.

Nor do I agree that a "whole-body" or "body-based" response is unique to the way nature—and then, landscape --affects us, or that the whole-body aspect of kinesthesia renders landscape peculiarly "feminine." I understand *all* experience and *all* art as addressing the entire body and all of it as having significant kinesthetic aspects.

There is no claim made here that either the environment or particular works of landscape art affect women differently from the ways in which they affect men; in fact, experimental evidence specifically rules out gender as accounting for differences in the ways various bodily experiences impact felt emotion. (See, e.g., Duclos, *et al.* 1989). Insofar as it has been demonstrated that the neurochemistry of men and women differ, I would expect neuroscience to eventually uncover some specific differences in the ways the sexes respond to these phenomena. That research, however, has yet to be published. While I await its publication eagerly, I do not expect that anything I say about the perception and enjoyment of landscape art, or about the way landscape art expresses feeling, will be significantly altered by such research.

## CHAPTER TWO:
## KINESTHESIA: THE KEY TO UNDERSTANDING LANDSCAPE'S MEDIUM

The review of attempts by both philosophers and landscape artists to say what landscape is and how it should be represented has uncovered some serious errors and also some promising suggestions for re-directing the inquiry. The most promising philosophical approach comes from Environmental Aesthetics and its attention to the fullness of our experience of the natural environment which is the expressive medium from which landscapes are formed. It is now clear that the flat, purely optical and static "scene" is merely one small aspect of an experience that impacts the entire body. Environmental Aesthetics thus provides an excellent starting point for the inquiry here because it emphasizes essential, though heretofore overlooked, characteristics of the medium in which the landscape artist works: The natural environment is a three-dimensional medium that *immerses and surrounds* the walker, presenting itself as something to be *traveled through*. Landscape presents itself visually as depth, but it is also experienced throughout the body by way of locomotion and postural attitudes. As such, it is an artistic medium unlike any other.

The perception of movement is a complex affair that involves sensory receptors distributed throughout the entire body; even the simplest modes of locomotion activate such a large number of combinations and permutations of these receptors that the range and variety of kinesthetic perceptions arising from the body's movement is enormous. The perception of depth is even more complicated as it involves both 1) visual perception which begins with sensation in the retinas and also 2) the perceptual apparatus involved in movement. Undoubtedly, it is this staggering complexity that has led Environmental Aestheticians and others, both philosophers and landscape professionals, to conclude that the perception of nature is something that must remain "imponderable," "ineffable," "mysterious."

This chapter examines more fully the two aspects of the experience of the natural environment that Environmental Aesthetics uncovered at its core: *movement,* and the perception of that surrounding depth I shall call *immersive volume*. As this chapter will demonstrate, the visual perception of depth itself depends upon movement. Furthermore, depth perception is sourced beyond the visual organs in movements that occur throughout the entire body. It is therefore the perception of movement—the whole-body perception known as *kinesthesia*-- that is essential to the perception of the natural environment and, thus, of landscapes.

As painting is made expressive by the intentional manipulation of its medium, paint, and as music derives its expressivity from deliberate structuring of its medium, sound, so landscape art is expressive because of the manipulation, structuring, deliberate forming of its unique artistic medium, the natural environment. What can be accomplished within the limitations of this medium and what this medium is best suited to express will depend on nature's intrinsic features, specifically, the way it arrives in perception. I therefore turn, in this chapter, to an analysis of landscape's expressive medium: the traversable volume of the natural environment.

## Kinesthesia, The "Sixth Sense," And Locomotion

Every school child is taught that there are five senses--sight, sound, smell, taste and touch—that are based in five sensory systems located, respectively in the eyes, ears, nose, tongue and skin. But there is so much else that we "sense" about the world and ourselves in it. We perceive own weight and size as immediately as we smell bacon cooking on the stove. We perceive the hardness of the floor beneath our feet as directly as we see its color. We perceive the expansion of our lungs as we step outside on a warm Spring day as keenly as we smell the lilacs. Where is the sensory organ that gives us this vastly varied realm and accounts for its equally vast variety of feelings?

Nineteenth century physiologists began inquiring into the possibility of sensory receptors occurring along the surfaces of the muscles in order to account for the

perception of space (Boring 1942, 530). At the time, muscle receptors were thought to be exclusively related to motor responses to the stimuli arriving from the five sense organs, responses resulting in contractions and expansions that produced the movement of the limbs. It soon became evident, however, that muscle receptors participated in the tactual perception of distance, size, form, weight, hardness and roughness. Later research into the perception of effort, resistance, movement and position gained greater acceptance for the emerging concept of a "sixth sense," *kinesthesia*.

Toward the end of the nineteenth century, *spindle cells* located along the muscles were proven to be sensory *receptors* capable of taking in information as well as sending out signals to produce movement. (532) Further research revealed that these cells are actuated *solely* by stretching: Direct sensibility of the muscles occurs only upon their *expansion* or *contraction*. Eventually, spindle cells were found in tissue near the joints and tendons as well, and these also produced kinesthetic perceptions when they were stimulated by stretching, i.e. by expansion or contraction (525-33). All kinesthetic perception thus begins as *movement,* and it is always movement along a single axis or mode of tension: *Spindle cells respond either to expansion or contraction of the underlying tissue.*

Kinesthesia would then appear to be a sense far simpler to explain than vision. In vision—as in the senses of taste, smell, touch and sound--there is much to account for between the stimulus that produces sensation and the felt response or "perception." The bridge between chemical interactions of sodium chloride in the mouth and the perception of saltiness seems to be a bridge across a category difference, something perhaps impossible to explain. The "problem" of visual perception is the most vexed and most discussed of all: How do quantitative differences in the wavelengths of light impinging on the retina account for the felt perception of color differences? Or, of greater concern here, how do the flat retinas detect differences of depth? The difference between visual proximal stimuli and distal objects creates an endless array of explanatory problems.

In the case of kinesthesia, however, there is an isomorphism between the proximal stimulus—the changes in the spindle cells along the muscles that occur when muscles

are stretched—and the perception of the event. Stretching of the muscles' cells feels like… *stretching.* Contractions and expansions are felt as tension or relaxation. The same vocabulary is used to describe what happens on the kinesthetic receptors—events of which we are not conscious—and what is felt in the body, in conscious perception: Muscle cells along the muscles in my neck contract and I feel…tightness in my neck.

The fact that kinesthesia, like the other five senses, involves two events—*sensation* produced by stretching of the receptor cells, and *perception* of muscle stretching which is conscious--is often overlooked because of the isomorphism involved.

This sort of confusion affects classical accounts of visual perception. In trying to correct Descartes' account of depth perception, Berkeley understood that Descartes could not explain depth as the result of a geometrical calculation because a key variable needed for the calculation, the vergence angle of the eyes occurring in stereoptic vision, would not be known to the subject charged with the calculation. Since the idea of the vergence angle was not "immediately" present, Berkeley at first substituted "the sensation arising from the turn of the eyes," which is "immediately perceived." (Morris 1997, 8) Here, Berkeley appears to have treated the kinesthetic perception of muscle contraction around the eyes as a direct, immediate *sensation,* something of the same logical type as the retinal images on which the mind could then go to work in constructing the perception of depth. As Morris (1997) points out, Berkeley was at different times on both sides of the issue of whether kinesthetic –"tactile" or "tangible"—ideas were immediate (sensations) or constructions of the mind (perceptions,) apologizing in a later work for the view put forward in an earlier one. In fact, what Berkeley called "tactile" ideas, the sense we have of distance as a measure of a domain that exists outside mind, is both a sensation and a perception. The two are subject to confusion because the mechanism involved in both is the same: "stretching." I cannot feel the sensory receptors in my eyes or my tongue doing their work but, because muscle receptor cells lie directly on the muscles whose movements they track, I can perceive them doing *their* work.

If no more than a rotation of the eyes in their sockets or a turn of the head were involved, matters would be far simpler than they are. However, many kinesthetic

sensations and their correlate perceptions occur simultaneously throughout the entire body. The result is a rich "whole-body" perception, a complex "feel" that permeates an experience. Depending on the circumstances, we might recognize this state as an "emotion;" in other cases, we might consider it simply the "feel" of an object or a situation. (Much more will be said about the distinction between feelings and emotions, their sources in kinesthesia, and the role of each in the experience of art, in the final chapter of this dissertation.)

What is important at this point in the discussion is the fact that kinesthesia affects virtually every part of the body, making possible an enormous number of combinations and permutations of kinesthetic perceptions. Variations in the effort employed in locomotion, differences in the limbs that are called into action, variations in postural attitudes of the torso, neck and head—all these factors and many more, go into the mix of spindle cell expansion and contraction that makes up a kinesthetic perception. It is the dispersal of the kinesthetic "sense organ" throughout the entire organism that makes kinesthesia a "whole-body" perception—and our experiences of nature and of landscapes "whole-body" experiences.

The Environmental Aestheticians are correct, therefore, in their observations about the locus of our experience of nature: The kinesthesia that occurs both in locomotion through an immersive volume, and in the visual perception of depth, is a *whole-body* perceptual experience. As the next section of this chapter will demonstrate, we must move in many complex ways in order to experience volume. Even as we stand perfectly still and focus our eyes straight ahead as Plato's cave dwellers were supposed to have done, we experience minute motions, whether in the scanning movements of light patterns on the retinas or by virtue of small movements of the eyes in their sockets. The movements involved in depth perception activate tension or flexion of cells under the skin and throughout the muscles and joints—and even in the inner, soft organs—of the body. These minute movements, in aggregate, produce what we understand as the qualitative "feel" of the surrounding environment, our "sense" of the immersive volume we inhabit.

Each of the movements of the larger body parts—the movements of the head, the torso and the limbs as we travel through the environment—produces its own sets of flexions and tensions, each combination with its own attendant perceptions, each a unique factor in a complicated blend of perceptions. In addition, combinations of more subtle muscle tensions account for our sense of our own embodiment—our propriocentric perceptions—whether this be a sense of orientation in space, or a sense of ourselves as weighty, massive, balanced, or a more complex sense of ourselves climbing a steep hill and becoming short of breath and light-headed.

Moving bodies experience not only the effects of expansion and contraction along the muscles and in the joints and tendons of the limbs, but less obvious areas such as the abdomen, the ribcage, the jaw, the nostrils and the scalp are activated as well. Spindle cells provide feedback from structures as varied as the long *gluteus maximus* muscles in the legs and the inspiratory and expiratory intercostals between the ribs. The nose alone comprises five muscle groups ranging from the tips of the nostrils up to the bridge of the nose just under the forehead; all of these muscles are activated differently and each group provides different kinesthetic input in a single perceptual moment. The actual felt, whole- body perception is always a blended stew of numerous inputs received simultaneously that end up as "the perception" of *this* particular body engaged in *this* particular activity in *this* particular stimulating situation; emotions thus constitute an enormously large set of perceptual phenomena.

The complexity of the problem is not, however, a reason to forego a rigorous and systematic inquiry into how immersive volume and our movements through it are perceived, and why those perceptions carry the feelings they do. A painter must understand how colors, lines, shapes and textures on the flat surface of a canvas produce particular visual perceptions in order to know how those perceptions may be structured to convey the feeling the painting "expresses." Similarly, one who would create expressive art from the voluminal medium of nature must attend to the muscles throughout the body and try to understand how their activity—their various expansions and contractions—can be structured expressively.

We need not throw up our hands before the "ineffable" mysteries we experience while traveling through the natural environment. However complex and large in number the variety of muscle tensions may be, this activity is relatively easy to comprehend as compared with, say, the subtle goings on in the retina and the transformations that must occur to produce visual perception. Having identified kinesthesia as the perceptual product of locomotion, we have identified a major source of kinesthesia in the experience of landscape art. It is kinesthetic perception the landscape artist must understand and structure in order to create an expressive work of art.

## Kinesthesia In The Perception of Depth

### *Empiricist/Constructivist Theories Of Depth Perception*

The brief discussion above explains kinesthesia in connection with broad movements involving the musculature throughout the body: Limbs, torso, head, neck, even the smaller muscles around the eyes are sources of kinesthetic perceptions. Such gross body movement, locomotion, is one of the two essential modes of experiencing landscape. Visual depth, the perception of an immersive or surrounding volume, is the other.

The problem of depth perception as the *visual* perception of distance is, historically, a vexed subject. Philosophers and practitioners of optical science alike had conceived it as the problem of how the flat sensory image received on the retinas could result in the perception of three-dimensional space, how flat *proximal* bodily sensations can serve as the bases for our perceptions of *distal* objects. That various "lines" in the retinal image should be interpreted as "depth" rather than as mere "diagonal lines" is what is in need, according to these theories, of explanation. Two of volume's three dimensions are accounted for, so the thinking goes, by the height and width of the retinal image but distance, the third dimension, never occurs in retinal sensation. How, then, does it arrive in perception?

Descartes tried to demonstrate that the distance between the two eyes, or the angle subtended by a distal object, could serve in calculating the distance to that object; when the two slightly different retinal images are superimposed, an application of optical geometry, Descartes reasoned, yields an accurate measure of the distance to the object. Depth, then, is considered an ideal product, something inferred or calculated by operation of the mind. Among other problems troubling this account is the fact that neither the distance between his two eyes, nor the measure of the subtended angle is known to the observer. Even if the mind doing this calculation were a good computer—which it is not—the calculation would be impossible.

Another traditional approach that considered distance as something constructed from cues present in the retinas was proposed much later by Helmholtz who urged the notion of "unconscious inference" in which retinal cues were supposedly unconsciously integrated with previous experience of the body's movements in voluminal space. (Gordon 1998, 158-60 ) This account fails for a number of reasons, not the least of which is that it generates an infinite regress: Each experience of depth depends on the memory of a prior one. Moreover, there is no way of accounting for an infant's apparently accurate assessment of depth as he has no memory bank to draw upon.

This account also suffers from requiring an epistemological bridge from the ideal product of the intellect to the world it purports to reveal. For Berkeley, as for Descartes, the certainty that God exists and is involved in perception was sufficient to guarantee the veracity of our experiences of depth.

Scientists studying visual perception in order to build robots that can accurately assess depth—part of the Artificial Intelligence project-- have managed to devise computers that can, in fact, successfully navigate volume based on retina-like cues. This has prompted a number of theories of visual perception that model the visual cortex on a computer. (See, Gordon 1998). However, the analogy between the human brain and computers, though tempting, fails on many fronts, not the least of which is that "thoughts" are private phenomena we can decide to keep to ourselves and, in this respect, no mechanical device can be said to have thoughts. Insofar as a computer may be said to know the depth of a particular volume, it cannot possibly be the way the

human visual cortex arrives at the experience of depth: Computers not only calculate far more rapidly than the human brain can, they are built "knowing" analytic geometry and much more that humans cannot be presumed to know when they come to "know" depth.

The notion, unreasonable on its face, that an instantaneous perception is formed by complex computations persists, however, even in recent, more sophisticated theories of depth perception that do not utilize the computer as a brain model. For R.L. Gregory (1997), sensations serve as *hypotheses* generating predictions which are then tested in experience; error signals produce modifications, and the feedback goes back and forth until a coherent three-dimensional percept results. The process proceeds from statistical compilations in the brain which here acts like a computer. Artificial Intelligence research has developed a computer model based on Gregory's theory of visual perception, in which statistical functions are performed by a computer. This model, like others developed primarily for robots, works for computer-driven devices but ignores experimentally determined differences between computers and the human brain, specifically, evidence of how brain cells interact in processing information.

The fundamental problem with constructivist theories generally is that we are never conscious of the sensations from which construction is supposed to proceed. Nor are we ever conscious of the calculations supposed to be involved, nor do we experience the passage of time necessary to complete such calculations before volume arrives in perception. Infantile perception raises yet another powerful argument against constructionism: We see the world as volume long before we know how to do geometry.

*Gestalt Theory Of Depth Perception*

Gestalt psychology also provided a constructivist model in which retinal images were converted to depth perceptions, but in an *innate*, and almost *instantaneous*, process. The theory thus overcame objections based on the difficulties, unreliability or impossibility of calculation or memory. Further, the model employed appealing analogies to physical processes and properties commonly found throughout nature: the

surface tensions on soap bubbles and dynamic force fields that arise between electrically charged surfaces.

In the Gestalt model, retinal patterns were thought to set up "force fields" within the brain that resolved, as all electric fields do, into states of equilibrium that represent the "simplest" possible resolution of forces. (See, e.g., Kohler 1947) Depth, then, is that organization of retinal information that produces the most stable resolution of electrical forces, the interpretive strategy that, following the "Rule of Pragnanz," secures equilibrium most efficiently. (This is actually an application of the Second Law of Thermodynamics.) Although there was much experimental support for the *conclusions* of the Gestalt model (See, e.g., Kanizsa 1979), its brain model was eventually abandoned as empirically unsupported. (Bruce, Green *et al.* 2003)

The Gestalt model was valued, however, for having made the instantaneous character of depth perception understandable by eliminating "calculation" in favor of a non-conscious physical process—resolution of an electric field-- that occurs almost at the speed of light. Also in its favor, Gestalt theory was deemed appealing for its consideration of all perception as *activity,* a view in accord with a non-mechanistic concept of the human organism. Finally, Gestalt theory recommended itself as having produced an explanation of visual perception that considers experience a blended product of inner subject and outer object.

The vast quantity of empirical evidence in the form of subjective reports collected by the early Gestalt theorists (See, Wertheimer 2012) kept the theory alive in spite of the difficulty of verifying its brain model; as shall be discussed in greater detail later, Rudolf Arnheim developed a theory of art based on Gestalt theory which continues to help make sense of how visual imagery carries felt meaning. (Arnheim, 1954)

Recent research relying on sophisticated neurophysiological technology, (See, e.g., Sekuler 2012, and Spillmann, 2012) has discovered that two distinct areas of the cortex are involved in visual perception. One area registers responses to sensory stimuli, sensation; a different and physiologically separate area of the brain is activated in the transformation of sensation into perception that "goes beyond" or "adds to" initial sensation. This second part of the brain seems to "fill in" or disambiguate retinal images

to produce more stable and complete visual perceptions. This new research discloses that depth perception arising from a "flat" retinal stimulus can now be explained, using Gestalt theory, as the work of a cortical region distinct from the region that is activated by an objective stimulus. Thus, if the retinal image contains diagonal—"ambiguous"--lines, a *tension* between the retinal image and the organism's demand for clarity and stability (articulated in Gestalt Theory as "The Law of Pragnanz,") arises in the brain. This tension, presumably expressed electrically, is generated to meet the organism's survival needs for clarity and stability—resolution—of an unstable or ambiguous retinal image. The second cortical region, in clarifying and stabilizing the retinal stimulus, serves Darwinian interests by converting sensations to percepts that are easy and reliable to act upon for secure survival. Thus, recent brain research has not only revived the Gestalt theory of depth perception, it has evinced powerful empirical evidence for the view that innate subjective processes in fact intervene to alter and supplement initial sensory input, adding a *value* or *interest* aspect to neutral retinal stimuli.

Gestalt theory, in its newly resurrected form, then, provides a constructivist theory of depth perception that avoids time-consuming "calculations" in the transition from retinal sensation to felt perception. This leaves open the possibility that the ultimate perception may acquire a felt tone or qualitative sense emerging from the electrical tensions involved in the transactions between two areas of the cortex. (Later in this dissertation, the relationship between "tensions" and emotion or feeling will be seen to figure in considerations of how the landscape experience evokes feeling.)

A persistent problem with the Gestalt explanation of depth perception is that, like other constructivist theories, it hypothesizes a fixed pair of eyes focused directly on a single point. The question it is devised to answer is how the brain constructs depth from a flat *and absolutely static* retinal sensation. This theoretical starting point is not, however, where the perception of depth begins in ordinary experience, and is certainly not a suitable starting point for an inquiry into the experience of landscape in which the perceiving subject is traveling through and over a complex terrain. Could it be that theories of depth perception have traditionally encountered problems because of the point at which they have chosen to begin? Proximal sensation--retinal imaging—does

not ever occur consciously. What if a theory were to start phenomenologically, with *perceptions* of depth in ordinary—mobile—experience?

*Ecological Optics As A Theory of Depth Perception*

In order to avoid the dualism implicit in traditional constructivist theories, J. J. Gibson began not with artificially controlled points and rays of light directed at fixed vision, but with entire *surfaces* under illumination, the world as we actually see it. A perceptual "realist," Gibson opted to bypass retinal sensation altogether, and develop a radically different paradigm, "direct perception," which locates depth *immediately within* perception itself.

In the actual experience of depth, we rarely receive a static, unvarying view of an object or scene as constructivist theories all assumed. Rather, we constantly move our heads and eyes, we walk around the environment, things come into and pass out of view. Vision, in normal experience, is continuous and has a panoramic character. Objects are not normally seen in isolation, but in *environments*, in contexts, against backgrounds; the illuminated surfaces that come into view shift about with respect to their surroundings; vision occurs in a field of *movement*. The head and the eyes thus sweep through a wide range of nested solids and visual angles and discover a world of solid objects and slanted surfaces, all of which are immediately apparent by virtue of ever-changing, differential distributions of light.

Visual perception—like perception generally-- is an *active process*. The retina, Gibson concluded, is not at all the neutral and passive photographic plate supposed by the constructivists. It is a highly activated network engaged in perpetual rapid *scanning* in which shimmering patches of light sweep across retinal cells and disappear; the stimulus supposed to affect the retina is, therefore, in perpetual motion. The movements within each part of this sweeping flow are correlated within a *continuum*. Surface textures alter with motion that follows *patterns* of dynamic flow.

Bodily movements—movements of the limbs, for example-- play an essential role in vision. Textures that make up the array of moving light expand radially outward

around a central fixed point as we approach an object, the comparative granularities of surface textures providing *immediate cues* to distance. The visible world is thus perceived by scanning textured surfaces and centering their outward radial expansion in ourselves. The world that emerges is then wholly explicable in terms of dynamic stimulus correlates that exhibit temporal patterning *coordinated with bodily movement*. Perception of this coordinated bodily movement—kinesthesia—is therefore integral to the sense of depth.

Gibson's theoretical model accords special recognition to a particular surface, the ground: Depth becomes evident, Gibson points out, in patterns of flowing textures which arise as a result of *motion relative to the ground*. The ground not only extends away from the observer in the third dimension, it provides support for motor activity, and is involved in the equilibrium of the whole body, upright posture, and locomotion in general. Thus, depth perception is inseparable from the perceiving subject's sense of movement on the more macro scale; kinesthetic perceptions of orientation and movement are part and parcel of the visual sense of depth or, as David Morris (2004) put it, movement and depth are "two sides of the same coin."

Although movement along the ground provides visual cues of depth in the form of radially expanding light, and although scanning proceeds, in part, by virtue of the movements of the head and of the eyes in their sockets, these are gross, observable movements and we should not be surprised to find kinesthesia involved. But should we understand, as well, that retinal scanning of the "perpetually moving patches of illumination" noted by Gibson is the sort of "movement" that sets up kinesthetic sensations? Such "movement," after all, may amount to little more than the "movement" of an electric current or the activation of an electromagnetic field. In any case, we need not understand Gibson as arguing that the retina interacts with the kind of spindle cells that would need to be stimulated in order to set kinesthetic perception into play. My research has located no neurobiological evidence that such is the case.

However, Gibson's ecological optics *does* include a significant feature that brings kinesthesia very much into the processes by which depth perception comes about. Even when the body is not engaged in locomotion--even when no macro-scale element

of the body is in motion—the perpetual scanning that occurs on the retina does, in fact, activate the entire body, creating kinesthetic perceptions that are integral to the experience of depth. With his notion of the "affordances" that retinal scanning discovers in the experienced world, Gibson links retinal activity with processes within the entire body, processes that are bound to have kinesthetic ramifications. In the discussion that follows, I will demonstrate how Gibson's theory of depth perception draws kinesthetic perception into the activities of depth perception.

Depth perception, as a natural activity of a natural organism, carried on within the natural environment of illuminated surfaces, is *interested* activity. As a functioning part of a conative organism, the visual apparatus is forever questing for opportunities that will protect the organism and promote its survival. As a theory of subjective opportunity, Gibson's ecological optics begins where phenomenological inquiries into perception always begin, with an interested self that discovers a world inseparable from the subject that perceives it, a world saturated with value and significance. Most interesting of all in this context, it is a world that is available to us only because of movement, for it is through movement —scanning—that vision discovers affordances, the opportunities for survival embedded in the volume of the seen world.

Retinal scanning is, therefore, like all activities of a live organism, not a value-neutral mechanism. It is the activity of a conative, meaning-seeking organism, and so the world it scans consists of surfaces found to be encrusted with meanings, meanings for this particular organism in this particular situation in time. However, neither the retina nor the rest of the visual apparatus could be said to have "interests" as such in the illuminated world; the retina is, *in isolation from the rest of the body*, a mechanism for *recording*. It is the interests of the whole organism's nutritive, reproductive and self-protective body that condition affordances in the scanned field. Gibson's concept of "affordance" thus works his concept of visual perception around to a point where it engages the entire, interested, body.

The world seen is thus a world rich in affordances to which the entire body must respond; the perception of depth and the perception of opportunity or value are not two, but one, single perception. Volume is *per se* affordant. Scanning picks out not only the

textures of the illuminated surfaces in the environment and the radiating light patterns by which we determine direction, speed and distance; it picks out as well opportunities for the embodied conative organism. The world perceived through motion is a world of depth that is, *at the same time*, a world that interests and activates the entire body. Affordances thus move the visual inevitably into the domain of the kinesthetic, "moving the subject toward or away from them.

Interest, of course, is what moves muscles. To be "interested" in a situation is to be "moved" by it. To perceive an "object of interest," is to perceive movement, however slight, in the form of *tensions* along various muscles throughout the perceiving body. "Bad" odors and "good" odors, for example, have differentiated effects on the muscles around the nose. Visual depth that results from retinal scanning is, immediately, more than merely a retinal phenomenon; in the activity by which the retinas discover depth, they discover, as well, situations that "move" the entire, interested body. The retinas, as integral parts of a single organism, are thus, in part at least, starting points or "motives" for bodily movements that give rise to kinesthesia.

Gibson devised his theory of direct perception to account for depth perception in a way that is more rooted in actual experience than constructivism is, and in a way that avoids the absurdities into which constructivist theories had fallen. He was not, however, concerned to examine the way depth perception involves kinesthetic perception. The discussion here takes his concept of affordances beyond where he left it. With this extension, we make deeper and broader sense of John Dewey's—and phenomenology's—insistence that all experience is "interested." Experience of the world in depth is always experience that "moves" us by producing tension along the musculature throughout the body. Such tension, however slight, is perceived by the conscious organism as feeling attaching to the sense of depth.

An example will make clear precisely how Gibson's notion of affordance links the visual perception of depth to kinesthetic perception: When I look across my desk, my retinas are activated by changes of light that signal textural changes which cue, among other things, an object before me as round, three-dimensional and of a size that could fit in my hand. Within that very perception is the sense of the object *as* graspable.

This is not a conclusion from a consideration of the object's size, nor is it an inference from the recognition of the object as a tennis ball. Its grasp-ability is an immediate perception imbedded, as it were, in the perception of the object as spherical and of a certain size, a volume. The muscle-contracting activity of grasping is an integral aspect of the perception of the tennis ball.

But this perception of grasp-ability would have no consequences for me, would not truly be an affordance, if my body did not respond in some way, however gentle and minute. And I *do* respond. Whether with a tiny flexion of my fingers, or with a soft, fluid sensation in my right arm—a ripple of muscle tissue, my body responds to this affordance, this grasp-ability. Indeed, what would "grasp-ability" mean if I did not implicitly reference my own hand, its size, the possible movements of my fingers, and the length of my arm in comparison to the perceived distance—depth—of the ball? A sense of my arm and hand is thus implied by the affordance. Affordance is part of the perception of the ball as volume, indistinguishable from it; and so is the activation of a part of my body that could respond to the opportunity that affordance signals. The scanning motion of the retinas, an unconscious but conative activity, has set in motion activity beyond the visual apparatus, extending throughout the entire body. The visual perception of depth, it turns out, is a whole-body activity.

Suppose, as a second example, that as I rise to leave my desk, I turn toward the door and notice that it is partially closed. The pattern of light playing across the surface before me reveals a *lack* of opportunity: The heavy door is not fully ajar as it must be for me to charge directly through on my urgent dash to the bathroom. But I can squeeze through the doorway by rotating my body as I approach it. I perceive this complex arrangement of lighted surfaces as a structuring of spatial depth and *at the same time* as an obstruction that thwarts my intended movements. I am forced to alter my plans. I respond as I move toward the doorway by turning slightly so as to achieve my purpose without slowing my progress. I was about to charge directly through the door but, when I perceived the actual arrangement of volumes in space, I turned my body to avail myself of the environment's affordances, and I accomplished this in a single continuous body gesture that did not require complex calculation and the time such calculation

would ordinarily require. In this second example, my body responds on a macro level to the affordances presented in my perception of depth with broad movements of my limbs.

Thus, as scanning discloses depth, it discloses as well what my rounded, three-dimensional body must *do* with that depth. This is not a matter of learned behavior, nor is it a matter of inference. Both depth and what it affords are found *directly* within vision. We see depth as offering affordances that either meet or thwart the needs of the entire, voluminal bodily organism, and that entire organism responds immediately with expansions and contractions of the muscles distributed throughout it, eliciting kinesthetic perceptions.

Our response to illuminated surfaces is thus not a passive, immobile, neutral acceptance of their presence in our environment but, rather, an activation of spindle cells distributed throughout the body so that visual perception of depth arrives soaked through with kinesthetic perception. Depth perception, then, is never "purely visual" or "retinal;" it reverberates *instantaneously* through the entire body with felt muscle responses of contraction or expansion.

It is important to note in this regard that the currents or scanning motions on the retinas are themselves not being charged here with *causing* kinesthetic outcomes as a movement in one part of a system *causes* movement elsewhere down the line. Insofar as the movements involved in depth perception *also disclose affordances* to which the musculature throughout the body immediately responds, we are describing one single event. Although the entire process culminating in kinesthetic response starts in the retinas, and is nowhere mediated by calculation or inference, it is certainly not a process in which a retinal "image" could be described as "moving" a limb. Gibson's theory never reduces to Descartes'.

I have suggested that the updated version of Gestalt theory's brain model merges the actions of conative, interested, survival-oriented cortical regions with value-neutral sensory imagery to produce value-laden, interested visual *percepts*. In their outcomes, then, *both* Gestalt theory and Gibson's ecological optics may be understood to account for a transformation from mere sensory retinal recordings into evaluated, usable perceptions on which an interested organism can reasonably rely in *acting*.

In starting with the never-perceived retinal image, constructivist theories only succeeded in discovering the world viewed by the slaves in Plato's cave, a world accessed by immovable eyes in unmoving heads. This was, perhaps, a good first step toward attaining a world where nothing changes and where the only legitimate human interests reside in the static, eternal world of Ideas. In such a world, the interests of the human body count for nought. Where change and motion are suspect, the retinal image recommends itself as a worthy starting point for the desired goal, the attainment of intellectual certainty. In the world of experiencing bodies, however, visual perception discloses a moving world to a body that also moves.

### *Subjective Evidence of Kinesthesia in Depth Perception: The Experiences of Landscape and Painting*

Subjective examination of our responses to depth as compared with our responses to flatness may help bring home the extent to which depth perception activates the entire organism, as opposed to perception of flat surfaces. As a brief experiment that will recall the problems raised in the first chapter of this dissertation, let us compare the experience of landscape—through which we must move—to the experience of painting—before which we remain still.

When I stand before a painting, my body up close to the wall where the painting hangs, am I still perceiving Gibsonian affordances such that my entire body is activated with kinesthetic responses? As ecological optics is a theory devised to account for the immediate perception of *depth* and is not particularly concerned with aesthetic implications, Gibson does not raise this question. We, however, must do so.

It will be recalled that Berleant (1991) argues that landscape paintings, in their use of perspective and other artful devices, "draw us in." Movement and depth, he suggests, become part of the experience of painting notwithstanding that a painting lies flat against the wall, framed to announce it as distinctly other than the deep surrounding environment. Berleant points, as well, to optical art which, he argues, "engages" the viewer by compelling the viewer's intellectual participation much as Happenings compel the participation of spectators in theatrical performances. No one is merely a

spectator, Berleant claims, either at a Happening or in an art gallery; if we allow art to work its magic, we are "drawn in" and become "engaged." If we permit ourselves to become engaged—and even search out opportunities for engagement—we will discover that there exists no clear line, says Berleant, between the experience of a landscape painting and the experience of the landscape itself.

But experience flies in the face of such arguments. No matter how large and "realistic" a landscape painting, I am never induced to try to enter upon the winding country lane portrayed there; nor do I feel tempted to feed its goats or to run across its fields toward its horizon. In fact, I do not feel kinesthetically "moved" at all. Realism is not a quality of reality, but of certain representations of it.

To evaluate my subjective experience, I consider how it feels to gaze at a painting. I find that I encounter something foreign, distinctly not of my world, "not me." To "enter" into its domain at all, I must suppress awareness of my own volume, ignore my own body's depth. I must strain *not* to see the tip of the nose that insistently intrudes at the bottom of the visual field—perhaps just at the start of that intriguing country lane. I must ignore the blur that occurs at the borders of my visual field and attend only to what is clear and lies straight ahead. I must, in fact, suppress or ignore everything voluminal in the vicinity and agree to be guided by the borders set by the painting's frame. I agree to refuse to notice the velvet cordon separating me from the wall where the painting hangs, the uniformed guard forbidding me from reaching out a hand to sample the texture of the painting's surface, the grandmotherly woman with the pesky child on the verge of a tantrum. I keep as still as I can and wish away everything around me that is rounded or in motion. I abstract myself from my native, embodied, world in order to "enter" the painting.

Having excluded all I can of the voluminal world, I concentrate my energies around my eyes: The muscles surrounding my eyes and the muscles on my brow contract, my eyes narrow, my lids tense as I make an effort to stare, and so they feel a bit heavy. My entire consciousness eventually huddles around my eyes. Perhaps I am trying to become like those retinas that are so much more comfortable with this sort of experience; perhaps I am trying to *flatten* myself to retinal thickness.

In fact, I am trying to place myself where the painter who created this painted landscape placed himself. The painter has, through years of disciplined study, learned to address volume with almost brutal aggression so that he can actually collapse it into two dimensions. He has learned tricks with lines and color and texture; he's learned to manipulate shadings and sizes. But, most difficult of all, he has learned, sometimes with the help of a sheet of glass or clear plastic, to see only width and height. To accomplish this, I imagine he has had to learn to stand perfectly still and look perfectly straight ahead, not allowing his eyes to roam as they are wont to do. He has, in effect, trained himself to bring to consciousness the proximal retinal image that none of us ordinarily perceives. He has learned to regard light as millions of straight rays impinging on his eyes as millions of pinpoints instead of as the sweeps of illumination they actually are.[4] He has also succeeded in so vanquishing movement from his perception that he has all but extinguished the affordances with which visual perception is usually replete.[5]

By his clever use of perspective and other crafty tricks, the painter helps us see as he does. By setting a frame around his work, he demarcates "his" world from all else going on around us and induces us to "enter" it, to see things from his point of view. In agreeing to play along, we temporarily forfeit our autonomy and agree to see things as he wants us to. We are not free to roam through his landscape and discover it for ourselves, and all this feels, well… *unnatural*.

As we turn away from the painting, we momentarily refuse to look at anything else on the walls; we are intent on avoiding frames. The frame, we understand, is what cued our very restrained and uncomfortable behavior, it is what told us to draw ourselves up into the region of our eyes. We want a moment, now, to restore ourselves: We want to recover our own voluminosity, let consciousness again pervade our entire bodies—come back to ourselves. What we savor as we roam through the immersive

[4] Impressionist painters like Monet and Seurat who became fascinated with light, the activating sweep across illuminated surfaces, may have produced instructive diagrams of Gibson's theory of light but did not thereby produce more "realistic" paintings.

[5] Painters who have been particularly interested in movement—Degas and Niemann are obvious examples—also found conventions to signal movement; but I have no more fear of being trampled under the foot of one of Degas' galloping horses than I have of standing in the path of one of Neimann's boxers. The "movement signals" in their paintings do not feel like movement because, although they signal kinesthetic perceptions, they do not, in fact, stimulate such perceptions.

volume of the gallery is the whole-body activation that we experience in an actual landscape, the sort of experience of which the landscape painting temporarily deprived us.

Had Gibson addressed the visual experience of flatness, I believe he would have found it offering scant affordances. For, to say that the flat landscape painting offers affordances would be to say that it answers to the needs of the conative organism, that we find things either useful or harmful within our very perception of it. If my perception of a flat painting provided such affordances, I would feel some activation of my body when it occurred. Perhaps there would be a faint ripple along the muscles guiding my jaws as I

catch a glimpse, on the painted tree in the foreground, of a sweet and juicy pear; or there would be a slight activation along my arm as I unreflectively and very slightly move to pluck it from the branch.

But I do not salivate before a painting of a pear and I do not come alive toward it with the thought of picking it. Anyone who did actually reach for that pear would be trotted off to the asylum, or at least sent home for a cold shower. And the reason we do not consider reaching into a painting is not because we are rapt in an aesthetic mood, absorbed in detached contemplation of it. We do not "feel" the painting throughout the entirety of our bodies because it does not appear *in depth*, and it is in the perception of depth that we find affordances that activate the spindle cells along our musculature. We are not *moved* because the means by which we see—in the case of a painting-- is forcibly constrained. The presence of a frame separating the painting from the rounded, bodied world tells me to shuttle all my perceptual activity into my eyes and lock it there. I am to deliberately and effortfully re-enact the painter's own efforts at abstraction. The better the painter's technique in conveying things "realistically," the more we may praise his painting, but in delivering that praise, we are not suggesting that the pear on the tree has moved us to reach for it. We are saying that the painter has done a good job

of representation, and representation, we all know, is not the real thing. Flatness, we all know from the way it fails to activate the entire body, is not depth.[6]

The distinction between the painted "flat" landscape and the actual "deep" one becomes even more dramatic if, with eyes closed, we attend closely to the response of the entire body as we imagine ourselves viewing a painting of a landscape. When I do this, I sense a slight tautness at the outer corner of each eye; my eyeballs, so much as I can sense them, seem more than usually activated. On the other hand, when imagining oneself in an actual landscape, the sense of activation shifts downward, spreading eventually throughout the body.

We have sufficient body memories of the experiences of both paintings and voluminosity to be able to recall them quite vividly; in the absence of visual input, we can focus on those body memories. Indeed, we recall being surrounded by the landscape as an experience that affects the entire body; without preparing for any actual action or for movement of any kind, the mere imagination of a three-dimensional environment prepares the body for a move outward into it, for envelopment by it. Thus, in a simple self-examination we can discover the differences in the whole body between the experience of flat paintings and the experience of landscape. Ecological optics explains this difference as due to the activities involved in depth perception as opposed to those in which mere retinal stimulation is involved.

In viewing a painting, the body prepares to be led by the painter to a painter's way of seeing: The body retreats, draws itself back while the lenses of the eyes flatten to accommodate the width of the canvas. The rest of the body braces, as it would to encounter a stranger; it cannot activate what Juhani Pallasmaa (2005) so aptly calls "the eyes of the skin." In preparing to take in the *environment*, however, the body gears up for kinesthesia; it prepares to reach out to its familiar. For the fully-rounded, visually deep, world is, indeed, a *familiar* to a body that is itself a rounded volume. The body

[6] According to Colingwood (1958), to the extent that we are "moved" by a sense of depth in painting—say, in the paintings of Cezanne—we are responding not to the flat retinal image of the painting—what is purely visual-- but to imagined or recalled kinesthetic sensations that constitute a secondary aspect of the viewing experience, something the viewer brings to the experience of visual flatness, what he terms "an imaginative experience of total activity." (148) Collingwood's views are considered in greater detail in the next chapter.

opens itself outward to meet a world *of which it is a natural piece*. In the three-dimensional environment, we stand flesh within flesh, the world touching us at every point. This is the world we have always known, our native land, our home. The body here is, as Merleau-Ponty (1945) would have it, not merely *in* voluminal space, but *of* it.

## Kinesthesia Is An Integral Aspect of Depth Perception

We can now understand how prescient Berkeley's proposed explanation of depth perception was: We now know that before human beings access the world visually, we feel around in it with our limbs. The newborn initially understands himself as a part of the world-- and also as something distinct from it-- by motions of stretching and reaching, by contracting and expanding his limbs, rolling his head and eventually his trunk. (Piaget 1967) The habitual patterning through which voluminosity is initially known is thus a patterning of movements, of muscle tensions and relaxation (Morris 2004, 45 *et seq*). Well before he makes out distinct shapes beyond himself with the assistance of vision, the infant knows his own body as a volume having a front and a back, and sides he can roll onto (76). Volume thus enters infantile consciousness prior to any visual experience whatever. No wonder an infant can respond accurately to objects at a distance without knowing how to do geometry and without a bank of memories to draw upon.

Once volume has entered consciousness through experiences of extension and retraction of the muscles, vision can *then* be understood as placing its world at various distances, and distinguishing objects as separable from the self. The accuracy with which depth is perceived is likely to be a function of the familiarity of the situation; depth, per se, however, is a perception sourced in kinesthetic experience: It is precisely because we already have a sense of ourselves as volumes, immersed in a voluminal surround, that we are able to interpret retinal patterns of illuminated surfaces and their textural flow as differences in distance.

The old philosophical problem of how three dimensions emerge from flat retinal images thus proves a false problem. If we begin with experience, we understand that the construct is not volume but flatness. The voluminal aspect of landscape's medium is first sensed by receptors in the muscles, not by receptors on the retinas. By the time we come, as infants, to *view* the world, the finer-grained patterning or "folding" in the movement of the eye muscles results in our locating visible objects in an already familiar three-dimensional world (Morris 2004, 69 *et seq*). If anything is "constructed," it would be the flat world of the painter, the world constructed by applying geometry's concepts to the voluminal world which we first know kinesthetically. The effort the painter puts forth to make a painting is the effort required to overcome, or abstract himself from, the natural experience of kinesthesia.

We begin in the world as rounded bodies, sensing the world as "a surround." From this starting point, the flat retinal sensation is the theoretical construct, something never directly found in conscious experience. Anyone who has tried his hand at representational drawing knows just how difficult it is to compress three dimensions into two. Developmental psychology thus puts us exactly where we came out when we adopted Gibson's phenomenological approach to depth perception: We understand depth and movement as reciprocal activities; depth is, as Berkeley long ago surmised, not a matter of vision so much as a matter of kinesthesia.

For our investigation into landscape aesthetics, the crucial point made by ecological optics is that depth is experienced only as a result of *movement*--movement of the eyes which move in a head that turns on a body which, in turn, moves through voluminal space. Thus, both of the features we discovered as distinctive in our experience of nature—and so in landscape—rely on movement. It turns out that it is redundant to claim, as I did above, that the medium of landscape is both a volume *and* something to be traveled through; volume, to be perceived at all, *requires travel* on however small a scale.

## Considering That Kinesthesia Resolves Many Problems

Having seen how an understanding of kinesthesia contributes to our understanding of depth perception, we are now positioned to locate precisely where previous accounts of environmental perception fell short and, more important, we can correct some claims and untangle some conundrums bequeathed by those accounts.

*First*, we can respond to Arnold Berleant's claim that an aesthetics of nature and the landscapes that are made from it demands a theory of "engagement," a theory that makes no distinction between expressive art and nature, and leaves the decision to "engage" to the observer.

The best approach to the subject of landscape art is by way of the most fruitful and experimentally sound approach to the perception of depth, J.J. Gibson's ecological optics. Movement and its reciprocal, the perception of depth, are key to understanding our perception of nature, and ecological optics should be our model for understanding how landscape's artistic medium arrives in experience. This model begins with *direct experience*—the world as given in pre-reflective consciousness.

Having noted at the outset the essential role of phenomenology in our theory, we may go on to make some traditional distinctions nevertheless. For example, it is possible to distinguish expressive art from ordinary experiences, and so to distinguish the experience of a landscape from the experience of its raw medium. The "aesthetic attitude," which Berleant finds so repugnant to his "engaged" approach, can be understood as a specific form of attention that plays a critical role in sorting through central problems of aesthetics—both in landscape and in the arts generally. To say that landscape is a "kinesthetic" art, then, is to say that our aesthetic attitude toward it must include attending to our kinesthetic perceptions. It is kinesthesia that accounts for Berleant's rather vague "sense of engagement." "Engagement" and the "aesthetic attitude," therefore, do not mutually exclude each other.

Additionally, the claim by Berleant and others (See, e.g., Bourrassa, 1991) that landscape, as a "whole-body" art form, cannot ever be considered an art with an "art history" will turn out to be empirically false; landscape art involves the same sort of

expressive selection and shaping of its materials as does any other of the historical "fine arts" and, as such, possesses a venerable historical narrative, the narrative of a kinesthetic art form. What has been lacking in the experience of landscape is attentiveness to kinesthetic perception, a lack that is most likely due to the fact that walking through voluminal space is an ordinary, everyday activity, something we sometimes do in our sleep. There is no gallery or concert hall to signal that it is time to pay attention to a particular kind of perception, one we most frequently take for granted.

A *second* outcome of the exploration of kinesthesia is that there is no longer a need to regard experiences of the natural environment as "ineffable" or hopelessly "mysterious." Kinesthesia, it now appears, plays a double role in the perception of the natural environment: It is the means by which we sense our body's *movement through* it, and also the means by which we sense the its *depth*. Both depth and movement being key to the unique nature of this experience, it is essential that we fix clearly just what kinesthesia is and how it comes about.

*Third*, having recognized the centrality of kinesthesia in the perception of depth, it is now a relatively simple matter to distinguish between Berleant's notions of "engaged" and "disengaged" experiences. Although Berleant never considered pinning his concept of engagement to kinesthesia, I would propose that what he wants to accomplish can be achieved by defining "engaged" as "having kinesthetic consequences or import," and "disengaged" as its opposite. Happenings-- participatory theatre--could then be understood as involving the body in actual movements of the limbs, movements that are more acutely felt than are our responses to theatrical actions that are merely viewed from afar. The natural environment and the shaped landscapes of both city and country can be understood as activating large-scale kinesthesia as well as the barely-perceptible kinesthesia of depth perception. And painting, which stirs only the faintest kinesthetic responses but which expresses feeling through other means, would not have to be pressed into the preposterous position of being described as something we can actually "enter." Once "engagement" is conceived as involving movement, we can go on to trace the source of the powerful feelings certain "kinesthetic" art forms such as music and cinema elicit; we can also free ourselves to investigate the sources of feeling in

other, quite different, art forms such as painting and literature. Kinesthesia—perception of movement—as a classificatory concept for sorting through the fine arts, also clarifies what affinities landscape shares with the other fine arts.

A *fourth* outcome of placing kinesthesia at the center of our experience of the landscape is that we can articulate more meaningfully what Dennis Cosgrove intended by his distinction between "insider" and "outsider." Cosgrove, it will be recalled, diagnosed the Renaissance preference for a notion of landscape as a view to be enjoyed by a passive spectator as a symptom of the capitalist separation of leisure from meaningful work. The "insider" who works within the landscape enjoys, says Cosgrove, the richer, more real, experience as compared with the leisure class outsider who simply enjoys it from "an aesthetic distance." Cosgrove linked leisure-class distancing inextricably with visual perception, a connection always had remotely, "from the outside." While the essentially economic distinction between the worker and the leisure class spectator is a valid one, it does not, as noted earlier, help discover a remedy to the problems of landscape representation.

Cosgrove's fundamental confusion derives from not understanding that vision, as perception of depth, elicits kinesthetic, "engaged," feelings, and that even the leisure-class appreciator of landscape must travel through it, not merely gaze at it from a distance. But even remotely-experienced vision is not as "distanced" as Cosgrove supposes, nor is the "aesthetically" disposed visitor to a landscape necessarily standing outside it; landscape art is, like its medium, "immersive."

Our understanding of vision as including kinesthesia has revealed vision to be every bit as "active" a perception, and thus every bit as "engaged" as the whole-body sixth sense. The Gibsonian notions of "scanning" and "affordances" put the viewer as much "in" the landscape as one with "mere utilitarian" concerns would be. The difference between a utilitarian and an aesthetic interest in the landscape has to do not with where the experiencer is positioned—inside or outside—but with the focus of his attention, on whether he attends to the *feeling* a landscape elicits or to other matters such as the yield to be expected from its trees. The difference between the two types of experience stems from differences in what interests the subject in that landscape.

A spectator standing "outside" the borders of a landscape may still have kinesthetic perceptions, albeit far less intense ones than the person traveling through it; but this is due to the source of the kinesthesia—from depth vision or from locomotion--not to a clear-cut distinction between vision and the other senses. When vision is vision of depth, kinesthesia is an integral part of the perception.

A *fifth* benefit of taking kinesthesia as central to the landscape experience is that the notion of the "aesthetic attitude" can now be made clear. Berleant and Cosgrove denounce this attitude as a throwback to Kantian rationalist values. The work of art, so the old theory goes, derives its aesthetic value, its Beauty, from its connection with a spiritual domain; man can access this domain by way of reason and, so far as he is able to detach himself from all utilitarian—body-based--- interest, he is capable of aesthetic experience and, so, of aesthetic judgment. Detachment is what lies at the core of the traditional aesthetic attitude; what we must detach from, so the theory goes, is body-based personal interest.

Yet, the human body is by its very nature "interested," and vision is in every case interested as well. Perception of depth, understood as a scanning for the opportunities an environment will afford to further the body's instinctual interests, is, in every case, perception that activates the body, eliciting kinesthetic responses. These are not interests that can be renounced, or from which we can detach ourselves: Everything that is perceived is perceived as either good or bad for the organism.

Now, if detachment is impossible, does it follow that "aesthetic attitudes" are a human impossibility as well? I believe the answer is "no." To consider an experience for its aesthetic value is to focus on and revel in *how it feels*. It is entirely possible to detach oneself from concerns about utilitarian outcomes and locate the specific "feel" of a particular experience. In the case of successfully formed works of art, their feeling is so heightened, so concentrated and fore-fronted, that we are drawn to them and value them *for* those feelings. This is not to say we are "disinterested" organisms in the presence of art; rather, we are interested in art for the specific reason that it provides, as Dewey puts it, heightened feeling, something worthy of attention for that reason alone. (See, Dewey,

1932) As conative, valuing organisms, we are capable of attending to and valuing concentrated, heightened feeling among other experiences we deem valuable.

A *sixth* benefit of bringing an account of kinesthesia into the discussion of landscape art is that it is now possible to say with clarity why the site plan is so inadequate as a means of representing landscape. Landscape artists have difficulty employing site plans to inform their clients of what the finished work will be like because the site plan not only does not convey the kinesthetic impact of a particular landscape, it does not even *suggest* kinesthesia as the key perceptual mode for experiencing landscape. The client has no means of translating the flat visual object before him into the kinesthetic experience it purports to represent. What is a perfectly adequate guide for a builder is of no help to one trying to imagine the kinesthetic impact—the perception-- of the proposed work.

With an understanding that the missing perceptual mode is kinesthesia, the problem of representation can be re-conceived so that energies can be re-directed toward modes of representation that create both a sense of depth and a sense of movement. An awareness of kinesthesia's role in the experience of landscape has spurred a move away from two-dimensional drafting toward the use of both computer software that can simulate those two sorts of experience, and three-dimensional models on various scales.

The professional practice of landscape art should also be re-conceived by returning from the two-step process of "design and build" to the single, on-site, engaged process employed by Capability Brown and, later, by Frederick Law Olmsted, in which the artist is present *within* the work while the concept of it develops. Such a practice allows landscape ideas to emerge as artistic ideas do in the other arts: in their appropriate perceptual context.

Although there are many analogies between the arts of architecture and landscape, architecture does not admit of the possibility of conceiving the work "on-site." But as engineering considerations for landscape are far less consequential than they are in architecture, landscape design can proceed experimentally, in ways architecture cannot. The landscape artist who develops ideas within the confines of the flat site-plan, must ignore the way the work will eventually be experienced; the flat,

retinal information provided by the site plan is not only skimpy as compared with perceived voluminal reality, it is misleading and counter-productive to the emergence of fresh ideas.

A *seventh,* and profoundly significant, consideration is that a full understanding of kinesthesia and its role in the fine arts will re-interpret and help resolve a central problem of philosophical aesthetics: How can a mute object "carry" or "convey" feeling? Philosophical attempts to account for expression inevitably lapse into metaphysics, often the very metaphysics their proponents claim to eschew. Dewey (1932), for example, theorized that the artist's feeling "selects" objects and qualities that "resonate" with it so that the work of art then "carries"—or expresses-- that feeling. Dewey's is a theory deeply rooted in experience that locates aesthetic experience on a continuum with ordinary experience. However, even Dewey was unable to tell us much about the "resonance" that is so central to his theory of expression. Once the connection between kinesthesia and feeling is understood, "resonance"—along with Langer's notion of "virtual feeling" (1953) and other metaphysical constructions—will become empirically grounded. (This will be the work of this dissertation's final chapter.)

## A Walk In the Forest: Kinesthesia In Landscape's Aesthetic Medium

The natural environment is the medium of landscape art, the "material" given form by the artist with the deliberate intent of creating, conveying or expressing feeling worth attending to for its own sake. A long history of misunderstandings about how this medium is perceived has resulted in unnecessary and destructive restrictions being placed on its mode of representation; there have also resulted serious errors in saying just what landscape art is and whether it is art at all. Before we inquire further into the concept of landscape *art*, let us pause one last time to consider the perceptual qualities of its medium, aware, now, of the fundamentally kinesthetic aspects of the experience of the natural environment. An ordinary walk in a forest will reveal the multitude of ways

that kinesthesia conditions and constitutes such an experience and will help clarify a few points about it that have not heretofore been considered.

Setting foot upon a path that will lead us through the forest, we immediately discover that nature, whether leafy or sere, spare or abundant, comes into perception as an almost unbearably rich blend of perceptions. We are surrounded by it, enveloped by it, immersed in it. We are as aware of it as being behind and to the sides of us as we are of what lies ahead; it shows us, in Juhani Pallasmaa's phrase, the "boundaries of our own skin," (2005) and draws out our inner space beyond what we perceive as our own bodies, to what Gaston Bachelard called an "intimate immensity."(1969, 183)

But immediately we must stop to re-phrase what little has just been said. For it is neither inner nor outer "space" that floods perception: Landscape's medium is not mere space. What surrounds us is alive with dynamic tensions, both visual and kinesthetic, that constitute the expressive possibilities that the landscape artist must exploit. It is these tensions that the artist must sort through and structurally integrate into his work. This rich combination of perpetually shifting felt forms pervades our experience and accounts for the intrinsic "feel" of the place-- its *genius loci.*

In an experience of environment, we sense ourselves *within* it by kinesthetically sensing ourselves as bounded, rounded presences, by sensing the envelope of our skin protruding into it. Attuned to the tactile, kinesthetic, aspects of our experience *in* the forest, we discover a rounded, perceiving, skin-wrapped self *within* it, sensing it as it sits upon our shoulders, rises at our backs, rests heavily—or not so heavily—on our upper thighs as they cut through it on a walk. We know this surround not as intervening neutral "space," but as the highly charged perceptual situation itself.

Physical space, conceived as a given that precedes any objects in it--a boundless container that would exist even if it were completely empty--is a Cartesian construct that appears nowhere in actual experience. It is the Newtonian absolute base of reference against which distances, velocities or sizes—quantities-- are measured, a system of geometric coordinates to which all locations, sizes or movements in three-dimensional space can be related in the calculations of the abstract sciences. We may speak of objects being *in* space in the sense of "taking up" space; but we do not speak of an object as

"taking up" natural environment or landscape. We can refer meaningfully to the *amount* of space in a bottle or a box, but it makes no sense to speak of the amount of natural environment or landscape or life-world. Space is measurable in a way that environment is not. The experienced environment, unlike conceptually constructed, abstract, space, though rich in *qualities*, is not quantifiable.

It follows that things *in* the environment are not "in" it in the same way that they exist "in" space; things in the experienced environment are where they are by reference to an observer and in relation to other aspects of the observer's experience. Objects in space are locatable by reference to externally imposed, feeling-neutral, Cartesian coordinates. The environment is always *someone's* surround; the experienced relationships among objects in the environment establish dynamic force fields within *someone's* experience that ultimately give rise to the felt qualities of those objects-within-that-environment. Thus, *perceived* space is never absolute or empty; the perceiving subject is always present as a point of reference, as a body establishing dynamic tensions within the surround. It is the presence of the perceiver's body that imparts structure and so, felt form, to space, giving it its up and down, its left and right, and determining sizes as large or small, distances as far or near, and velocities as fast or slow. Perceptual space, as Rudolf Arnheim (1977, 13) put it, is space in which "vectors" organize dynamic tensions. Space is always an alive complex of force fields set up by imagined lines perceived as running from observer to object, and from each object to others in the perceptual field with respect to the observer.

The natural environment is usually organized by a horizon that serves as a reference point from which the body receives specific orientation, an orientation that continually changes as the body moves. Muscles throughout the body adjust to shifts in orientation, responding with contractions and expansions. The natural environment is also intrinsically directional, for the observer's body cannot escape the effects of gravity. In just the first few steps of our walk along a forest path, we find the natural environment vibrating with dynamic tensions that shift as we travel, providing a rich variety of kinesthetic perceptions.

The environment cannot be present to us except as present to our bodies; and our bodies cannot be present except as *in* an environment. Unlike the case with Newtonian "space," once the body is present, reference points are established and dynamic lines of force are drawn. What was theoretically neutral space is "an environment," *someone's* environment, something with qualitative character, not merely measurable, quantitative dimensions. It is this dynamic feature of the environment that is accentuated when it is transformed into landscape art; through the work of the artist, it becomes an entire situation *for* a human body that heightens feeling for that body and thus expresses that body's most human values.

Surrounding us on this forest walk are trees and shrubs of many shapes and colors. As we rotate our heads, scanning the environment to take it all in, we encounter a continuous panorama that seems to bend and wrap around us. Our heads and eyes move to keep it all in view, but the visual field presents us with a blur at its periphery no matter how much we turn to include—and thereby clarify—it. Whether our focus is near or far, the blur persists. Like the protruding, intruding presence of our noses, it is an ineradicable aspect of our visual field. It is one way we know we are in a three-dimensional environment. Thus we know volume instantly by referencing the periphery of our visual fields and…our own nose tips; our own bodies are the presence that "tips" us off to volume.

It is because of the peripheral blur and our desire to make the visual field perfectly clear, even at the edges, that we begin to rotate our heads and move our eyes in their sockets. It is the peripheral blur that initiates movement of the head and eyes. Thus, the same element in vision that cues depth also triggers a larger-scale kinesthesia. We experience tensions in the tiny muscles in the sockets of our eyes and also in the muscles of our necks and shoulders. Our facial muscles, too, respond with expansions and contractions, as do the muscles in our throats and ribcages. Even as we stand rooted to one spot on the forest path, kinesthesia swamps perception.

Scale exists as a relation and so, as we move through the sea of constantly shifting shapes and sizes, our perception of our own shape and size alters as well, a dizzying experience that forces intensified awareness of our own bodies upon us. As the

path rises or slopes downward our awareness of ourselves as affected by gravity calls into consciousness our connection with the surface on which we are moving, its textures, degree of resistance and the enormity of what lies beneath it. We are forced, as we move along, to make sometimes more and sometimes less effort to keep going. Muscles in our ankles, legs, hips and knees are required to stretch; muscles on the tops, sides and soles of our feet are activated. The natural shaping of the Earth's surface results in constant re-shaping of our own bodies, and with each tiny adjustment, muscles expand or contract. Through the soles of our feet--the way the fleshy pads curl over or around things beneath them—we encounter softness or hardness, roughness or smoothness, our toes stretching or knotting. We sense the resistance or accessibility to motion of the place we are moving through: It is more or less easily penetrable, more or less inviting--and these affordances trigger their own complex set of responses.

As we strain to see over a ridge or to glimpse a faraway tree, we stretch ourselves up, straightening our spines and thrusting our chins—more muscle movement. Our ribs move in our chests as our lungs expand and contract, drawing the breath necessary to continue on our path. The respiratory system, often overlooked in considerations of kinesthesia, is one of the most sensitive because of the density of spindle cells situated along the ribs, and in the throat and abdominal regions. Oxygen intake, heart rate (another muscle) and blood pressure affect the muscle tissues surrounding inner organs; movements of the diaphragm are felt along the torso in several groups of muscles. Throats and nostrils respond to the climate and to fragrances and, again, head and facial muscles are activated. Changes in temperature and humidity produce changes on the skin surface, causing more contractions and expansion--more kinesthesia. The shape our path takes and the condition of its surface also induce a variety of *rhythms* within us. Sometimes we can maintain an easy gait and sometimes all effort at keeping a steady rhythm must yield to the demands of the steep or rutted terrain.

In what we might conceive of as a "secondary layer" of the experience, both kinesthetic and visual aspects of it are likely to carry *associated* meanings: Fragrances or particular plant species may recall past experiences and revive entire buried narratives,

each one either unique to a particular visitor or conditioned by the culture and so shared by others. Some of the memories called up are of previous walks in this same place, some relate to what we experienced elsewhere. Memories stir not only visual imagination, but "gut reactions" that elicit kinesthetic responses throughout the body.

What has been said of our experience of the natural environment holds true when nature becomes the medium for the expressive art of landscape. The task of the landscape artist is to manipulate this initially charged space, selecting and subtracting from it, optimizing its naturally expressive qualities, its *genius loci,* in order to create and resolve specific tensions in the walker.

It is now clear that landscape's medium arrives in experience by way of movement, both the fine-grain movements of the eye which reveal depth, and the grosser movements of the limbs as they transport the body through it. Kinesthetic perception is generated, as well, by shifts in attention that produce postural alterations, and movements that occur as the body adapts to changes in terrain. In what follows, I will compare landscape, a "kinesthetic art form," with other arts in order to determine landscape's place among the fine arts.

# CHAPTER THREE:
# THE ROLE OF KINESTHESIA IN THE ARTS, AND ITS UNIQUE ROLE IN LANDSCAPE ART

Having specified the *medium* of landscape art as the natural environmental volume presented to the entire moving body, I now propose a definition of landscape art itself. Taking into account that the landscape artist must not only structure kinesthetic experience but must also give form to visual experience —colors, shapes, textures—I propose that landscape art *shapes the experience of moving through immersive volume as a structured sequence of both kinesthetic and visual perceptions to produce a continuum of specific feeling.*

We have seen that kinesthesia is central to the experience of landscape's raw material, the natural environment. It is elicited as a complex perception by locomotion, one way landscape enters experience; it arises as well in the visual perception of depth, another essentially kinesthetic means by which we experience landscape. It follows that a theory of landscape aesthetics must account for the formal structuring of kinesthetic perceptions in the creation of expressive art.

In this chapter, I examine two related aesthetic theories, both of which locate aesthetic enjoyment in bodily "tensions:" Heinrich Wolfflin's theory of modeling which traces felt aesthetic responses to muscle tensions, and Gestalt theory which considers electrical tensions in the visual cortex as the source of feeling. These two complementary theories collaborate in varying proportions to explain human responses to each of the fine arts, including landscape which relies on *kinesthetic* responses to an extraordinary degree and in a unique way.

Before discussing the two theories of how landscape expresses—both, kinesthetic theories of aesthetics-- I pause to draw a distinction between "emotion" and "feeling." This distinction is taken from Anthony Damasio's larger theory of consciousness, a theory I discuss in much greater detail in Chapter Five where I rely

upon it for a deeper understanding of landscape aesthetics. After explaining the two kinesthetic theories of aesthetics that help articulate what occurs in the experience of landscape and in the arts that it embraces, I attempt to meet the criticism that these two psychology-based theories reduce art to mechanism rather than acknowledging it as the highly spiritual human enterprise it is. Finally, I demonstrate how the two theories can be applied to produce a fresh analysis of a particular landscape style, the Cottage Garden.

## The Psychology—and Neuropsychology—of Kinesthetic Aesthetics

The final chapter of this dissertation will explore the distinction between emotion and feeling, and the ways contemporary neuroscience understands the relation between feelings/emotions and kinesthesia. With those issues better resolved, a model will emerge of how formal structuring of nature's raw materials into expressive landscape generates the feelings that it does. At this point, however, I briefly digress to distinguish "emotion" from "feeling." Aestheticians often use these terms interchangeably but, as will become evident later in this dissertation, much depends on discriminating them and understanding how they are related both temporally and causally. This will help clarify how kinesthesia enters into the two psychology-based theories of aesthetics I rely on to discuss landscape and how kinesthesia functions in the reception of the fine arts generally, each of which finds a place in the *Gesamtkunstwerk* that is landscape art.

Contemporary neuroscience substantially validates the James/Lange theory that an *emotion* is a purely physiological reaction to external events, an occurrence in the body produced reflexively by those events: "(T)he emotional brain processes not only resemble the ordinary sensorial brain-processes, but in very truth are nothing but such processes variously combined…." (James 1884) This view amounted to a radical rejection of the more intuitive traditional view attributed to Aristotle that emotions are aspects of cognition, desires that *follow upon* body events, filtered through intellect and occurring later in time to the event which first must be reflected upon.

The difference between these two views was made clear by James himself in his famous "bear example." According to traditional Aristotelian theory, I see a bear and reflect on what is likely to happen to me unless I run; this stirs a *feeling of fear* in me, a desire to flee which is an entirely mental event. Upon fleeing, I experience an increased heartbeat, sweating, trembling which I attribute to my prior internal feeling. James countered this by arguing that, upon seeing the bear, I *reflexively* begin to sweat, stop swallowing, stop digesting, tremble and run: "(T)he more rational statement is that we feel … afraid because we tremble, and not that we tremble because we are fearful…."(190) Emotion is, then, simply a name for the complex set of *reflexive* and *physiological* occurrences that affect the sensory receptors throughout the body; the fear that is felt is the conscious perception of these physiological changes. In James' account, emotional behavior is not caused by a prior, unobservable, *mental* event; behavior is determined by the situation and can be explained by referring to movements that were, or perhaps still are, useful in an evolutionary sense.

A reflexive response, an emotion, is thus the start of *both* the recognition of a situation as a source of feeling and the *feel* of that situation. When a bear lumbers into view, the body instinctively prepares for flight in a complex of bodily changes that ready it for action. The bear, according Dewey in his work on James' theory, is first perceived as a bear-to-be-run-away-from when the feeling of fear as the "feel" of complex physiological changes arises. Both are dependent upon the reflexive behavioral response.

The contemporary neurobiologist, Antonio Damasio, (1999) developed experimental proof of James' counterintuitive position in experiments with patients who, after suffering damage to the orbitoprefrontal cortex, were unable to experience any emotion at all. Damasio concluded that the emotions all spring from *awareness of the current state of the body.* Emotion, says Damasio, is a bodily reflex that may go on unnoticed, out of consciousness, as part of the body's survival mechanisms. Awareness in consciousness of bodily reflexive movement is the perception of that movement and that is what we "feel." Bodily movement as sensed, he terms "emotion;" when that

sensation becomes conscious it is perceived as an event belonging to a self, and so becomes perception of something felt, a "feeling."

What the James/Lange theory and recent confirming research make clear is that kinesthesia—muscle tensions occurring throughout the body as it responds to a situation—is not merely a factor in feeling and emotion, but that perception of kinesthesia, perception of muscle tensions and various biochemical changes that result, *is* the feeling of an underlying movement, an underlying emotional state. "The feeling of what happens," says Damasio, begins as a response to an interaction between the organism and something outside it, a "movement" made in response to events. An emotion enters consciousness as internal movement is represented to a self. The consciousness of emotion—of kinesthesia—is what may be termed "feeling." All of consciousness is thus the "feel" of kinesthetic responses, often tiny responses, to what happens to the organism.

Various patterns of kinesthetic responses arising throughout the body are correlated with specific feelings. When the perceptual situation is deliberately given a structure or form with the intent of eliciting a particular set or pattern of kinesthetic responses--that is, when it is art---it elicits specific felt correlates of that kinesthetic pattern. Expression, the communication of feeling in art, thus depends on a work's capacity to generate the tensions—or kinesthetic patterns—we identify as familiar feelings.[7]

Landscape, as may be evident now, is an art form that, like opera, engages many different arts in a single, perceptually coherent work. By understanding how kinesthesia—and, so, the *feeling* of kinesthesia—is generated in each of the arts landscape incorporates we may come to understand how landscape art expresses feeling.

[7] The means by which specific kinesthetic patterns come to be correlated with specific feelings is a subject treated in depth in Chapter Five.

## Two Aesthetic Theories That Base Expression On Kinesthesia

### Wolfflin's Theory Of Sympathetic Modeling

In his "Prolegomena to a Psychology of Architecture," Heinrich Wolfflin (1886) sought an explanation for the felt human response to architecture. His theory of "sympathetic modeling" is, by contemporary standards, a primitive one; however, it can provide important insights into how kinesthesia is called into play in what initially seem to be purely visual experiences. After providing a brief account of the original theory, I will offer a small revision that I believe renders it more modernly acceptable and aligns it with the findings of current neurological research.

Wolfflin rejected the traditional view that felt responses to architecture—and, by extension, other visual art forms-- are rooted in ocular tensions. Optical properties, he pointed out, play no role in feeling apart from the pleasure or pain associated with alterations in the intensity of light. Rather, architecture's felt meaning is experienced when we "sympathetically model" its various forms.

> We have carried weights and have experienced what pressure and counter-pressure are; we have sunk to the floor when we could no longer resist the downward-pulling weight of our exhausted bodies. And that is why we can appreciate the proud good fortune of an upright column. (4)

Wolfflin argued that it is because we live in the same world as buildings, subject to the same forces of gravity, that we are able to "sympathize" with them.

> We impute our own image on all appearances. What we know as theconditions of our well-being, every other thing shall also possess….(w)e conceive of the world of physical things in categories … which our bodies have in common with physical things. And in so doing, we define the expressive capabilities of these extra-corporeal formal configurations…They can only communicate to us that which we ourselves express with their properties and characteristics. (7)

Of course, the suggestion that we sympathize with seen inanimate objects opened Wolfflin to charges of anthropomorphism. Wolfflin, however, fully recognized that the

notion of sharing experience with inanimate forms seems naïve; nevertheless, he insisted that that was precisely his point: The sense of sharing that makes inanimate form expressive occurs only "when we shed the shells that education has built up on us and let ourselves lapse into a "will-less" state, giving ourselves over to the object, immersing ourselves in it." (11)

A felt response to a visual image is, according to Wolfflin, not a product of personal psychological association; it is not that the image reminds us of something previously seen in the course of a personal history. Rather, the response is spontaneous, reflexive, a perception that occurs automatically, deep in the body's *musculature*. Kinesthetic responses called up by an image are *body-memories,* kinesthetic memories, which are instantly part of the visual experience. Such body-memories are of universal human experiences, the experiences of a living body inhabiting Earth's gravitational field. The kinesthetic memories called up when we engage in sympathetic modeling, therefore, tap into the basic experience of humanity as bodily.

"Sharing" felt content with inanimate objects occurs automatically:

> One cannot free oneself, not even with a long educational process, from the impression that a figure whose state of equilibrium is disturbed cannot feel itself well. And indeed, will this compulsion ever die out? I think not. It would be the death of art. (4)

The mechanism by which sympathetic modeling occurs engages the entire body:

> We assess the feeling-of-being of an architectural work in terms of our corporeal constitution in which we are put through those feelings. Powerful columns evoke in us energetic innervations. Our respiration adjusts itself according to the narrowness or the expanse of our spatial circumstances. We react as though we ourselves were those load-bearing columns; we breathe deeply and fully as if our chests were as wide as those halls; asymmetry often makes itself felt as physical pain. We feel as if we were wounded or even missing a limb. (7)

Before dismissing Wolfflin's theory of "sympathetic modeling" as primitive or naïve anthropomorphism, let us note the significant point it brings home: *A visual*

*stimulus is expressive of feeling because it involves a kinesthetic perception.* Without activation of the muscles—in the throat, ribs, lungs, abdomen—the visual perception of a Gothic cathedral would, according to Wolfflin, convey no feeling.

Sympathy, through which the perceiver imagines his own bodily posture as conforming with the shape of, say, a column, is what allows him to "model" the thing seen, and this modeling, in turn, moves the muscles. The imagined kinesthetic pattern presumably includes drawing back the chin, squaring the shoulders, lifting the chest—a pattern that correlates with feelings of pride or triumph.[8] Without such engagement of the musculature—without kinesthesia—we would experience, says Wolfflin, "the death of art."

The *imaginative act* Wolfflin conceives as "sympathy" here is not the act of intellectual intuition that holds a critical position in so many traditional aesthetic theories. In those theories, where the question is one of expression generally, the answer provided is that human imagination is what endows brute physical matter with "feeling" by somehow reaching into an intellectual realm that only the human mind can access. Thus Langer (1953), for example, argues that a melodic line is not perceptually experienced by an animal; the animal hears only sound. What organizes that sound into a melody that travels "up" the scale or "down" is the forming, structuring work of human imagination that can retain in consciousness over time the individual sounds and work them into a coherent, felt, pattern. Human beings, according to such theories, are the only creatures able to join brute sounds into a "spiritual" or "virtual" *form*, a work of art. The material body can only hear material sound; human consciousness, through its "higher" faculty of imagination, can intuit form, and it is form, the argument goes, that is felt as expression. Thus the traditional aesthetic theory rests upon a notion of Man as a "higher" creature who can perform the synthesis required to transform a brute object into an expressive one, who can "lift" mere sound into the realm of music.

I read Wolfflin as arguing something quite different. In Wolfflin's view, kinesthetic body-memory is triggered by seen form because of an innate, hard-wired, tendency to *model* seen shapes. It seems we naturally seek out "friends" in the world

[8] As will be seen in Chapter Five, developments in neuroscience, particularly the experiments of Nina Bull, in fact establish clear correlations of postural attitudes with specific feelings.

around us and look *instinctively* for common ground with them. Not surprisingly, we find much common ground in the bodily—physical—conditions we share with most objects. The shapes of sculptures, for example, are immediately perceived as body shapes by an interested body that naturally, *automatically*, models them. Body-memories —kinesthetic memories—thus saturate our visual perceptions, lending a kinesthetic quality to what is seen. The seen is also the felt because of a hard-wired bodily process that Wolfflin could only insist must be occurring, but which contemporary neuroscience has validated empirically.[9]

But the suggestion that we "sympathize" with inanimate objects still offends contemporary philosophical attitudes, and I would argue that it is not essential in Wolfflin's theory. Whether or not we feel "sympathy" with the columns of a building is not the critical point; what is important is that we *instinctively and automatically imaginatively "model"* our visible surroundings and that, I believe, is something we can agree we in fact do. In a wide space, we inhale deeply, expanding our chest cavities; in a high-ceilinged cathedral, we stretch ourselves vertically to "take in" the steep space. People in a crowded pub "shrink themselves down" in order to mingle more easily; in a luxuriously large hotel room, we "spread ourselves out," expanding the body's muscles as we try to expand our own volumes. It is a natural response to an interior space to try to fit into it, whether that makes us smaller or larger.

We not only model our surroundings, we also model objects within them. The Eames chair is universally admired as a work in which form is perfectly adapted to function and that, so the argument goes, is the highest standard of beauty a functional object such as a chair—or a building—can attain. To say "form follows function," however, is to say we *see* immediately from its *form* that the chair will be a pleasure for the body when it is seated there. The *seen* form, the visually perceived image, must suggest, and invite, a particular sort of *activity* of the entire body. It is one's body image one imagines—kinesthetically—superimposed on the visual image of the Eames chair, that leads us to judge the "fitness" of form to function.

[9] See, Chapter Five.

The aesthetic standard for functional objects thus translates to: Does the visual image suggest ease, grace, efficiency—the pleasures of bodily wellbeing—in the work's fulfillment of its function? To answer this question, we utilize body memories to imaginatively "model" our use of the object. Although we may not "sympathize" with visual objects, we often perceive them in relation to use *by the human body*. This is, of course, a restatement of Gibson's notion of affordance: When an object exhibits a good fit of form to function, it is because the visual image of the object suggests ease and comfort in the body's use of it, an "opportunity." Vision is, in Gibson's understanding of it, imbued with the entire body's biological needs. The visual is implicitly *kinesthetic.*

Wolfflin's theory of "modeling" supplies an explanation of how what initially seems to be visual perception comes to acquire a kinesthetic—felt—component. This kinesthetic component, however, depends on our instinctively imagining our bodies in the form seen, and on our instantaneously calling up sufficient kinesthetic memory to endow that visual image with kinesthetic response. Clearly, much will depend, then, on the kinesthetic awareness of the subject, and on the strength of the kinesthetic memory of that subject, factors that will differ from subject to subject. But the activity of modeling is not a conscious, intentional activity that occurs over time: Visual imagery is understood as automatically, unconsciously, endowed with kinesthesia; only the *strength* of the kinesthetic perception will vary from person to person as a function of his individual susceptibility to kinesthesia and his or her ability to retain kinesthetic perceptions in memory.

Stripped of its anthropomorphism, Wolfflin's theory can account for the kinesthetic aspects of perception in the arts in general and in landscape art in particular. It is, in its "updated" form, a theory that has found surprising validation in recent investigations into the sources of felt responses to visual imagery, and it coheres well with other theories of how visual perception acquires its felt qualities. It will therefore be integrated, along with Gibson's theory of affordances and the Gestalt theory of visual

perception described below, into the comprehensive theory of landscape as art that is being developed in this chapter.[10]

**Arnheim's Gestalt Aesthetics**

Another theory of how perceived objects come to be endowed with felt qualities is Gestalt theory. It arose from experiments involving visual perception performed in the early twentieth century by Max Wertheimer (See, King and Wertheimer, 2007.) Following Wertheimer's research, Gestalt psychologists found wide agreement across populations in subjective reports about the felt qualities of such formal visual relationships as line direction, figure and ground relationships, color relationships, textural qualities, visually perceived movement, shape, and changes in shape. They concluded that felt qualities of visual perception must be due to innate processes occurring in the electrical fields of the visual cortex. Gestalt theory is thus a theory that explains feeling as based in *visual* experience itself. As I hope to demonstrate, Gestalt theory can be understood as coherent with Wolfflin's theory, a visual component in a broader theory that understands all aesthetic response in terms of *bodily tensions*; muscular, kinesthetic tensions, like the visual tensions the Gestaltists postulate, are, in the end, electrical activations in the brain.

As discussed in Chapter Two, above, the original Gestalt theory held that visual perception is accomplished by activity in which traces on the external sensory organs—the retinas-- result in *isomorphically* structured traces in the "force fields" of the brain. These force fields, like electrical fields in general, tend toward equilibrium. Following the Rule of Pragnanz, Gestalt psychologists argued, the brain's fields tend to organize themselves into the simplest possible resolution of forces. (See, e.g., Koffka, 1935)

[10] Wolfflin's theory of modeling implies that bodily posture—one way of modeling the shapes of other objects—does more than *express* a subject's feeling. Posture is certainly a gestural cue frequently relied upon to assess another's inner state. But Wolfflin's theory implies that, *conversely*, posture and gestural movements generally *elicit* feeling within the subject. Wolfflin was ahead of his time in this; much recent research confirms that this is indeed the case, a fact that will be further elaborated in the final chapter of this dissertation.

Fields do, in fact, resolve into the most equilibrized states possible, and Gestalt theory simply treated the brain in its processing of stimuli as an ordinary electric field undergoing a disturbance. The theory understood the visual cortex as "struggling" to maintain its equilibrium when disturbed by a dis-equilibrizing retinal image. Visual perception thus overlays the initial retinal trace with felt *tension*.

As discussed in Chapter Two, the old brain model was discarded and replaced with a model that fully accounts for the empirical evidence, one that is now accepted as valid by present-day neuroscientists. The new "two-region" model retains the significant features of the old Gestalt model in that 1) it attributes the felt qualities of neutral objective stimuli to an innate brain process which 2) can be understood as equilibrizing tensions. The model thus retains the concept of 3) a cortical "struggle" to present balanced, stable, usable information in perception.

In 1954, Rudolf Arnheim developed a theory of aesthetics based upon the Gestalt theory of visual perception: Art organizes the intrinsic dynamic tensions in visual elements to heighten the felt impacts such elements naturally possess in perception. Thus, the artist begins with visual phenomena that are, by their very nature, freighted with "psychological forces," with felt tensions.

> What a person or animal perceives is not only an arrangement of objects, of colors and shapes, of movements and sizes. It is, perhaps first of all, an interplay of directed tensions. These tensions are not something the observer adds, for reasons of his own, to static images. Rather, these tensions are as inherent in any percept as size, shape, location, or color. Because they have magnitude and direction these tensions can be described as psychological "forces."(11)

According to Arnheim, the tensions set up in the brain as it struggles to furnish perception with equilibrium explain the felt values carried by various visual perceptions:

> Why is pictorial balance indispensable? It must be remembered that visually, as well as physically, balance is the state of distribution in which all action has come to a standstill. …In a balanced composition all such factors as shape, direction, and location are mutually determined in such a way that no change seems possible, and the whole assumes the

> character of "necessity" in all its parts. An unbalanced opposition looks accidental, transitory, and therefore invalid…. (21)

Arnheim's theory, like Gestalt theory generally, deals exclusively with visual perception. This resulted in his treating all of the arts as essentially visual arts, a decision that left music in an odd situation. But dance, cinema, architecture, sculpture and landscape art, to the extent that he considered them, are all considered as relying for their felt impact on tensions created in the visual cortex of the brain. Depth perception, for Arnheim, is simply what it is in a painting, Arnheim's paradigm of all art. Thus Arnheim's argument for the expressivity of visually perceived *movement* tracks his analysis of non-moving imagery. In painting, line, texture, shape, and positioning in the visual field take on felt qualities because of tensions due to disturbances of the base equilibrium of the brain's electrical fields. That same brain model can easily be applied to visually perceived movement where *changing patterns* of ground and field, line, shape, texture and so forth are understood as creating analogous disturbances of the brain's electrical equilibrium. Such considerations form the basis for Gestalt theory's explanation of why, for example, smooth, curving movement is perceived as "languid" or "relaxed," and why disjointed movement is perceived as irritating or distressing. (1954)

Although Arnheim's Gestalt theory of art depends on "tensions," these are *ex hypothesi, electrical* tensions, not the muscle tensions—expansions and contractions of the spindle cells throughout the body—that we count on in kinesthesia to produce feeling. This distinction raises a question: Is Gestalt theory an opposing, alternate theory of how visual perception acquires feeling, or are the two theories compatible, even aspects of a larger theoretical model that includes them both?

Perception is the activity by which the raw, never-conscious, data of sensation are processed in the brain into conscious images of self/world.[11] Stimuli detected by nerve endings on the skin, tongue, and retinas, in the ears, and in the spindle cells along

[11] I am using the word "image" in the broadest sense to denote not only a visual percept, but any product of consciousness. (See, e.g., Collingwood, 130 *et seq* )

the musculature throughout the body travel as electrical impulses to the brain. The brain, a complex of electrical circuitry, generates electrically charged fields.

Ultimately, then, *all* tensions and resolutions of tensions must be processed as electrical phenomena. That is, the bodily expansions and contractions we have denominated as kinesthesia eventuate in alterations in the brain's electrical fields. They are, in the end, what Gestalt theory conceives visual phenomena to be: electrical disturbances in complex electromagnetic fields. Thus in both the case of visual sensation and of kinesthetic sensation—the stimulation of the somatosensory system—at some point we arrive at tensions and resolution of tensions represented as electrical phenomena. As Damasio relates, the representation to self of such events in the brain is what constitutes perception, consciousness of those events; that is, both visual events and kinesthetic events enter consciousness as "felt tension."

Thus the Gestalt explanation of how visual perception acquires its qualitative "feel" can easily accommodate an explanation of how kinesthesia is ultimately "felt." Gestalt theory and the theory of kinesthesia as feeling that I am developing here are thus perfectly coherent; taken together they yield a comprehensive theory of how the body perceives a felt world. For both Wolfflin—whose theory roots feeling in kinesthesia--and the Gestalt theorists—who root feeling in *visually* produced electrical tensions--the perceptual process itself contributes an inevitable *felt* quality to what is perceived. Visual shapes, lines, textures—*and also* the shapes, rhythms and lines of *movements*—each carry in perception a qualitative "feel" that both Wolfflin and Arnheim ascribe to innate, automatic neural processes.

To say that perception's felt qualities derive from essentially *formal* aspects of perception is to say that in perception, things come down to very simple matters: Are the spindle cells in a specific muscle group expanded or contracted? Are electrical fields in the visual cortex "disturbed" or "resolved?" Is there a current in a molecule of the brain at a particular moment or not? There are uncountable ways these simple states can come about and so what is very simple—when taken through various degrees of intensity and spun into all possible combinations and permutations of muscle groups affected—generates an enormous array of felt states. Some of these felt states occur so frequently

in experience that we give them names; others are so similar to one another that we identify them as analogs, as, for example, in synesthesia.

But this situation in which what is fundamentally simple generates an extraordinary variety of information, is precisely what we would expect of a complexly wired electrical system like the brain. Electrical current is either on or off; the magnetic field it generates is polarized toward either the north or south. But computers that are built on this simple bi-polarity generate and contend with a staggering amount of information. It is no wonder, then, that certain felt states are distinguishable as familiar, nameable, states and that others—those generated by works of art, say,--bear certain similarities to what has been felt before but nonetheless constitute feelings we experience as utterly unique.

That the brain is a biochemical complex of interconnected, essentially electrical, fields is a widely accepted view in neuroscience, and the notion of "tensions" transmittable as electronic impulses is creditable. The field of visual perception is full of conflicting theories, none of which have the full support of the neuroscience community. Gestalt theory offers a potent model among others and a theory backed by recent neuroscience. I rely upon it here to explain how visual patterns carry feeling because, in incorporating the notion of "tensions" in the brain's electrical field, it coheres well with the view that kinesthesia—which itself depends upon "tensions" in the musculature--forms the basis for felt qualities of perception, a position for which there is also substantial experimental support.

From the point of view of the brain, then, there is little difference between tensions induced by visual stimuli and tensions arising from the stretching of spindle cells; both are relayed to the brain as electrical impulses traveling along neurons. Tensions, in any case, translate into alterations in electric current, and that is what affects the brain as it processes sensation into perception, representing to consciousness what is happening in the body.

Both Wolfflin's theory of sympathetic modeling and the Gestalt theory consider that *form* is what governs feeling. Arnheim's psychology of art (1966) is based on the idea that *patterns* on the retina determine the felt character of our perceptions. The

centrality of patterning is evident as well in Wolfflin's theory that the shape or pattern of the bodily form modeled kinesthetically is what determines the "feel" of a visual perception. In the final chapter of this dissertation, I will return to the notion of shape, form or *patterning* as those concepts recur in neurophysiological theories of feeling to serve as the bases for distinguishing among distinct human feelings. Even at this point in the discussion, however, it is clear that kinesthetic activity, as it occurs in various regions of the body's musculature, occurs in different bodily "patterns" or "shapes" that we identify as distinct feelings.

In the previous chapter's discussion of depth perception, I demonstrated that Gibson's notion of affordances imports a kinesthetic component into visual depth perception which we can now understand as supplying feeling. It seems now that kinesthesia was lurking, unrecognized, in Wolfflin's theory of sympathetic modeling, Gibson's theory of affordances, and in the Gestalt theory of visual perception as well. As it emerges that the felt qualities in perception are all linked to kinesthesia, the conclusion that the mysterious "subjective" component in aesthetic experience is a manifestation of the tensions produced throughout the body becomes irresistible. This may be what Wolfflin intended when he said that without sympathetic modeling, art would not be possible: Without the kinesthetic component in all perception, the human body could not be "moved."

I have so far elaborated two psychology-based aesthetic theories, theories of how neutral, retinal patterns acquire the felt qualities that allow them to become the materials of expressive art. One theory, Wolfflin's theory of modeling, posits reflexive modeling as the link between visual perception and whole body kinesthesia, the source of feeling. The other theory, Gestalt psychology of perception, locates felt aspects of visual forms in the "struggle" for equilibrium waged in the visual cortex, which equilibrium promotes the living organism's survival. In the rest of this chapter, I will utilize these two theories—which I have demonstrated are coherent and complementary—to examine each of the fine arts and compare them each with the art of landscape.

As has been noted, landscape is a complex art form that shares in aspects of many other fine arts. The feeling expressed by a successful work of landscape art

derives from the way the artist selects and structures both the visual and kinesthetic elements of the landscape experience. In this respect, landscape art is not unique: As the rest of this chapter will demonstrate, expressivity in *all* the fine arts depends significantly upon kinesthesia.

I turn now to a comparison of landscape art with the various fine arts. How do each of these arts utilize and structure kinesthetic responses expressively, and to what extent does landscape art resemble—or differ from—those arts? What, finally, is landscape's *unique* mode of expression?

## Landscape And The Fine Arts

### Landscape And The Art Of Sculpture

When it is behaving, sculpture stands on a platform where it can be viewed from every angle; so positioned, it invites circumnavigation. The experience of movement is, however, not intended as the focus of the viewer's attention. In circling a work of sculpture the viewer is expected to keep his eyes focused directly on the work, as the experience is intended to be entirely visual. The viewer is not expected to notice tensions in the muscles in his neck and head if he must stretch to see the entire work, nor should he attend to his feet, hips or knees. Instead he should do something like what he does in viewing a painting: Attend exclusively to the visual experience.

A shaped volume, sculpture, will present what is essentially a textured, not a flat, surface: Parts of the work will be nearer than others and so the eye will be employed in exploring depth; if the sculpture is deeply sculpted or cut through in places, the experience of depth will be more pronounced but, apart from the fine movements associated with the visual perception of depth, the primary experience of sculpture remains retinal.

It may be supposed that a movie camera fixed on a dolly that revolves around a sculpture would "see" it as fully as the live viewer circling on foot. However, the movie

camera will not capture the *human* experience of a sculpture because it does not record the *peripheral blur* that affects human three-dimensional vision, the factor that creates the sense of a *surround*. Even a wide-angle lens will record an image with edges that are curiously curved, not at all like the image of surrounding volume the human viewer perceives. In addition, the camera does not, without the cinematographer employing a few tricks, take account of the facial "tips" that are cues of depth. In short, a movie camera circumnavigating a work of sculpture *cannot include the viewer* in the same spatial surround as the work; the effect is not of a space *shared* with the spectator, an effect critical to the human experience of sculpture.

Should we, in viewing a work of sculpture, ignore these cues of shared surroundings as we must when viewing a painting, or does sculpture invite us to view it differently from the way we view painting? Undoubtedly, we should ignore the kinesthetic perceptions in our feet and legs, but should we also suppress those visual cues by which we grasp immersive depth? Should we aim for an experience like that recorded by a moving camera circling the work on a dolly?

The peripheral blur and the "tip of the nose" are significant phenomena in the experience of sculpture; they signal our "immersion" in the voluminal space of the sculpture just as they do in our experience of landscape. Our perception of both sculpture and landscape, then, are perceptions of being "in" and "of" a space shared with the work: We experience ourselves as partnered with the work in shaping the dynamic tensions—both visual and kinesthetic-- of this shared space. Immersion in a shared space makes the experience of sculpture like the experience of landscape and very different from the experience of painting. Sculpture, like landscape, is an experience that, as rounded bodies, we share. As we are perceptually "at home" in landscape, we find ourselves among friends in the presence of sculpture; we feel less constrained in having to attend to these art forms than when we attend to painting. Bloomer and Moore (1977) consider sculpture in just this capacity when they suggest that "the statues in the Palazzo Vecchio in Florence, or the flowers in the streets of Spanish cities, or the fountains in Rome create "a sense of there being allies in inhabitation" of those public spaces. (84)

Hegel (Inwood, 1975) regarded sculpture as the artistic ideal: The human body was, for him, the ideal embodiment of the human spirit, and the malleable qualities of marble make it the ideal medium for rendering that form. But surely, even a wood sculpture of a horse roughly worked to convey merely its basic form, must strike us as more ”like ourselves”—a rounded body consuming and structuring its spatial surround--than either a painting or a building, art forms Hegel considered less than “ideal.” The same may be said for even the most abstract of sculptural forms such as those by Arp or Brancusi or Henry Moore. Sculpture’s size, shape and mass relative to our own accounts for the intensity of dynamism that pervades the space it shares with a human perceiving it; a building is too large to engage in such reciprocal structuring of spatial tensions, a painting, too flat and remote.

Wolfflin’s theory of sympathetic modeling is particularly helpful in understanding the felt qualities of sculpture. A tall, massive sculpture such as Auguste Rodin‘s “Balzac,” Wolfflin might argue, either urges us to actually draw a deep breath and lift ourselves to our fullest height, or it at least moves us to *imagine* how that self-expansion would feel. Mass, weight, susceptibility to the force of gravity, voluminal shape, equilibrium or lack of it—all these are experiences “shared” with sculpture. Either as an actual experience of postural change, or as an imagined experience drawing on associated body memories, the experience of such modeling is kinesthetic. Our lungs expand and draw more oxygen; our spines straighten, our chins lift and draw back; we assume what could be described as a “triumphal” posture, and that results in a complex mix of muscle tensions. A sculpture of a small figure, or of one hunched over in a crouch such as Rodin‘s “Thinker,” either provokes the “sympathetic” response of tightening the abdominal muscles and stretching the shoulder and back muscles in imitation, or it recalls to memory the kinesthetic perception of that posture. This “modeling” is not entirely a matter of imitating the posture of the human figure depicted in a sculpture, but is, rather, a matter of imagining the visual shape of the sculpture itself, an imagination that is drenched in kinesthetic perceptions. It should be noted, as well, that postures we have not specifically assumed in our own lives can be imaginatively constructed the way imagination manipulates elements of other perceptual

experiences, say, visual experiences when we imagine unicorns. In any case, our own sense of heaviness and a familiar or imagined body posture are called into play, producing their own specific kinesthetic perceptions.

It is important to note that Wolfflin's theory does not require that the sculptural work be recognizable as a human or other animal form to induce sympathetic modeling. The fact that an object sits upon the Earth, a mass taking up space and subject to its gravitational force, is enough for the human body to "sympathize" with it. Abstract sculptures are just as likely to trigger sympathetic modeling and produce kinesthetic responses as any more representational work. It is the form of the sculpture that is modeled, not the recognizable position or posture of the represented human body.

The experience of sculpture is also an experience of visual depth and, as such, is an experience of "affordances" which activate the entire body's musculature. The organically-shaped hollows in a Henry Moore sculpture, for example, involve affordances akin to what Appleton thought of as "Refuge" in the perception of landscape. Does the body respond throughout its musculature to a sense of protection such that the muscles expand with a sense of ease and relaxation? Or do we tighten in an effort to make ourselves small, as if we were squeezing into a cave? It is hard to know precisely how such affordances work in actual depth perception, but it is enough to know that the "holes" of Henry Moore's sculptures induce *kinesthetic* responses within what is a thought to be a *visual* experience.

Finally, the size of a sculpture relative to human size creates it own kinesthetic impact. A powerfully large sculpture such as Eduardo Chillida's immense concrete "Eulogy To The Horizon" affects the viewer's sense of his own size and mass, and so does a miniature bronze Degas dancer. Viewing a sculpture whose size is very different from our own demands postural alterations that produce their own kinesthetic responses.

In a landscape, much that we experience—trees, shrubs, garden statuary and other built objects—is experienced as sculpture-like. But whereas in our experience of sculpture we make an effort to sustain a fixed gaze as we circle the work, objects in a landscape are generally encountered "along the way," as we travel through the larger work. Objects viewed as elements in the landscape are "situated within" the context of

the larger work, perceived as elements of the landscape itself, in relation to one another and in relation to the boundaries of the landscape work. In addition to the perceptual vectors that establish them as sculpture, they set up a complex web of vectors in relation to the walker that dynamically structure the larger space of the landscape work. Their sizes and shapes with respect to our own, and with respect to one another and to the boundaries of the landscape space itself create complex structuring networks that are both visually and kinesthetically organized. The fact that in landscape, the wider surrounding of a sculptural work is welcomed into perception rather than deliberately excluded alters and enriches the kinesthetic impact of each perception.

Large, weather-proof sculptures displayed in an outdoor setting, a sculpture park or garden, create a complex perceptual situation in which the dynamic tensions of the sculptures themselves and of their placement within the landscape work interact with the dynamic tensions built into the landscape itself. It is almost impossible to create a landscape to accommodate previously created sculptures as part of it; in a case where sculptures are created in advance and then "placed" in a landscape, the two art forms vie for perceptual supremacy, creating an effect in which sculpture, as the more detailed and perhaps more visually engaging art form will predominate, leaving the landscape to function as background.

Only in rare cases where the sculptor and the landscape artist either are one and the same, or agree to work together from the start, can a single, coherent aesthetic experience result. An excellent example of such coherence is evident, surprisingly, in public parks created around industrial sites where the landscape work itself is created with the dynamic form of an industrial relic taken as the artist's starting point. (See, e.g. Figure 10)

Figure 10. Duisberg-Nord, a park designed around the "sculpture-like" remains of an industrial site. http://germany-travel/media/content/erholung/schloesser_parks; and http://www.landezine.com/wp-content/uploads/2011/08/33-

The perception of a sculptural work within a landscape is likely to be the perception of a moving, traveling subject. This adds complexity and richness as the dynamic tensions enlivening the space around each object constantly shift. Not only the sculpture's relation to the walker, but its relation to everything else in the landscape, including the landscape's own boundaries and horizon, will continually alter. The walker's kinesthetic perceptions of his own size and shape must be continually revised for the structure of each object's context shifts as the walk progresses. The perception of each situation within a landscape is thus far more complex and lively than the perceptual effect of a sculptural work experienced in isolation, say, in a gallery or museum. Of course, much depends on the attitude of the walker; at any time, he or she can opt to view an element of the landscape, whether a tree or a bit of statuary, *as* sculpture, imaginatively abstracting it from its landscape context and the complex of dynamic vectors that establish it in relation to the larger work.

The landscape artist must simultaneously take into account the perceptual impact of each element in relation to the walker and the contribution to perception of the walker's own bodily movement. His primary task is to give shape to the course of the walk, attending to both visual and kinesthetic perception at each moment along that course. What will the walker encounter, when and how? Will an element be seen first from a height or from a point below it? Will a colorful bed of flowers come into view

suddenly or will it be approached from the top of a wide staircase so that it appears to rise up to the walker gradually and graciously? Will the path twist and turn, upsetting the walker's equilibrium just as he comes upon a gazebo? Or should he reach the gazebo after a long, leisurely experience of anticipation? What impact will the various kinesthetic perceptions of each "sculptural" experience have on the way the next one is perceived?

Visual experience must be assessed at each point within the context of the kinesthetic circumstances under which it occurs, circumstances the artist is free to determine. The landscape artist paces the walker's perceptions, organizing them sequentially, thereby establishing rhythms within the experience of the landscape that have their own kinesthetic effects on respiration and other whole-body responses. The impossibilities of calculating all these factors in advance and of representing them in a drawn plan is what makes such a powerful argument for on-site creation of a work of landscape art. Only by immersing himself in the volume of the evolving landscape work--or by utilizing software that can "revolve" around any given point--can the landscape artist understand what he is creating and make revisions in response to realistic feedback.

A sense of immersion is reinforced in a landscape by the senses of smell and hearing, neither of which aligns us linearly-- frontally-- with respect to objects as vision does. Smell and hearing, rather, place us at the center of a sensory *sphere* which reinforces the perception of a landscape as present not only in front of us, but all around us. This multi-sense aspect of the landscape experience enhances the sense of the walker as being "of a piece" with the landscape work of art.

Immersion is, of course, what human *being* consists of at every moment; perception of one's self is perception of a roundedness that encounters the "outside" at every point on its enveloping skin. But as the walker *moves* to experience the landscape in its entirety, the landscape unfolds not only as surrounding volume, but as a formed, aesthetic, experience, enjoyable for the evolving shape the walker's movement takes. The surround of landscape thus exhibits a marked difference from the surround of ordinary experience. As a consciously shaped, structured experience, it resonates with

human feeling, accentuating, heightening and ultimately manifesting it in new ways. The experience of landscape is thus the experience of a surround that is "humanized," so "thoughtfully" organized that the walker may in fact feel more "at home" there than in his ordinary daily surroundings.

Wolfflin's theory is, of course, as applicable to "sculptural" elements in the landscape as it is to sculpture isolated in a gallery. Trees and garden statuary induce kinesthetic responses first, because of a natural sense of identification with objects which, like us, are subject to the force of gravity and, second because of how our bodies must alter their shapes—flexing and tensing muscles throughout—in order to access them visually. As is the case with sculptures, alterations in the body's *posture* contribute to the kinesthetic perception of the landscape. In addition to directly shaping patterns of movement through the landscape, the landscape artist induces an endless variety of kinesthetic perceptions by eliciting postural attitudes.

**Landscape And The Art Of Architecture**

> One would think that architecture as a fine art works solely for the eyes. Instead, it should work primarily for the sense of mechanical motion in the human body—something to which scant attention is paid. When in dance we move according to definite rules, we experience a pleasant sensation. A similar sensation should be aroused in someone who is led blindfolded through a well-built house. This involves the difficult and complicated doctrine of proportions, which gives the building and its various parts their character. (Goethe, in a fragmentary note on architecture quoted in Arnheim 1977, 152.)

Goethe's remarkable observation serves as a guide for our discussion of both architecture and landscape: Both are primarily concerned with shaping movement through their respective volumes. Goethe's reference to dance as something enjoyable *for the dancer,* not merely for the spectator of the dance, is fundamental to the notions of architecture and landscape art that will be developed here, for the arts of both consist in structuring movement for the aesthetic pleasure of *the one who moves.* In this respect, architecture and landscape art are what dance is to the dancer: They are both *directly* experienced choreography.

Architecture, as formed volume, so closely resembles landscape art that it is common to refer to the latter as "landscape architecture" and, to some aestheticians writing about architecture, a building is simply another means of shaping the Earth. (See, e.g., Berleant 1991, 76 *et seq*.) Certainly, the significant ways that the experience of architecture is kinesthetic find parallels in landscape art. Architecture, however, is restricted by a plethora of functional concerns that do not burden landscape, leaving the landscape artist far freer to exploit the expressive possibilities of kinesthetic experience. On the other hand, architectural interiors more tightly organize perceptual space so that the presence of the experiencing subject makes a more palpable contribution to the organization of perceptual vectors within the experience.

*The Burden of Function*

It is difficult to find any philosophical exploration of architecture that does not emphasize the functional concerns the architect must contend with. In order to stand, endure, and serve as shelter, an architectural work must meet an enormous array of engineering demands relating not only to the effects of gravity and other external forces, but also to the physical properties of its materials. Some of these concerns burden the landscape artist as well, particularly if he chooses to furnish the work with built structures or to employ terracing or other features requiring engineering; water control, for example, presents additional engineering problems. On the whole, however, landscape presents far fewer engineering concerns, and fewer that are absolutely necessary to the creation of the work.

Choreographing movement through a landscape is also subject to far fewer restrictions than what an architect must confront. The architect must attend to specific functions of interior spaces, creating efficient pathways to and from particular spaces within the work. The landscape artist, on the other hand, must guide visitors into and out of his work but, within the work itself, he is free to structure movement purely for the aesthetic pleasure it affords the visitor. The walker may be directed up a ramp and down a flight of stairs, around a hillock and under a bridge toward no end other than the

pleasure of kinesthetic variation and rhythm. Thus, although both art forms are concerned with structuring movement in kinesthetically pleasurable ways, the architect discovers far fewer opportunities for a free play of his expressive ideas

*Enclosure*

An architectural interior encloses the occupant like a womb; it is both comforter and protector. To one entering a building from a less humanized exterior, its interior appears immediately more surveyable and more relatable, factors that have the kinesthetic effect of relaxing the body's muscles. Inside a building, the interior space's borders make the visitor the focal center from which perception of the enclosed space is organized, the center of the dynamic tensions that animate the space.[12]

A sense of "insideness" is thus the first powerful kinesthetic perception of architecture. The perception of enclosure within secure walls creates the sense of protective refuge a building is expected to provide. To the extent that a building serves additional functions—institutional, religious, commercial—it can only succeed if it first provides shelter, or at least marks off clear borders between inside and out, between what is exposed and what is protected. That this is a space apart from the world beyond is the first announcement a work of architecture must make and it must do so persuasively; it does this best when it speaks kinesthetically. Even before the visitor begins to move about within a building, the simple perception of borders, and of a strong sense of the self as the center of perceptual organization is felt throughout the body by way of changes in muscle tensions as well as by changes in blood pressure, temperature, and respiratory rhythms.

Undoubtedly, much of the sense of safety the body experiences inside a building is due, as well, to the presence of a ceiling. Offering both protection from the elements and a clear upper "limit," a ceiling is a structural and structuring element that creates significant dynamic tensions, positive affordances to which the body responds in its

[12] I am grateful to Professor Edward S. Casey for the distinction between "borders" which are impermeable and rigid, and "boundaries" which are porous. Clearly, most landscapes are perceived as "bounded"—often by only the horizon—whereas the most distinctive distinguishing feature of an architectural work is its provision of firm "borders."

musculature. A ceiling as an attractive decorative surface also produces postural changes that, as they involve muscle tensions, produce kinesthetic responses. The presence of walls and a ceiling are generally regarded as among the "functional" concerns of the architect, as factors that require the attention of engineers and so inhibit what the architect can accomplish expressively. But clearly, this distinction between form and function is a false one: The mere presence of these so-called functional elements has a profound perceptual impact; the experience of simply being *within* walls and *under* a ceiling creates powerful kinesthetic responses.

The first act in the creation of a landscape, too, is the establishment of what are more often "boundaries" than "borders," the reference points that will frame the visitor's perceptual experience, rendering it "an" experience, in Deweyan terms. (1932) In the case of small landscapes, the visitor is usually made immediately aware of boundaries as we would be of a building's walls. The edges of the interior space of both a small landscape and a building, therefore, serve as a frame serves around a painting, as an organizer and accentuater of dynamic tensions. Within such a landscape, the walker experiences, as he would on entering a building, his own shape and size in relation to those boundaries, and himself as a dynamic center of perceptual organization; the firm, impenetrable, vertical walls of a building and the visible boundaries of a landscape thus have similar kinesthetic impacts. In larger landscapes, such as parks, boundaries may be obscured by thick plantings, or may occur at great distances, say at the end of a vast expanse of lawn. In an urban park, boundaries might nonetheless be evident in the frame provided by tall buildings circling the landscape's perimeter, as is the case in New York's Central Park. If the space is unduly large or shapeless, or if its boundaries are obscured, the kinesthetic impact is, instead, a sense of dislocation, ambiguity as to one's shape, size and position in the work, and the result is, of course, unsettling.

If the boundaries of a landscape are obscured, say by forested areas with indistinct edges, the visitor is less " anchored," and so plays a diminished role in establishing the center of the work's dynamic tensions, and this may well be the artist's intent. As landscape boundaries can be made more or less evident with sharply different kinesthetic results, the landscape artist has a far wider set of choices than does the

architect in determining the perceived size of the work and its consequent perceptual tensions. Landscape offers the option of providing the comfort of protective, enclosing spaces—small garden "rooms" surrounded by high hedges, for example—or a sublime and slightly terrifying expanse of lawn with an "endless view."

The body, as Bachelard poignantly noted (1969), naturally seeks the protective shielding of enclosures such as rooms and nests. The body's muscles expand in a relaxation of tension when it feels itself well enclosed. The more distant or obscure the enclosing boundaries, the less nest-like or room-like the landscape. An absence of overhead protection, too, leaves the landscape visitor far less enclosed than he is in a building. The palpable differences between the experiences of architecture and landscape are, then, perhaps no more immediately evident than in the perception of borders and boundaries, perceptions that may begin visually but is felt kinesthetically throughout the body as the walker "models" enclosure

*The Problem of Aesthetic Unity*

The experience of architecture includes two quite different experiences. As Arnheim notes:

> Perceptually and practically, the worlds of outside and inside are mutually exclusive. One cannot be in both at the same time. And yet they border directly on one another… On the architect's ground plan…the partitions between the two worlds are nothing but lines…constantly pierced by the continuity of our daily locomotions, which cross back and forth without much effort. The great challenge to the architect, then, derives from the paradoxical contradiction between the mutual exclusiveness of autonomous, self-contained interior spaces and an equally complete outer world, and (2) the necessary coherence of the two as parts of the indivisible human environment… (T)he erection of a boundary separating inside from outside is the primeval architectural act. (1977, 92)

"The way we experience architecture," Arnheim observes, is by "shuttling back and forth between the building as an object seen as a whole in space by a contemplating mind, and the building as an event in time experienced by man in action." (1977, 130)

This "shuttling" is required, in Arnheim's view, to hold simultaneous in consciousness two very different experiences: the exterior—a verticality presented to the eye—and the interior—a horizontal base for movement.

Approached from the exterior, a building is perceived as a large work of sculpture, or even of painting. We encounter it *visually*, frontally. To the extent that its outer surface is textured, there may be some depth perception involved but, for the most part, the exterior operates kinesthetically only to induce locomotion toward it and, in particular, toward a specific part of it, the entrance. To induce the visitor to enter the building, the architect structures the entrance as a powerful affordance, a welcome opportunity for refuge from a busy city street or from the dangers of nature. Buildings—other than cathedrals and a small group of show pieces—generally do not invite circumnavigation; their facades are presented to be viewed in the context of a landscape or surrounding buildings. The front face of a building does not "share" its space with the viewer in the way sculpture does; a building is too large to suggest the sort of dynamic interaction a work of sculpture invites. The interior is thus where architecture develops its most moving kinesthetic perceptions.[13]

The perceptual integration required to effectuate a unified aesthetic experience, Arnheim argues, is more than a challenge to memory; it is a challenge arising from the very different kinds of perceptions that must be assimilated to one another for the work to be experienced as a unified situation. The horizontal, as Arnheim describes it, is essentially not the visual experience he conceives it to be, but a kinesthetic one, and only inside a building can its horizontal plan become clear as a plan for movement. Thus architecture, as an interior, "functions as a potential stimulus for movement, real or imagined. A building is an incitement to action, a stage for movement and interaction." (Bloomer and Moore, 1977, 59)

The challenge to understanding a work of architecture as an aesthetic whole, then, derives from the difficulty of integrating two quite different modes of perception, the visual and the kinesthetic. The challenge to the visitor is to complete an integration

[13] Experiments with architecture that melt the interior into the exterior, utilizing transparent walls, open floor plans and exterior "rooms" that continue the uses of the interior spaces into the outdoor surrounding areas, are among the mixed arts that include Earthworks, which are discussed in more detail below.

of these two experiences, a challenge that can be met by discovering and articulating stylistically isomorphic elements in both visual and kinesthetic idioms, something that is possible because, as we have seen, both kinesthetic and visual perceptions acquire their perceptual "feel" from the perception of tensions.

Such discovery of analogies among different modes of perception is, in fact, the task of the architecture critic. It is also the task of the landscape critic insofar as landscape is both a visual and a kinesthetic experience. Understanding the evolution of styles in landscape art consists in identifying characteristic visual *and* choreographic—kinesthetic—elements, and noting how the two enhance and accentuate one another to create a unified, fully elaborated style.

However, landscape does not challenge the unifying imagination as architecture does because of the way the visual and the kinesthetic in landscape coincide: As the walker travels through the landscape—or through an architectural interior—the two modes of perception occur simultaneously, presenting a single, unified "moving picture."[14]

Piaget's (1966) notion of space as "internalized action," like Bergson's notion that conceptualization of time is possible only as spatialization, implants movement in space, but only in space that is *horizontal.* Movement as human locomotion does not involve space as a verticality, say, a wall. Movement in horizontal time entails that a wall is perceptually a *stoppage* of time and of movement. The contortions of consciousness Arnheim considers necessary to holding the vertical exterior and the horizontal interior of an architectural work together can be eased, I would suggest, only where the verticalities of a building are transparent, where walls allow the eye to continue past them, revealing a continuation of horizontal space, and thus further opportunities for movement—revealing, as it were, the disappearance of verticality.

As architects began to experiment with transparent building materials that permitted a seamless transition from interior to exterior, and from one interior room to another, open plan architecture came into use for relaxed lifestyles in residential architecture and for "horizontal" organizational structures in business and institutional

[14] Undoubtedly, the landscape experience involves a "cinematic" element but differs from the experience of cinema in a crucial regard; a later section of this chapter compares the two art forms.

settings. At the same time, landscape artists like James Rose designed landscapes that aimed at penetrating or breaking down walls, merging or creating ambiguities between inside and out. These works simultaneously intensified kinesthetic awareness because the visual –vertical— plane was no longer perceptually trustworthy and, often enough, was no longer there. With the visual called into doubt, the kinesthetic aspects of both the architectural and the landscape experiences were brought increasingly to the fore.

The argument, sometimes advanced, that *memory* is what binds exterior and interior architectural space into an aesthetic unity is misleading because two very different kinds of memory—visual and kinesthetic—are involved. The problem, therefore, moves over to one of how the two memories can be held together in consciousness, uniting the architectural work into a single perceptual whole. The task of unifying is eased if the building's exterior is a simple shape—say, a rectangle—and its interior spaces are arranged in similar shapes. But when the exterior is complicated, as it is when wings are added over time, it becomes impossible to apprehend the work as a single, unified whole.

For Bloomer and Moore, (1977) memory of architecture, whether interior or exterior, is entirely a matter of what is essentially kinesthetic memory:

> To at least some extent, every real place can be remembered…partly because it has affected our bodies and generated enough associations to hold it in our personal worlds. And, of course, the real experience of it, from which the memory is carried away, lasts much longer than the camera's 1/125$^{th}$ of a second…. The designer of every successful place both wittingly and unwittingly was *choreographing* all of this. (107) (Italics added.)

A work of landscape art, by contrast, is far more easily apprehended as a unified experience. Without sharp distinctions between interior and exterior spaces, there is no challenge to memory such as exists in the experience of architecture. Much of a landscape's visual experience occurs "in motion;" it becomes part of a moving picture, which is to say, a picture that moves while the subject experiencing it is moving as well. The visual and the kinesthetic are thus experienced as simultaneous correlates. If Bergson is correct that we can only conceive time by spatializing it, memory creates

something of a path. If stopping points or "views" along a landscape path may be conceived as segments—"beads" --on a single continuous thread, landscape art is, then, the art of the path: The key to the experience of landscape lies in the way the walker's movement through it-- and the visual perceptions that accompany that movement-- are structured. Memories, both visual and kinesthetic, accrue as time "extends linearly," materialized as a landscape path. Because memory in the case of landscape is more homogenous—a single visual/kinesthetic mix-- than it is in the case of a building, landscape art presents a more unified experience, more easily eventuating in a sense of an aesthetic whole.

Movement along pathways in the horizontal plane is, as Goethe understood, an experience that is satisfying or not depending on how well the architect or landscape artist manages to choreograph that movement. Pathways in buildings must serve the utilitarian purpose of getting people to and from various parts of them; if this is accomplished with ease and efficiency, movement is pleasurable and the architect has succeeded in choreographing a dance that is pleasurable to perform.

There is much research available concerning the sorts of movements the body prefers. A ball rolling along undirected, like students walking at liberty across a campus—or like anything permitted to pursue its path freely—will choose to "cut corners." Handwriting intended to be viewed by others employs more verticals and sharp angles than does handwriting formed in a hurry when the hand is free to pursue its preferred path. Hence, a wide, curving stairway of shallow steps looks more attractive to the eye because it is easier for the body to negotiate than a steep, narrow one; smoothly curved paths recommend themselves as more pleasurable to travel than sharply angled ones. Visual perception of "beauty" in the case of architecture depends heavily upon the perception that a space is easy on the body, *kinesthetically* pleasurable.

In landscape, the artist is far freer than the architect to create such intensely pleasurable choreography, to structure movement through the work in a way that need serve no other function than aesthetic pleasure in movement of every part of the body. For example, whereas architects have only recently discovered the pleasures of ramps as a means of vertical movement, landscape artists, relying on the natural inclines of the

Earth, have often chosen this more flowing and continuous—more kinesthetically pleasing-- sort of pathway through their work. Frank Lloyd Wright's Guggenheim Museum of Art in New York and Snøhetta's design for the Opera House in Oslo demonstrate how inviting to human movement such gently sloping ramps can be in architectural works, but Italian landscape artists working on the slopes of the hills around Rome learned centuries ago the aesthetic value of sloping pathways for both water and walkers.

*Arnheim vs. Wolfflin On The Perception of Verticality*

The interior of a building is, as Goethe boldly pointed out, essentially a work of choreography, a structuring of movement in the horizontal plane. But is verticality the purely visual—non-kinesthetic—matter Arnheim took it to be? Is the perception of columns, staircases, and structures in the vertical dimension generally, a frontal, retinal, affair, lacking impact on the muscles of the entire body? Even Arnheim, whose intention was to demonstrate that all expression derives from the visual, admits that more is going on. In viewing a column, he points out correctly, we give more "visual weight" to what is higher up; architectural columns are tapered toward the top to account for this visual effect. The explanation of visual weight's increase with altitude, Arnheim believes, is simple: As bodies subject to gravity, we perceive what is of greatest moment (mass multiplied by distance) as having greatest weight. What is at greatest distance from the ground is *visually "heavier."* But what is this "visual" effect but the result of *kinesthetic,* memory? In an architectural work, Arnheim must admit, kinesthesia enters into perception of verticals as well as into our experience of the horizontal "ground plan." And so we must ask Arnheim just how he believes the visual can produce kinesthetic perception? How, in other words, does visual perception elicit tensing of muscles throughout the body.

In his book about architecture, Arnheim (1977) explicitly rejects Wolfflin's theory, arguing that "the primary effect of visual expression is more convincingly derived from … formal properties *of the visual shapes themselves*, and muscular

responses can best be understood as secondary reactions to primarily visual dynamics."(213) Arnheim insists that Gestalt principles of *visual* perception can fully explain all that we experience in an architectural work. Our aesthetic experience of architecture—the feeling it conveys—does *not* derive, Arnheim argues, from

> …the physical forces that control the statics of the building. Those forces may be inferred intellectually from what is seen and known, but obviously the observer receives no direct effect from the strains and stresses in the building materials. What he receives is the visual image of the surface, shapes which acquire their dynamic character as the image is processed by the observer's nervous system. …(T)he physiological forces which organize sensory raw materials into the shapes we perceive are the same ones we experience as the dynamic components of visual images. There is no need to resort to another sensory modality, such as kinesthetic awareness, to explain this primary effect. (212-213)

All the "tension" needed to explain the feeling of a work of architecture, Arnheim claims, derives from the retinal image and its processing in the visual cortex.

But this dispute is more verbal than real. What Arnheim intends by "visual weight" can only make sense by calling up Wolfflin's theory of sympathetic modeling: We give more "visual weight" to the higher part of the column because we model the higher part based on what we understand from our own experiences with the Earth's gravitational field. The kinesthetic and the visual merge in perception as two ways that body tensions create feeling. If it is difficult, in the experience of architecture, to hold together the experiences of inside and outside, it is because of a difference in degree, not because of a qualitative difference between the perceptions.

Imaginative modeling may commence, as Arnheim suggests, with retinal imagery; but the visual stimulus merely provides the model of a posture to be assumed or of a movement to be executed. The postural change or movement—not a pattern on the retinal mosaic—is the source of kinesthesia and, ultimately, the source of a perception's feeling. Only in remembering or recreating by way of muscular tensions the form that is seen, does one 'get' its felt significance.

This imaginative modeling is no more a conscious decision for Wolfflin than the transactions in the visual cortex are in Gestalt theory. A whole-body kinesthetic

perception—along with its attendant pleasure or pain—is *intrinsic* to the visual image. The retinal image, I would argue, derives its "feel" as a kinesthetic perception. Wolfflin's theory of modeling simply attempts to make clearer *how* muscle tensions—the source of kinesthetic feeling—come into play in aesthetic judgment.

The architect need not always rely entirely upon visual cues to elicit kinesthetic responses. By directing vision to one place and then another, he also directs movement of the head and upper torso and, consequently, *postural* attitudes. Attractive or provocative objects placed at great heights or distances, for example, require us to straighten and tilt our heads upward, moving the neck and throat and facial muscles, as well as muscles along the spine and in the back and abdomen. The sense of "uplift" we experience in a Gothic cathedral is felt in our bodies' straining to see through the delicate ribs of the flying buttresses to the elaborate ceiling high above. By building in a rhythmic progression of various postures, the architect can *directly* produce an ordered sequence of kinesthetic perceptions.

Clearly, the same choreographic technique is available to the landscape artist. To induce the walker to move his head, lift his chest and open his lungs, the landscape artist need only create a high mound, or place an intriguing sculptural element or tall tree in the distance. Or, a narrow path complicated by intermittent "hazards" can be utilized to induce the walker to keep his head down, his eyes to the ground. At the end of such a path, a wide expanse of sunlit lawn or a clump of trees in the distance will induce a sudden "uplift" which can be experienced as exhilarating.

Of the various muscle systems that can be activated both by structuring *locomotion* and directing *postural* attitudes within it, the most powerful kinesthetic responses are those created in the respiratory system. Expansion of the lungs not only increases the intake of oxygen, it also activates the diaphragm and the rest of the abdominal cavity, expanding the throat and lifting the shoulders and ribcage, and activating muscles in the upper back. Some of the most densely clustered and exquisitely sensitive receptor cells reside in these regions, making kinesthetic perception particularly acute. Respiratory system kinesthesia can be accomplished by inducing the walker to climb stairs or engage in other demanding activity, but it can also be brought

about by directing vision in order to alter posture. Respiratory rhythms and the effects they have on pulse and blood pressure, produce additional poignant kinesthetic perceptions.

Wolfflin argued that the regularity of the body's own respiratory rhythms accounts in part for our responses to architectural symmetry or the lack of it. Good proportion, he claimed, does not rely on intellectual manipulation of numbers, but is based in internal kinesthetic perceptions derived from the body's responses to visually perceived balance, proportion, regularity, and repose, all of which involve the kinesthetics of respiration. Aesthetic pleasure in regularity derives from the body's own respiratory rhythms, and pleasure in balance and symmetry from experience of the body's mass and weight. Physiologically, height is experienced as aspiration, effort, and stress, and width as weight, relaxation and repose; the perfection of the Golden Section thus derives from a perceived balance of aspiration and relaxation experienced bodily in respiration. Eye movement is insignificant in such experiences; respiration, Wolfflin insists, is the key to the pleasure we take in the Golden Section. Again, what holds for architecture holds true, *a fortiori,* for landscape art because the landscape artist enjoys freer rein in structuring the movement of the walker.

For all the more subtle sources of kinesthetic perception in architectural works, it is, finally, in the gross movements of the outer limbs that the most direct kinesthetic perception arises. An architect who gives careful thought to the structuring of movement can create intense and clear meaning by way of kinesthesia alone. Daniel Liebeskind's design for The Jewish Museum in Berlin, for example, includes an entrance area featuring a jagged path that is sloped and tilted at sharp disorienting angles; it is deliberately made to be nightmarishly dis-equilibrizing in order to convey *kinesthetically* the experiences of the Jews as they were herded to concentration camps. When the visitor finally enters the building at the end of this disturbing pathway, he begins learning the narrative of the history of the Jewish people in Europe. It is impossible to see the museum's artifacts in any order other than that prescribed by the path the architect has designated; the narrow path that *must* be followed to learn the story conveys, *kinesthetically*, the inevitability of the fate of European Jews. The visitor

cannot cut across time to a different era and so avoid what the museum has chosen to set before him. No options are open to him; there is no turning back and there is only one way out. The visitor thus absorbs *in his body* the relentlessness of the history lesson the museum aims to teach.

Nietzsche (1872) understood well the kinesthetic impact of a particular architectural form, the ancient Greek amphitheatre. Nestled in the close surround of fellow mortals, the spectator at such a theatre "loses his boundaries" as the architectural form disrupts the conventional, Apollinian orderliness that preserves the spectator's contained separateness from others. The architecture within which the Greek drama unfolds serves kinesthetically to drive home the Dionysian point of the music and, then, of the drama. What music accomplishes in one medium, architectural form reinforces kinesthetically in another.

Low doorways force the visitor to a Japanese tea house to stoop, to make himself small, assuming the posture of humility the tea ritual embodies. Again, a long ramp sloping downward toward an elevated platform has a profound kinesthetic impact: The walker, seeing the platform rise up before him, undergoes a significant alteration in his own sense of size and mass. "Open plan" architecture, as well, encourages particular behaviors that exemplify correlate values and feelings.

In sum, the architect calls up kinesthetic responses in four distinct ways. First, all the "visual" aspects of an architectural work, as they produce tensions in the visual cortex, induce something analogous to kinesthesia, a slight dynamic tension that lends "feeling" to the work. Second, in constructing spatial volumes, the architect induces visual perception of depth that, by its nature elicits kinesthesia by way of perceived affordances. Third, to the extent that we unconsciously tend to model with our bodies the sizes and shapes of the spaces that surround us, the architect induces muscle tension—kinesthesia—as a direct impact of actual bodily model and, more frequently, induces kinesthesia as body memory. Finally, and most forcefully, by provoking various postural changes and by structuring movement through the interior of the building, the architect directly determines rhythmic variations in muscle tensions throughout the entire body.

The landscape artist, like the architect, can shape and control kinesthetic perception by shaping light patterns that will emphasize or minimize depth perception, and can use figure and ground, and partial occlusions to activate kinesthesia visually. The landscape artist also stirs kinesthetic responses by manipulating postural changes with the placement of "sculptural" elements and creates situations for sympathetic modeling. Most effectively, however, the landscape artist structures locomotion through the landscape to orchestrate a full panoply of combinations and permutations of muscle tensions. It is in exploiting this last possibility that the landscape artist wields his greatest powers, for a landscape, unlike an architectural work, may be shaped upon a surface of infinite variation, and the artist is free to choreograph movement as his creative intent directs. Liberated from any obligation to serve a utilitarian "function," landscape art can make free play of the movement of the walker through it, taking the walker on fanciful journeys to nowhere simply for the pleasure of the journey. Much of the art of landscape, in fact, consists in creating "destinations" that draw the walker on. Such movement and the resulting kinesthetic perception constitute the very essence of landscape art.

Although kinesthesia plays a significant role in the expressivity of music, dance, cinema and sculpture, it is only in architecture and landscape that the artist can *directly* induce a kinesthetic response. By inviting, provoking and directing the walker to engage in specific bodily movements, the architect and the landscape artist in effect "move" the body of the walker; their choreography, built into their works, operates *directly* on the walker's body producing the muscle tensions and flexions that constitute kinesthesia. In other arts, kinesthesia arises indirectly: by way of visual or auditory perceptions. Such kinesthesia may be mediated by imagination and body memory and so is attenuated in its impact. But *direct* inducement of kinesthesia, the most powerful expressive tool, belongs most properly to the arts in which human movement is directly manipulated: architecture and landscape art. Of these two art forms, it is landscape art that utilizes that tool most liberally and to greatest expressive effect.

(Kinesthesia, which has its source in movement, would seem to involve temporal perception; should not a discussion of the perception of time be a critical part of a

discussion about kinesthesia in the arts of landscape and architecture, as well as in the other so-called "temporal" arts, music, dance and cinema? I have deliberately put off discussion of the "temporal" component in kinesthetic experience to the sections on music and dance for reasons that will become clear in the discussion of those two arts.)

**Landscape And The Art Of Earthworks**

Earthworks are hybrids of sculpture and landscape art. They are considered here in a separate section solely to call attention to and explore in concrete detail the way they employ choreography to create kinesthetic perception. Although they considered themselves sculptors, not landscape artists, Earthworks artists were intent on taking the sculptural work "off the pedestal" and into the world (Smithson 1979a). Earthwork artist Richard Serra considered his work "site specific," (Kwon 2002, 94) a term borrowed from landscape and applied to sculpture in which the site is conceived as an implicit factor in the work.

In his *Tilted Arc* (Figure 11), Serra beckons the walker to an experience that, I would argue, is more an experience of landscape than of sculpture. The site extends out around 360 degrees toward the urban horizon, the ground rises up and falls away, large buildings surround it as it engages the surrounding landscape. The walker is surrounded by the work, immersed in it. As he walks *through* the site, the work directs or *choreographs* his movement. To fully experience *Tilted Arc,* then, one must do the specific dance the artist has choreographed. Such structuring of movement is not what sculpture ordinarily attempts; it is the work of choreography-- of landscape and, to a lesser extent, of architecture.

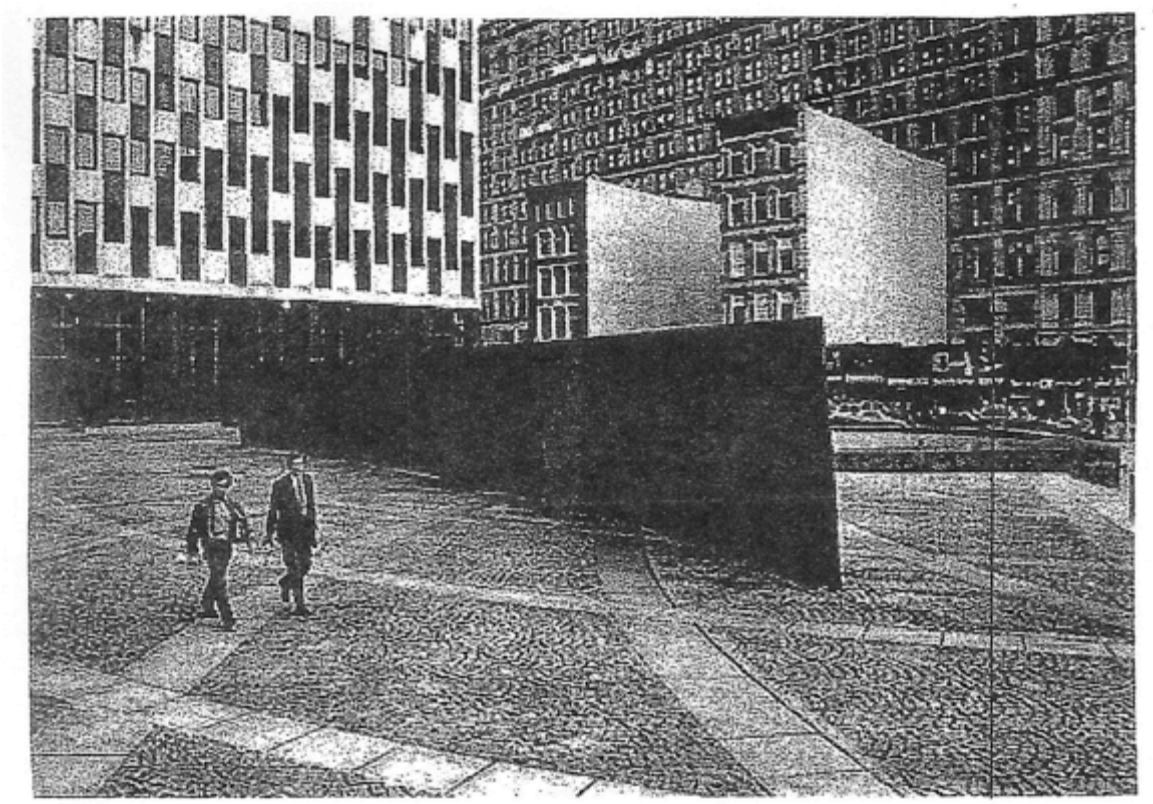

Figure 11. Richard Serra's *Tilted Arc.* At Google Images, http://representingplaces.files.wordpress.com/2010/o4/serra-tilted-arc.jpg

Nor is the experience of *Tilted Arc* as visually rich as the experience of sculpture normally is until the walker begins moving. Locomotion produces a dynamic flow in the visual field, altering the size and scale in which the walker perceives himself. The work's choreography induces the walker to ascend and descend; as he does, his horizon tilts and destabilizes so that at one moment his stance is precarious and at another his balance is restored. This roller coaster of anticipated-loss-and-then-recovery of balance creates further dynamic tension that is perceived kinesthetically and so is freighted with feeling.

In following Serra's choreography, one is naturally guided by one's eyes, but the fundamental felt tensions in the work are kinesthetic: a perception of the entire body as having a specific shape and mass in relation to the ground. The choreography as felt depends on the body's mass in the Earth's gravitational field; on another planet, I would

point out, *Tilted Arc* would be the same *visual* experience, but an entirely different kinesthetic one. The dynamic tensions comprising the experience would change.

As an example of a three-dimensional work that, by structuring movement through space, elicits structured kinesthetic responses, setting up a specific succession of expressive dynamic tensions, *Tilted Arc* is a significant model of landscape art. Instructively, it lays bare a little-recognized, but central, feature of landscape: Without utilizing any plant or other natural material whatever, *Tilted Arc* calls attention to the expressive possibilities of choreographed movement through voluminal space—structured kinesthesia.

**Landscape And The Art Of Music**

The traditional theory of music held that music "embodies" the dynamic forms of human feeling, standing, in Langer's terms, as a "symbol" of those feelings. (1953) But, as Berleant (1991) points out, such attempts to tie music to feeling by way of a vague metaphysical construct do little to make music philosophically intelligible; rather, they end up "balancing the intangibility of the one against the indeterminateness of the other." (134) Despite many recent attempts to explain music's powerful expressiveness, it remains perhaps the most inexplicable of the major arts. The perceived incomprehensibility of musical expressiveness led Schonberg to remark that "music does not express the extra-musical" (1967, 93) and Stravinsky to observe, just as mysteriously, that "music is the phenomenon of speculation aimed at the elements of sound and time." (Cited in Langer, 1953, 125) Apparently, music confounds by its abstractness: The ordering of sounds references nothing more concrete in the world of ordinary experience, yet, at the same time, the directness of perception of music makes it the most concrete of aesthetic experiences.

Music is the art form most often selected to demonstrate the validity of the theory that human imagination is what supplies felt form in art. Roger Scruton (1979) observes that "(m)usical movement is not part of the material world and therefore not

something of which a bird could take cognizance. No scientific description of the world of sound need mention—as an independent fact of the matter—the phenomenon of musical movement." (83) Yet, it is in musical "movement" that so much of its felt expressiveness resides.

We humans, Scruton argues, hear movement along a scale of notes when, in fact, "nothing in musical space can actually move" (82) because, as self-conscious beings, we are able to supply what is not actually there; we accomplish this with the self-conscious faculty of imagination. Human consciousness, then, is what bridges the gap between the two realms, the material and the spiritual, which humans alone inhabit. It is imagination that joins a sequence of disconnected individual notes into an aesthetic whole, a melody; a creature lacking self-consciousness, a bird, Scruton suggests, would hear only sound. Self-conscious imagination is thus the faculty that locates feeling in what otherwise would be brute sound. Feeling, we are supposed to understand, comes in various "forms" and it is by somehow by embodying those forms that music "expresses" feeling. (Langer 1953)

The final chapter of this dissertation will clarify the notion of "forms" or "shapes" of feelings and will clarify the actual links—the isomorphisms—between feelings and physical forms. For now, let us grant that it is theoretically possible to speak meaningfully of the "form" of a feeling. It remains to make clear how "brute sound" achieves such form, and how it is possible that humans can perceive form whereas birds cannot.

Everyone can identify "shape" in the arts of painting, sculpture and architecture, and most are familiar with the analogical reference to "shape" as applied to narrative structure in literature, and to poetic form as well. In the latter two, shape has much to do with repetition and variation of literary elements, a fact that leads to a consideration of *memory* as the faculty by which music assumes form. With memory, we hold in consciousness what has passed, the perceived moment which, if shape is to be evident, must be compared with what is now present. In other words, shape in music, like shape in literature and poetry, becomes evident only over *time.* To speak of shape in music, so the traditional theory goes, it is necessary to consider memory and the perception of time

as essential elements in the imaginative creation and perception of music. This, presumably, is why music is deemed a *temporal* art

If the traditional theory is valid, not only music, but dance, cinema and the "frozen music" of architecture are to be distinguished from sculpture and painting and, in another mode, architecture, which are "spatial" arts. But surely, this is a false distinction. Who has ever aesthetically experienced a painting in the blink of an eye? Does the aesthetic appreciation of *Guernica,* for example, occur when it is viewed as a camera would in a snap of a shutter? Certainly, the appreciation of all painting, even a simple line drawing, is a *process*, an activity that builds and develops over *time*. Sculpture must be circumnavigated; certainly memory must hold in consciousness the form of sculpture as it emerges over the time it takes to walk around it. *All* aesthetic experience is synthetic; hence all perception of art takes time and requires memory to complete the process of synthesis. The process is aided, in the case of painting, by the fact that memory has before it constantly all the cues it requires to assist it, should it momentarily "lapse." The experiences of sculpture and architecture are aided by the fact that what was perceived in moments past can be easily re-visited.

But music presents a greater challenge to memory, it is supposed, because a note endures for a moment and leaves behind no reminder of itself. The "shape" of a melody can only emerge if memory holds the past securely in place and builds upon it note by note, retaining in consciousness an ever growing number of notes. Music, on this traditional view, is staggeringly more difficult to "get" than, say, painting which presents so much less a challenge to memory.

It is here that we must question and ultimately abandon traditional theory because experience surely contradicts this account. Music soothes the savage breast, as everyone knows. Infants can be soothed by a gentle melody. Children who could not make much sense of Cubist painting can easily commit melodies to memory, singing them back after just one hearing. The ups and downs of a melodic line are not the great challenge to memory or to other intellectual faculties that the traditional theory makes them out to be.

No fancy intellectual work is required to grasp or remember a melody; in fact, a melody so easily embeds itself in consciousness that it is usually what is called into service to assist in recalling the words to a song: the melody "carries" the words and "brings them back" when they are forgotten. As Nietzsche well knew because he understood the deep, felt, roots of theatre, music in every sense *precedes* words. This is so because the body "precedes" the workings of the intellect, including memory; and music is "heard" and "remembered" *in the body*.

Movement in a melodic line, far from presenting a challenge to conscious memory, is present in consciousness as a single, continuous, shaped bodily movement. Recalling a melodic line is never a matter of reconstructing it one note at a time, as words in a recently read paragraph might be recalled. To recall the words that constitute a poem, musical devices—repetition, rhythm, rhyme—are at hand to assist.

Berleant (1991), despite his desire to radically revise aesthetic theory to ground it in a more engaged, experience-based and *whole body* philosophy, bought the traditional theory of music in its entirety:

> What lies at the heart of a phenomenological interpretation of musical form … is the operation of memory. For while sounds occupy a transitory and elusive moment, music is far more than the relentless passage of auditory instants. There is a relatedness and cohesion to musical sounds. … It is the capacity for aural memory that permits musical continuity and shape to appear and that allows the very possibility of repetition. Moreover, we can grasp the experience of form only by means of memory. … (144)

However, Berleant attempted to rescue the traditional theory from its essentially intellectualist bias by distinguishing two types of memory:

> What we should observe, however, is that the function of memory in musical experience is rather unlike its use in other places. Music does not require factual recollection or what has been called "durable memory." Memory here is rather a consciousness of the immediate auditory past, a consciousness that extends, moreover, as a projection from that reservoir into the future. Music functions within a mnemonic aura, so to speak, of past and prescience. Its sounds resonate for a while in imaginative perception and carry at the same time an anticipation of sounds to come. There is, then, … a phosphorescence of perception whose glow extends

> to enclose the musical work and become the shape of its experience. (144-45)

The problem with this analysis is that, the "mnemonic aura" aside, although it accounts for the relatively weak challenge to memory presented by the melodic line, it does not account for the felt sense of movement in melody; although it attempts to explain how one note may be "linked" both to what comes before and what comes after it, it does not explain the sense of movement "up" or "down," the very thing that gave Langer, Scruton and others such difficulty.

Insisting on an intellectual faculty as the source of a felt quality in music simply ignores the responses of infants and "savages" to music. The experience of music is, by almost everyone's account, the most intimate of aesthetic experiences; a reliance on the intellectual faculty of memory to construct—or re-construct—"form" is clearly misplaced. Memory is not more involved in the experience of music than it is in any of the arts, and that is because time, the problem memory is supposed to solve, is not a fundamental aspect of the perceptual experience of music.

Significantly, it was with music that Wolfflin (1886) began his theory of sympathetic modeling. Wolfflin wanted to dispel the notion that the feeling of the experience of architecture originated in the eye. The analogy he chose for making his point was that music is certainly not "felt"—its expressive qualities are not perceived—in the ear: Just as our pleasure in seeing a graceful curve does not derive from the movement of the eye in a smooth path, our pleasure in music in no way involves the mechanics of hearing:

> In order to understand the theory of musical expression, it is necessary to observe our own production of tones, the meaning and application of our own means for producing tones. If we did not have the ability to express emotions with our own voice, we never would be able to understand the meaning of the sounds of others. One only understands that which one can do. … the forms of bodies can have character only through the fact that we ourselves possess bodies. … the tones of music make no sense unless we regard them as an expression of some sort of feeling of being. (3-4)

In music, it is not the shape of sound that we are presumed to sympathize with, but the composer as he hummed his melody to himself, the internal body work he had to perform as the melodic line took form. It is the human voice—the very sensitive muscles in the throat and respiratory system—Wolfflin argued, that model a line of music. When we either vocalize, or imagine vocalizing, a melodic line, we model with our bodies the form or shape that carries expression. The contractions of the throat and the respiratory system create spindle cell tensions, kinesthesia. It is the location of this modeling activity, deep within the body's core, that makes the experience of music particularly intimate and intense.

Wolfflin's explanation of how the body itself supplies the felt expressive qualities of music is borne out in the actual practice of the art of music. Itzhak Perlman insists that all his students study voice during their training on stringed instruments as a means of learning to "feel" in their core body regions the music they are learning to play. People who claim not to be able to "carry a tune" are usually disabused of that notion when they learn to access and activate muscles in the throat they had neglected to notice; carrying a tune, they soon discover, is a matter of attending to the positioning of the tongue and jaws, and controlling the opening in the throat in ways they never suspected were necessary. Modeling a melodic line requires muscle control much as any other modeling does; once the appropriate muscles are engaged, the source of musical "movement"-–the tension levels related to the "upward" or "downward" tilts of various melodic lines—is readily understood.

Expansions and contractions of muscles in the respiratory system are related not only to movement along the musical scales, but also to regulation of volume and other aspects of musical "color." In sum, production of the entire felt range of music is fully explicable as a complex of muscle tensions. If, as Wolfflin argues, we listen to music by internally vocalizing it—"sympathetically modeling" what the composer did—then the aesthetic experience of music duplicates the bodily experience of the composer, activating tensions in the inmost core of the body.

It is with this understanding of music-making and music reception that we can now tackle the question of the perception of *time* in the experience of music. Every

schoolchild knows that, from the point of view of physics, movement, *v,* is a function of a change of distance over a period of time: $v=\Delta d/\Delta t$. A change in spatial position, $\Delta$d, is experienced as movement between two points; $\Delta t$ in the equation represents the period of time over which that change of position occurs. Should not our experience of movement, then, include our experience of time elapsing? That, at any rate, is what supposedly supports the theory that music is a temporal art. If movement is experienced, so the argument goes, is not the passage of time experienced as well?

To respond with a counter-question, I might ask whether we experience the passage of time as an element of the experience of music and the other "temporal" arts in ways that we do *not* experience the passage of time in our experience of, say, painting. If the traditional theory were correct, although we might be glancing at our watches during a performance of Beethoven's Ninth and worrying about missing the train back to Connecticut, we would never feel the need to do that same thing during an experience of, say, Pavel Tchelitchew's richly complex painting, *Hide And Seek.* But, of course, time passes during an experience of a painting as it does during an experience of a symphony, and in just the same way.

If any art form that involves *movement* or that takes time to appreciate *essentially* involved the perception of time passing, any aesthetic theory would require discussion of such vexed subjects as the "reality" of time, and its representation. Fortunately, that will not be necessary here because we have inserted into this conversation a notion that makes considerations of time irrelevant. In this discussion, we focus on the immediate experience of music and find that it is an experience of *movement* as a *single, unanalyzable perceptual whole*, movement perceived as *kinesthesia*. In modeling movement, a perceiving subject activates his muscles, and his muscular expansions and contractions create the "feel" –a single, qualitative whole—of that experience.

To say that movement as perceived in music cannot be analyzed into a change in position and a passage of time, is to say that movement, as continuous, functions as the calculation of an integral does in Newtonian mathematics. That is, changes in position must be considered as they are in the calculus, over intervals approaching zero. The model of integral calculus is apt here because we never experience the sensory spindle

cells reaching point A, then point B, then point C, etc. as they stretch; the passage of time, in this analysis, is represented by the starting and ending points of the integration process: The arc of movement is the integral taken over the distance between time A and time B, not something that could possibly be consciously experienced. Stretch is a *continuous* motion, and the perceptual response to that stretch movement is a single, unanalyzable feeling.

Setting aside the calculus and returning to what is, in fact, experienced, we understand that conceptually breaking the experience of felt music into its mathematical analysands, time and spatial position, is not only unnecessary, it leads to a false account of that experience. What is experienced is *tension*, a response to the stretch of sensor cells activated by muscle movement in the act of modeling vocalization of the music heard. The feeling of throat and chest muscles expanding or contracting, is not a feeling of distance traveled over time. Neither the distance stretched through, nor the time it takes for the spindle cells to stretch, are ever aspects of kinesthetic experience, any more than the excitation of sensors in the retinas are ever aspects of visual perception. The sensory apparatus does its work below the level of consciousness. What is felt is a complex stew of many muscle groups in the activity of stretching. The felt outcome is whole-body kinesthesia, the felt experience of music. Time, as such, never figures in this experience.

But what does this analysis of music offer to deepen an understanding of the art of landscape? To understand how landscape functions as art, we must understand how it becomes expressive, how, as a mute, material object, it manages to embody feelings such as melancholy, triumph, fearfulness, and joy. If specific feelings are, as James conceived them, simply clusters of muscle tensions occurring throughout the body in specific patterns, a feeling is a pattern of tensions produced in the body by its various stretchings. The feelings we experience while traveling through a landscape, then, derive not from the passage of *time* as we move through the landscape, but from the *movement* itself. Movement creates feeling in landscape art as it does in music.

Although a walker might be aware of time passing as he strolls through a particular landscape, his perception of time is wholly *apart from* the feeling the

landscape arouses in him. The experience of time in the experience of landscape is just what it is in the experience of any art, and pretty much what it is in any experience.

This section's discussion of kinesthesia in the perception of music serves to demonstrate that the perceived need to parse the vagaries of the perception of time and its representation is unfounded. Movement is, in the experience of both music and landscape—and architecture—a single felt experience that at no point breaks down into the experience of space and the experience of time.

I noted earlier that space, in the consideration of landscape, is not, as Newton would have described it, a neutral, empty container of objects; space in a landscape is space-as-felt, space-as-experienced. Similarly, time in the experience of landscape is time-as-experienced, and time, in the experience of landscape, is movement. Thus, it is with movement that we are concerned, for it is only movement that generates the feelings the experience of landscape elicits.

**Landscape And The Art Of Dance**

Like the art of landscape, dance has received little or no attention in traditional aesthetics. As interest in dance grows, philosophers have been at pains to account for their previous neglect. (See, e.g. Levin, 1983 and Sparshott, 1983.) It has been suggested that philosophy has neglected dance because it is difficult to include a serious consideration of bodily movement in a discipline that conceives itself as concerned with "higher," more intellectual, or more "spiritual" matters. (See, e.g., Sheets-Johnstone, 1992; 2009) The same argument might be made about philosophy's neglect of landscape art.

If sculpture is, as Hegel believed, the "highest" or most fitting expression in material form of the human ideal because it presents human spirit most perfectly embodied, so much more so does dance deserve to be considered the aesthetic ideal as human spirit expresses itself even more richly in gesture, not only in noble postures, but also in idealized movement. Pressing this line of reasoning further, we might conclude that landscape art achieves an even "higher" form of artistic expression for, in landscape

art the human body not only finds its natural form thoughtfully shaped into postures and its movements thoughtfully structured, but the human body so shaped and moved finds itself moving through a thoughtfully structured natural environment which reflects back to it the triumph of human spirit over crass material nature. Whether or not we view landscape art as the next stage in the development of Spirit, it cannot be doubted that dance and landscape share deep roots as arts that rely for their expressivity on human bodily movement.

The concept of landscape art as *choreography* creates a perhaps surprising analogy to dance. As with any analogy, however, there are critical distinctions to be drawn. In this section, I sketch briefly the distinctions between the two choreographies, but the analogy between dance and landscape art, and the ways the two differ in perception, are so important to a full understanding of landscape's expressivity that I devote the next full chapter to a more detailed analysis.

In this section, I examine two theories of how body movement acquires expressive—felt—meaning: Wolfflin's theory of "sympathetic modeling," and Arnheim's Gestalt theory of visual perception. Both these theories explain the felt qualities of perception as derived from "tensions," either originating in the musculature as kinesthesia, or in the visual cortex as electrochemical activity. In the next chapter, I critically evaluate a third theory, what I consider the traditional theory of dance expression, that understands bodily movement as "symbolic" of feeling.

*Sympathetic Modeling and Dance Expression*

The landscape artist, I have proposed, choreographs for the walker in much the same way as the dance choreographer structures movement for the dancer and for the dancer's audience. The next chapter takes up the question of whether landscape art can accurately be characterized as "dance for the dancer," a question of the extent to which the landscape walker's experience is similar to that of the dancer. In this section, I consider only the experience of the audience spectator, the one for whom the dance is

choreographed. To the spectator, the experience of dance would seem to be primarily *visual*.

In landscape art, the performer is, oddly, also the audience, and so the landscape artist choreographs for the walker who actually "performs" the choreography. Visual experience is vitally important in the perceptual experience of the walker, but the direct kinesthetic perception of the walker's own bodily movement, I am arguing here, plays the most powerfully expressive role in the experience of landscape art. The dance choreographer creates what initially seems to be an entirely *visual e*xperience; kinesthesia is elicited in the dance audience in the mediated way it is elicited in the visual arts generally, as an "indirect" perception.

I define "indirect kinesthetic response" as one which begins with a retinal stimulus and is experienced both in the visual cortex and also in the musculature throughout the body; a "direct kinesthetic response" originates with bodily movement, with the stretching of the sensory receptors in the musculature, whether in locomotion of the limbs or in postural changes. Dance choreography, according to the theory of sympathetic modeling, considers that much of its felt quality will arise *indirectly*, by way of *imagined modeling* or *kinesthetic memory.* The felt impact of a dance work thus depends upon the ability of the audience spectator to engage with the work by "sympathizing" with the dancer. ("Sympathy," in the case of dance, will not provoke charges of anthropomorphism because here the "model" is, in fact, a human being.) The felt response of the dance spectator is thus a function of his kinesthetic sensitivities. In dance, therefore, kinesthetic experience is a derivative phenomenon with a more attenuated intensity.[15]

Watching a dancer run up a ramp and tipple at the precipice, we hold our breath, but this experience is only derivatively visceral. In this example, the visual image triggers the kinesthetic response: As Wolfflin would have it, we *model* the dancer's leap,

[15] In Chapter Five, it will be seen that recent neuroscience—particularly the theory of "mirror neurons" – offers an empirical neural model whereby the visual perception of human bodily movement can be understood as, itself, a kinesthetic perception; that is, the "modeling" required in Wolfflin's theory is understood to be carried on automatically in the innate wiring of the human brain. As that research is in its infancy, I deal here only with the philosophical, speculative theory put forth by Wolfflin.

instantaneously and reflexively calling up kinesthetic memory and imagination. Our kinesthetic experience in this case is weak, an "indirect" outcome of modeling.

But if the spectator himself mounts the stage and ascends the ramp, his dizziness is immediately—kinesthetically—visceral; his leg and abdominal muscles, not only his eyes, are sources of his kinesthetic response. If the spectator then takes the leap, it is his own blood pressure that drops and his own head that feels light, not as an associated memory but as an immediate—direct—perception. Although some of his kinesthetic responses are prompted by visual cues, most—the most intense—are directly perceived neuromuscular responses to locomotion. This illustrates the differences in intensity between immediately and mediately perceived kinesthesia.

Landscape is an *immediate* kinesthetic experience because the perceiver—the walker-- is *in* the dance. Visual cues received in the course of actual locomotion merely supply additional, associated or modeled, kinesthetic responses. In the experience of watching a dance, however, we must *imagine* ourselves performing the dance and then utilize body memories to imagine what the dancer is feeling. To experience the dancer's series of high leaps as "lightness" or "escaping gravity," to experience a stooped, bent posture and slow walk as heaviness, the spectator imaginatively models those experiences with his own body: The visual perception triggers imagined kinesthesia in the spectator's own body. As an observer seated in the audience, the spectator has very little freedom of movement and can *actually* model the dancer's movements in only the most restricted way. No matter how attentively he engages with a viewed dance, and no matter how intense his own kinesthetic memories are, he is never *in* the dance as the walker is *in* the landscape. It is the dancer and the walker whose bodies perform the choreographed movements and who experience direct—intense--kinesthesia.

Both dance and landscape employ static arrangements--dance in the held pose, landscape in the "vista" or "view"--and in both arts these are explicitly visual components which elicit low-intensity kinesthetic responses in their respective audiences. But even when the dancer breaks a pose to return to movement, the spectator's delight nevertheless remains primarily sourced in mediated kinesthetic responses.

The dance choreographer takes the spectator's viewpoint as fixed: The dance work is designed to be seen frontally from a distance, as a painting is. The term "choreography" as applied to landscape, however, refers to a sequence of movement to be executed or "danced through" by a walker who is, himself, the audience for the work. The walker as "observer" can thus only be a *self*-observer attending to the "feel" of his own locomotion; the walker's view of bodily movement is thus a *self*-view, an experience of his own muscle tensions and kinesthesia, a *directly* perceived kinesthesia.

While the dance choreographer structures the visual aspects of the dancer's moving body—how its movement appears to an audience-- the landscape artist's medium, what he actually shapes, is, in one respect, the Earth itself; more importantly, however, the landscape artist shapes the sequence of the walker's kinesthetic responses to the movements of his own body. The landscape work is, then, essentially a work of *shaped kinesthesia*, a *thoughtfully structured sequence of kinesthetic responses achieved through movement.*

*Gestalt Analysis of Dance Expression*

Rudolf Arnheim's theory of aesthetics (1954) applies the Gestalt theory of visual perception to each of the arts, including dance, on the assumption that all of the arts are visual arts, that all expressive art comes to us through vision. The brain model that explains feeling as arising from tensions in the visual cortex is, in this theory, applied in all aesthetic considerations. Arnheim's argument for the expressivity of visually perceived *movement* tracks his Gestaltist approach to non-moving imagery. The Gestalt brain model is employed to explain the visual perception of *movement* as disturbances within the brain's electrical field which, in the natural "struggle" to maintain equilibrium, produce felt tensions in a related region of the brain.

In the visual perception of movement, as in static visual experience, Gestalt theory understands the "seen" as also the "felt." Movement has directionality, shape, strength, amplitude—most of the characteristics that two-dimensional painting has, and

these can be accounted for in much the same way as Gestalt theory accounts for visual dynamic tensions in a still object. Human gesture—dance—is thus to be understood as acquiring felt qualities by virtue of innate neuronal processes in the visual cortex.

As innate processes that depend upon the brain's electrochemistry, tensions in the brain's electric fields are unvarying as compared with the outcomes of sympathetic modeling which depend on such individual variables as kinesthetic sensitivity and memory. Gestalt theory thus ensures the outcomes of expressive activity with greater certainty than does the theory of sympathetic modeling. However, the more a particular dance represents a human narrative, the more closely the spectator will tend to sympathize with what is seen, and even abstract dance movement elicits a measure of sympathetic modeling. The dancer with whom we share the experience of Earth's gravitational field is, for that reason, an object of sympathy on which we automatically model our own bodies.

Although Arnheim wrote very little about landscape art, (see, however, Arnheim, 1966), his general theory can easily be applied to the visual experience of the landscape walker. The walker's felt perception of his own movement through the landscape, understood as a purely visual experience, is an experience of landscape forms *moving past and around* him as he travels. Even when the walker pauses to observe the "view," he likely perceives the movement of objects: Trees swaying in the wind, water moving in streams or artificially moved in fountains, and so forth. These movements are instances in which the landscape walker may be said to experience "dance" as a spectator would at a dance performance. Gestalt theory would consider that the electrical tensions induced by such movement contribute felt tensions to the walker's experience.

The most significant contribution to the walker's experience, however, must be understood, on the Gestalt model, to come from what can be accurately likened to a "cinematic" experience: The walker in the landscape can be said to experience visually what a camera strapped to his body might record as he moves through it, the flat retinal play of forms across his visual field. This movement embodies for Gestalt theory an interplay of dynamic forces all of which produce tensions in the visual cortex, all of which thereby result in feelings.

The felt experience of depth as the camera moves forward and backward, the distortions produced by tilting the camera as it moves over rugged terrain, the rhythms of the entire body's movement—all produce felt tensions which Arnheim would consider, together with the visual tensions in still vistas, elements that contribute to the felt quality of the landscape experience. In the case of landscape, it must be noted, Gestalt theory can only account for the movement the walker *sees*. This seen movement is neither the movement of a human form changing its own shape or nor the movement of the tracings the moving body creates in the surrounding space. The movement that generates feeling is the apparent movement of the walker's entire surroundings and any actual movement of things within the landscape. In other words, the feeling of landscape is, in Gestalt analysis, the feeling of external experiences. This visually perceived movement, its patterns, and the feelings such patterns of movement generate in visual perception, will be considered in the next section under considerations of expressive cinema.

I am arguing in this dissertation that the defining—central—perception of landscape art is kinesthesia, a whole-body perception. But in Gestalt theory, the landscape experience is, for the walker, a purely visual experience of the three-dimensional surround as it "moves" around him on his travels through it. This involves the sort of radial expansion patterns from which Gibson arrived at his theory of depth perception. If depth is, as Gibson argued, a perception of movement, then all depth perception has a "feel" to it; a landscape aesthetics based on Gestalt theory of visual perception must consider the conditions underlying the various feelings depth perception arouses. Arnheim's aesthetic theory, however, considers visual perception as flat, retinal in the sense of a projection of deep space on the retinas, not in the sense of Gibson's notion of "scanning." Thus landscape, for Arnheim can only be a visual experience of shapes and textures moving in sync with the movement of the walker, a movement that has shapes of its own, but shapes that are "purely" visual. Their felt qualities are the result of activity in the visual cortex and in no way depend upon muscle responses. It is not surprising, therefore, that Arnheim takes no account of movement in his sparse writings on landscape. (See Arnheim, 1966, pp. 123 et. seq.)

The difference between dance and landscape art, I am suggesting, may be considered the difference between, "movement observed" and "movement performed." However, Gestalt analysis considers only the visual: Perceptions of the walker's body movements—muscle tensions—do not come up for aesthetic consideration. Likewise, in Gestalt aesthetics, the experience of the spectator at a dance performance is considered a purely visual experience.

When the dancer is seen moving in the dance space, Arnheim explains, (1956) her movement is perceived as dynamically charging that space, or "creating" a new perceptual space in a sequence of continuously altering patterns; the dancer and the surrounding space together result in a single visual image such that the body of the dancer produces what I shall, in the next chapter, refer to as a "tracing," a moving line that develops over time. Boundaries between the dancer and her surround shift as the tracings of her bodily movement "spatializes" time. (See, Bergson 1910) As a *visual* art, dance relies, according to Gestalt theory, on the dynamic forms the dancer's moving body generates in space over time, its moving image.

In landscape art, the walker himself is at the center of dynamic tensions, and most frequently perceives *himself* as the center from which dynamic vectors radiate. The walker's perception of the work of art does not include a perception of time or of spatial shape because the walker, as generator of spatial shapes, is situated *within* those shapes. The walker's perception of the shapes generated by his own body is, precisely, his kinesthetic perception, the pattern of muscular tensions distributed throughout his body; this perception, which is in no way visual, is utterly neglected by the Gestalt account of dance.

I have not, here, considered the perceptual, felt experience of the dancer herself and the extent to which her experience is either visual or kinesthetic; this discussion must await the next chapter in which I take up the question of the relationship between the experience of the landscape walker and that of the dancer.

Whether the analysis proceeds on the theory of sympathetic modeling which takes both dance and landscape art as essentially kinesthetic, or on the Gestalt theory which understands them each as visual arts, it is clear that these two art forms, although

they both involve the choreographing of human bodily movement, are very different and, that much of the difference between them stems from the fact that in dance the performance is directed at a remote spectator whereas in landscape art the choreography performed by the walker is directed at his own perception, at himself as "audience."

**Landscape and The Art of Cinema**

The phenomenon of cinema has helped to reinforce the false notion that perception of movement must be a matter of seeing small changes in distance "run together" over time. Gestalt experimentation demonstrates that the brain—in the "second" cortical area—creates, *on its own*, a perception of motion when the retinal stimulus consists of no more than a pair of identical still objects in different locations; brain activity "fills in" between two spatially separate objects. However, the experimental evidence is that this perception of movement, what Wertheimer termed "phi" or "pure movement" is, in fact, a third phenomenon, neither the perception of time nor the perception of spatial placement. Movement perception is thus a single, separate "third" thing with its own perceptual identity, its own felt qualities.

The mechanical means by which cinema conveys the perception of movement are familiar to all. What is important to our investigation of cinema is not this mechanism, but the way movement is perceived by the movie viewer. The *art* of cinema—its expressivity—derives from the filmmaker's freedom to creatively enhance, re-structure and alter that movement.

The filmmaker transforms ordinary objective movement by several means, involving either the movement of the camera itself, the movement of the camera lens, or the process of film editing. Movement of the camera in pans or dolly movement—or by the more "natural" movement of the hand-held camera—creates movement beyond the movement of the filmed subject, a subject perceptually analogous to the dancer. Lens movement in zooms and shifts of focus contributes yet another level of movement. Finally, editorial cutting and pasting re-constructs recorded movement. Editing can interrupt, enhance or entirely restructure a film's narrative. Thus editing establishes a

film's rhythms which, like musical rhythms, elicit kinesthetic tensions. Still further movement can be furnished by changes in light and texture, and by the "movement" of background music. With so many kinesthetically powerful effects at work, the film's core narrative movement acquires a greatly heightened impact.

The issue of "reality" stirs frequent discussion in film because it is usually a highly "realistic" photographic image and equally "realistic" natural movement--images that directly refer to the "real" existence of their subjects--that are manipulated. But film does not care what images it records, and abstract drawings and cartoon figures are as easily filmed-- and manipulated--as "reality." Filmmakers can also by-pass the photographic recording mechanism altogether and directly deform film stock with scratches, paint and pinpricks. As the inquiry here is about the extent to which cinema's expressive possibilities rely on *movement* and the resultant kinesthesia, it makes no difference what subject matter is perceived as moving. What concerns us is the expressive impact of perceived movement as it is generated by cinema, and the question of whether landscape art relies on "cinematic" techniques to enhance the kinesthetic perception of the walker.

If cinema were simply a matter of recording the movements of objects, the viewer's experience would consist of watching moving objects—moving patterns of light and color-- from a distance and the analysis of cinema would be almost identical to the analysis of dance: Cinema's kinesthesia would be understood as arising in part from sympathetic modeling and in part from tensions in the visual cortex produced by movement's continuously altering arrangements of shapes and lines within the visual field. When the walker through a landscape stands still within it, taking in a view of moving objects, the same analysis obtains for landscape art as well. But the filmmaker *adds* movement in the processes of filming and editing that have substantial perceptual and aesthetic implications.

*Kinesthesia Induced By Subjective Camera*

One artistic decision the filmmaker makes involves point of view; camera placement positions the "eyes" through which the viewer experiences the film's movement. Will the viewer see the film through the eyes of an omniscient narrator, or through the eyes of an engaging character? When the filmmaker films "through the eyes of a character," the viewer's relationship to that character becomes more intimate, and the likelihood of empathy developing for that character increases. This encourages sympathetic modeling. With the skillful use of subjective camera technique, the film becomes no longer dance "viewed from a distance," but a more direct experience of movement, something oddly closer to the walker's experience of the landscape.

The subjective camera may travel on a smoothly operated dolly, or it may be mounted on a wagon as it bumps along toward a little ranch, the character's home. As the viewer "sits behind the lens," the flat and distant screen image becomes much more a kinesthetically perceived movement, experienced throughout the viewer's body as he is helped to "feel" the bumps. This seems at first a remarkable transformation of an entirely visual experience of disjointed, "up and down" movement of images on the screen into a kinesthetic one. The source of the transformation may be understood as sympathetic modeling, but also as something more intimate and direct.

The camera's movement may be smooth and languid as it tracks its subject from a well-greased dolly, or it may be sharply angled and jagged as the cameraperson's hand or the bouncing wagon jostles it. A filmmaker might use the first sort of camera movement to create the soothing sense of a Hawaiian beach, and a movement full of sudden dislocations to build a sense of terror as the main character races up a flight of stairs in response to a strange sound coming from the attic. Subjective camera movement is thus a device by which the filmmaker *heightens* the tensions already developed in a narrative, a *dance* which contributes its own expression to what is conveyed by the film's narrative. Observing the actors' movements and facial expressions, and knowing the story as told in words also helps the viewer "sympathize" with the action on the screen and experience "gut" feelings of fear, joy, terror, etc., but when he is caught up in

the dance of the camera, seeing the scene from the camera's moving, "dancing" eyes, the viewer's kinesthetic response intensifies.

When the subjective camera is employed to ascend a flight of stairs to, say, track the main character who is investigating a terrifying sound coming from the attic, the filmmaker may, as noted earlier, enhance the kinesthetic impact of the scene by distorting the image in a variety of ways: The camera may repeatedly zoom rapidly toward the top of the stairs, creating the sense of a nightmare from which the viewer, like the character, cannot escape. Or the stairs may be filmed from a tilted camera, or a lowered camera so they appear unnaturally steep; they may change size as the ascent progresses. The viewer does not have to imagine—and sympathetically model—what it is like to climb to the attic; optically, he is doing it himself. Actually, he is *modeling* the nightmarish experience in his whole body, assisted by powerful visual imagery.

In comparing dance with landscape art in the previous section, I argued that because dance is viewed from a distance, it relies mostly on *indirect* means for kinesthetic effect, whereas landscape art generates kinesthesia directly by inducing specific movements in the walker's own body. In cinema, we encounter a *hybrid* of dance and landscape. Unlike the landscape artist, the filmmaker cannot *directly* move his viewers' bodies; he can only provide them with *visual* experiences. By "putting the viewer behind the camera" using the technique of subjective camera, however, the filmmaker conveys *part* of what dance feels like to the dancer—the visual part. In this regard, cinema resembles landscape more closely than dance does—the movie viewer is not as "distanced" as is the viewer of dance performance. So long as he watches the film, the viewer is obliged to dance--visually. (Particularly powerful kinesthetic effects are created when a camera "dances" while filming a dancer, in effect "partnering" with the dancer, entering into a visual "*pas de deux*.")

There is, of course, another answer to the question of how the flat screen images of a subjective camera generate strong kinesthetic perceptions, and that lies in the fact that, unlike paintings, film images move. J.J. Gibson began his investigations into depth perception by studying the visual patterns seen by pilots taking off and landing their planes. The flat images Gibson investigated consisted of *radial expansion patterns*

centered in the perceiving pilot. Such patterns provide the key to ordinary depth perception, the cues that the perceiver is moving in the third dimension. Importantly, it is precisely in forward and backward dolly movements and zooms—movement along the third axis-- that the subjective camera creates its most kinesthetically intense perceptions. The familiar thrilling "roller-coaster shot" records the race down the ride's tracks as high-speed patterns radially expand across the screen. The viewer, placed "behind the camera lens," experiences the "movement" with himself as the center of this expansion, a visual perception of depth which, itself, induces intensely felt kinesthesia. The patterns of radially expanding illumination offer powerful affordances, opportunities to which the entire body responds kinesthetically.

*The Kinesthetic Impact of Moving Imagery*

Dance as experienced in the body of the dancer—which I have argued is the experience of landscape—is the most powerful kinesthetic experience art can provide. But kinesthesia arises directly in the musculature throughout the entire body and is only derivatively an outcome of visual perception. If felt impact is a function of kinesthetic perception, as I am arguing here, it follows that we should expect the experience of cinema to be *less* intense than the experience of landscape. In actuality, however, the reverse is true. Cinema is considered perhaps the most emotionally powerful art form, while landscape is considered to be relatively weak in its felt impact. Why, if the landscape artist is able to choreograph not only what the walker sees, but also how his entire body moves, is not landscape a more powerfully felt experience than film? How can *visual imagery alone* induce the powerful responses we associate with movies?

One important answer is that the filmmaker can exaggerate the movement seen on the screen. A camera can be tipped sideways, moved rapidly in any direction, even turned upside down; a zoom can be exceedingly slow and relentless or speeded up to stunning effect. The degrees of motion available to the camera are virtually limitless and may take extreme forms, and the filmmaker relies on this to intensify kinesthetic response to his images. The landscape artist, by contrast, cannot possibly engage his

walker in so athletically taxing a "dance." The landscape artist can send his walker down a narrow, twisting ravine, but Alfred Hitchcock can make that ravine suffocatingly narrow and can twist it in excruciating ways.

Film's real power, however, springs essentially from the *story* it can tell, a story of a sympathetic character whose "inner voice" can be heard on a sound track, and whose inner thoughts can be revealed in action. Subjective camera can, by its "dance," take us further inside a character by letting the expressive movements of the camera convey feeling that is better expressed in gesture than in words. The "dance" choreographed by the landscape artist is the single most powerful expressive device at his disposal whereas, for the filmmaker, his camera's dance is merely an embellishment to a moving story. Yet, even in abstract films which lack narratives and consist entirely of elaborate camera movements—films in which the impact on the viewer is substantially attenuated--camera movement by which the viewer is brought inside the film to experience the dance movement *from within* creates a significant kinesthetic effect.

The filmmaker may have to rely entirely on optical stimuli, but even ordinary experience bears testimony to just how much our kinesthetic responses are triggered by vision. How much of the roller coaster sensation of "butterflies in the stomach" derives from the visual aspect—the radially expanding patterns—as we zoom down the steep slopes, and how much of that same gut response arises solely from the kinesthetic experience of the coaster's car moving on the rails? Anyone who has suffered physical distress on such a ride knows that closing her eyes to eliminate the visual patterns of radial expansion can substantially relieve her discomfort. Much of the feeling of "terror" in riding a roller coaster is due to the purely optical experience, the one that can be recreated on film.

But, of course, the moviegoer who watches a roller coaster ride filmed with a subjective camera is not actually moving at all. Moviegoers are as still as the slaves in Plato's cave. Yet there is significant kinesthesia derived from purely optical patterns, kinesthetic responses that cannot be attributed to body memories or "associated" images. On the movie screen, the *purely optical phenomena of moving objects* create feeling.

Image distortions, strange or exaggerated angles, spinning movements—all apart from what we associate with them—make the viewer feel uncertain and anxious. This may be used to enhance anxiety about the fate of a particular character but it is important to note that the viewer's anxiety is increased in such circumstances by the discomfort or insecurity he feels as a result of his *inability to make sense of his visual field*. It may be that not only the film's character, but the viewer's visual field, has become frenzied, unstable, chaotic, *dis-equilibrized*. The tightening the viewer experiences in his abdomen, his disorientation and panic may be, in part, responses to image movement so disorienting that the viewer experiences whole body dis-ease. Gestalt theory articulates precisely why some visual patterns "feel right" kinesthetically and others do not. It is precisely because Hitchcock, for example, knew the viewer understood himself to be watching a "mere" movie that he devised a bag of mechanical tricks that depend for their expressive force on the viewer's *kinesthetic responses* to purely optical inputs.

If kinesthetic perception is linked to *all* visually perceived movement—as Chapter Five will demonstrate it most likely is--kinesthesia affects the experience of landscape even when the walker pauses to take in "a view." The seen movements of trees swaying, water cascading, a leaf twirling as it descends—all generate some kinesthetic response. The felt tensions of shapes and lines as they change position, speed and direction over time, the Gestalt analysis suggests, induce kinesthesia; this analysis, of course, applies equally to dance, cinema and landscape.

### *Rhythm In Film And Landscape*

It is often said that it is in editing that the filmmaker manipulates time. It is true that editing allows the filmmaker to interrupt a scene and paste in footage from a different part of the narrative; editing can also be used to re-iterate, emphasize, or recall parts of a scene, replaying a "moment" for expressive effect. But these are essentially *literary* devices. A novelist, too, can "move back and forth in time" withholding information for dramatic purpose, controlling what the reader knows and when, leaving a blank in the reader's knowledge to heighten suspense, or hammering home a point

with repetition. The ability to control the sequence of film events is not the ability to "manipulate time" but the ability to enhance the shape of its literary structure, the *narrative*.

Editing, as the art of montage, is also employed as music is, to create *rhythms* that impact the viewer's entire respiratory system which, as has already been noted, is among the most kinesthetically sensitive. A slow-paced montage—calendar pages blowing away as the years drag on—or a rapid montage as the main character calls up many facts he has known all along and that suddenly illuminate his situation, create kinesthetic responses that "tell" the story more powerfully than dramatic action could; the *rhythm* of montage intensifies the curve of the film's narrative arc. The rhythms of contemporary editing are not usually as evident as they are in those old-fashioned montages, yet editing creates the underlying rhythms of the dances the camera performs throughout a film, rhythms that work intense kinesthetic effects on the viewer as he travels with the camera.

In the experience of landscape art, kinesthesia is directly induced by the choreography laid out by the artist, a choreography with its own specific *rhythms.* Landscapes set into the hills surrounding Rome, for example, alternate steep steps with wide, flat terraces so that the walker experiences a kinesthetic pattern that alternates taxing climbing with restorative rest; the use of narrow *allees* in Beaux Arts landscapes creates another sort of rhythm for the walker who travels alternately along narrow, deeply-shaded paths and then comes upon wide expanses of brightly-lit lawns. Steps of varying tread depths and varying riser height have been utilized in landscape to impose varying rhythm upon the walker. (See, Veder 2013) The variation-within-repetition of fountains of various shapes, or of other built garden structures placed at measured intervals along the walker's path create highly effective visual rhythms in a landscape.

The walker who follows the landscape artist's choreography while attending to his body's movements as one must attend in all aesthetic experience, experiences kinesthetically the rhythms intrinsic to the dance's felt shape.

**Landscape And The Art Of Painting**

There is no question that much of the experience of landscape art depends upon the visual. Although the argument in this dissertation is that landscape is not *merely* visual, much of the aesthetic pleasure we take in landscape art undoubtedly derives from an experience of shapes, textures and colors in patterns at rest and in motion. It is also true that movement through the landscape is frequently *induced* by visual enticements: We are drawn in a particular direction or beckoned down a particular path by what we see in the distance; we walk with our heads bent downward to take in a colorful bed of flowers, or strain our necks to glimpse a strikingly shaped tree in the distance. No account of how landscape functions expressively would be complete, therefore, without a consideration of how painting-like stimuli contribute to the landscape experience.

I have already made clear how Gestalt analysis accounts for the way "purely" visual perception acquires felt meaning. Wolfflin's theory of modeling provides another explanation of how visual patterns elicit kinesthetic responses and so acquire "felt" qualities. In addition, "association" theories such as Hume's remind us how potent memory can be in supplying feeling to what is seen: Visually perceived landscape elements arrive saturated with meanings bestowed by cultural associations and personal past experiences.

It should be clear by now that, apart from entertaining the eye, seen elements in the landscape also elicit kinesthesia. The landscape viewed, rather than "traveled through" is nonetheless kinesthetically arousing and so, as a felt experience, potent. The "outsider," "distanced" view of landscape—what is seen from a picture window, perhaps—also produces bodily tensions that come into consciousness as feeling.

Philosophical aesthetics has long attempted to account for how physically "flat" works, such as paintings, can move the entire body as voluminal objects do, how, that is, painting induces a sense of felt depth. Collingwood (1938), holding up Cezanne as a paradigm of a voluminal painter--a painter whose work makes the viewer want to reach out and grasp its apples-- finds himself compelled to argue that the viewer's experience "does not consist of what he sees. It does not even consist of this as modified,

supplemented and expurgated by the work of the visual imagination." (147) The experience of painting, Collingwood claims, does not belong to sight alone, nor does it belong merely to touch, the experience of "sensitive fingertips." (147) Rather, the experience of painting, says Collingwood, relies on our experiences of distance and space and mass, of motor sensations we experience "by using our muscles and moving our limbs." (147)

This explanation of painting's kinesthetic impact certainly harkens back to Berkeley's explanation of depth perception: We construct depth—and respond to it—utilizing perceptions recalled from stretching out our limbs. But do we, in fact, experience convincing depth in Cezanne's paintings—which are flat, like retinal images—by integrating memories of actual body movements? Collingwood does not intend that actual or recalled motor sensations are felt; our responses to Cezanne's paintings, he insists, are *imaginary* motor sensations. In order to appreciate painting, one must be able to imagine the kinesthetic experiences cued by the painting. For Collingwood, this is part of a larger theory that considers art the product of a "higher" imaginative consciousness. Art, including landscape art, depends on a "leap of imagination" in which, Collingwood argues, human consciousness transforms brute material objects into art. Hence, only a human being is capable of responding with feeling to a painting. (My critique of Collingwood's view—and of other similar theories—is found in a later section of this chapter.)

Berleant (1991) too, struggles to account for what he considers the tendency of flat paintings to "engage" the viewer. What, he wonders, is it about a painting that eliminates the "distance" we all know is there? Berleant's refusal to consider the kinesthetic component of *all* experience and to insist, instead, on the "purely" visual, leads to some strange results as when, for example, he draws a distinction between the "horizontal" landscape paintings he calls "panoramic" and those that depict serpentine paths which, he believes, lead the viewer "into" the painting. It is surely naïve to suppose that the mere appearance on a canvas of a curving form—or the effective use of perspective—induces the viewer to "enter" a painting. If Berleant is serious, he has

inadvertently set up a standard for evaluating painting which relegates "panoramic" landscapes—and all "flat" abstract and cubist painting, too—to an inferior status.

To the extent that Gestalt theory's cortical tensions are assimilable to kinesthetic muscle tensions, even "flat" visual perception produces kinesthetic responses that reinforce kinesthetic responses derived from modeling to produce the felt qualities of paintings as well as the painting-like aspects of a landscape. If it should turn out that there is, in fact, a significant difference between the way *muscle* tensions on the one hand, and *visual cortex* tensions on the other reach and chemically alter the brain, we may revise this explanation to say that all feeling in the arts is a matter of *tensions*, some of which are kinesthetic and others of which are *like* kinesthetic tensions, but are differentiated in ways specific to the different cortices involved. If we can assume that all "tensions" arising in sensory organs, whether the retina or the muscles, are fundamentally similar, it becomes clear that all felt qualities, regardless of the sensory paths they take to consciousness, are "kinesthetic."

In sum, the theory of modeling and the Gestalt theory of visual perception --both of which explain feeling as sourced in tensions either in the visual cortex or the area of the brain where muscle tensions are represented—can together account for how painting and the painting-like aspects of landscape experience generate feeling. In the next section, I turn to the distinctive ways kinesthesia serves as the source of what we feel in our experiences of landscape art.

## The Unique Role of Kinesthesia in Landscape Art

At the start of this chapter, I proposed defining landscape as the art form that *shapes the experience of moving through immersive volume as a structured sequence of kinesthetic and visual perceptions to produce a continuum of specific feeling.* Comparisons with the various art forms that landscape art incorporates suggest that this definition can be further elaborated.

Like the art it most closely resembles, architecture, landscape relies on *direct* structuring of the perceiver's body movement to elicit kinesthesia; the landscape artist, like the architect, shapes the walker's own body movements by directing both locomotion and postural attitudes. This shaped movement directly impacts the large muscles in the walker's limbs and the walker's sense of his own size and mass. In this respect, both landscape art and architecture are "dance for the dancer." The landscape artist, however, need not concern himself to the extent the architect must with functional considerations; the landscape artist is freer to exploit the full expressive possibilities of structured kinesthesia.

The fact that landscape art shapes and structures the walker's body *directly* distinguishes it from dance performance, which is a visual art, a shaping of the human body in movement that is directed at a distanced spectator. The dynamic tensions created by the movements of the dancer's body are experienced by the spectator as tensions in the visual cortex and as kinesthesia that develops indirectly by way of the viewer's "modeling" the dancer's gestures. Modeling triggers body memories the strength of which are dependent upon the viewer's kinesthetic sensitivity and memory. Landscape, on the other hand, produces *unmediated*, powerful kinesthetic effects. Landscape experience includes, as well, visual experiences of motion; elements within a landscape move and the walker's own movement creates movement in his own visual field; both these phenomena create for the walker the visual experience of movement: dance observed.

The fact that dance movement is experienced from a distance whereas landscape art is experienced *from within* the movement itself, means not only that kinesthetic impacts are felt more powerfully in landscape art, but that the visual aspect of the walker's own movement—the traces of his body in space--are not aspects of his experience: The walker does not experience himself as tracing lines in space, shaping it over time. Time is therefore not a perceptual factor in the experience of landscape art. Movement through the landscape is more akin to the experience of movement in music: It is experienced kinesthetically as an unanalyzable continuous whole, not as a sequence of positional changes that spatialize time.

In addition to the direct means landscape art employs to induce kinesthetic responses, it creates kinesthesia by virtue of its impact on the retinas as well. As a voluminal art, landscape relies on the walker's perception of depth for some of its kinesthetic impact, and also induces kinesthesia by means of modeling.

The walker encounters sculptural objects within the landscape which he may choose to contemplate as he would contemplate a work of sculpture, isolating the element—whether a single tree, a clump of trees, or a piece of garden statuary—from its surroundings and engaging it while circumnavigating it. But the walker who chooses to continue along his path without stopping to experience the landscape's sculptural elements nonetheless encounters sculpture-like objects which strongly organize the dynamic tensions—the felt force fields—of the space the walker shares with them. As the walker moves through the landscape, these tensions constantly shift and re-organize both his visual and kinesthetic experience. A sculptural element that is not isolated for circumnavigation may be seen as the moving subjective camera trained upon a moving subject sees it, but the surround that the walker shares with each of the landscape elements is, unlike the visual surround that the camera records, a voluminal surround; as one element emerges from the peripheral blur of the walker's vision into sharp visual focus, others drift into that blurry region. The dynamic created by this coming-into-focus-and-passing-out-of-focus is what keeps the visual experience of the moving walker constantly exciting and kinesthetically stimulating. This constant shifting within the visual field is not entirely dictated by the landscape's choreography, of course; the walker himself decides where to focus his eyes as he travels among the landscape's sculptural elements and so creates much of the felt movement that he experiences in his visual field.

Thus landscape also functions as a visual art—one in which the visual field is usually in perpetual motion, shifting with the ever-changing position of the walker and with his decisions as to where to focus his gaze. The movement of the visual field itself creates tensions in the visual cortex, electrical alterations which, in perception, are perceived much as kinesthetic tensions are, as feeling.

Finally, the landscape viewed from a stationary position functions as painting does, producing tensions in the visual cortex that are perceived as endowed with feeling precisely because those tensions are, at root, kinesthetic. When viewed within a frame, as through a camera lens or a picture window, landscape comes closest to resembling painting: Its felt impact depends upon the arrangement of dynamic tensions inherent in relationships among its formal elements—color, line, shape, field/ground, texture and such. As soon as the viewer is set *within* the landscape, however, the experience is one of immersive depth that carries its own distinctive kinesthetic impact.

Thus the art of landscape draws upon all the other arts to produce kinesthesia, integrating them, in most cases, into an experience that is essentially an experience of movement through voluminal space. In creating a work of landscape art, the artist must integrate all these elements into a coherent unified experience in which the "feel" of each element is used to reinforce the impact of the others or to play against it for expressive effect.

What is unique to landscape art, however, is that the artist can manipulate kinesthesia in the perceiver *directly*, inducing body movements and hence expansions and contractions of the spindle cells, sensations that arrive in conscious perception as whole-body kinesthesia. Although the architect, too, relies upon directly-induced kinesthesia, he is far more restricted in the ways he can move the perceiver's body, and so lacks the freedom to fully orchestrate the body's potential for directly experienced kinesthetic response.

## Objections To Psychology-Based Aesthetic Theories

An objection may be raised at this point: Does not the direct inducement of kinesthetic perception by structuring the walker's movements amount, not to art, but to mechanism?

Art is supposed to engage the higher human faculties, the imagination, a voluntary function of higher consciousness. Is it not this distinctly human consciousness

that is called into play when we see paint on a canvas "as" art, or hear a sequence of sounds "as" music? Art, it is argued, is created by humans to be experienced only by humans. It is directed to what is free in human nature, what is capable of imagining what is not, in fact, there. (See, e.g., Collingwood 1938.) Do the two psychology-based theories of aesthetics employed here to make sense of kinesthesia as a source of feeling reduce artistic expression to mere mechanism?

Imagination arises in those acts of consciousness whereby the self comes into consciousness as well. Lacking self-consciousness, animals can only act upon what they see or hear; they cannot make the imaginative shift to what is not, scientifically speaking, "out there." A dog hears sounds, Langer points out (1953), but a dog cannot perform the *imaginative act* by which brute sound is transformed into a scale of notes moving "upward" or "downward;" a dog can see the masonry that makes up what science conceives as a building, but he cannot imaginatively supply what is not actually there, transforming mere masonry into architecture. (See, e.g., Scruton 1979) A dog can see a dancer move on the stage but cannot supply the imaginative shaping by which her movements become, in consciousness, expressive gesture. Nor can a dog, Langer insists, find the painting on the colored canvas, perceiving the "third" dimension in the flat object's diagonal lines. The account given here—and elaborated by Gestalt theory and by Wolfflin's theory—is, it might be argued, a crassly materialistic one in which man is considered to have about as much appreciation of art as his pet canine.

I shall return to consider this objection in greater depth in the final chapter in which I will consider expression theories of art. However, at this point I would note that the appreciation of a work *as* art requires a particular kind of *attention*, and attending is always an act of *voluntary* consciousness. We can decide not to attend to our kinesthetic perceptions and simply hurry through a building, ignoring the "strong" columns at the entrance. We can dash through a garden, talking on a cell phone; in such a mood, it is unlikely that our attention will be directed to the tall tree in the distance despite the best efforts of the landscape artist to alter our posture. We can always choose to ignore the work of the artist and move about as a dog is presumed to do, or we can voluntarily elect

to have an aesthetic experience, one in which we attend deliberately to the whole- body perceptions the work elicits in us.

The "work" of art does not reside entirely in the way its elements individually elicit kinesthesia; a work captures our attention and recommends itself as something worthy of enjoyment for the sheer feeling it elicits because of what the artist has done with those elements. The artist selects and structures the elements of a work thoughtfully, giving consideration to the felt tonality of each element in the psychic experience of the perceiver. From those elements, the artist builds a coherent whole such that the final work produces a refined, heightened and unique feeling. But the perceiver must voluntarily open himself or herself to the experience of a situation *as* art. Art never imposes itself, *qua art,* on anyone. It follows that the engagement of the "higher" faculties of consciousness and the voluntariness that is a characteristic of consciousness are factors in any experience of art.

Having agreed to enter into an aesthetic experience—an interaction with a work of art—by, say, attending to the feeling of a landscape, we can then go further and attend as well to the critics we have read. We can try to understand, in yet another act of conscious human intellect, the various ways our kinesthetic and visual experiences support and reinforce one another, or the ways they enjoyably play in opposition to each other. We can also try to appreciate the work as an example of a style, an expression of the spirit of a particular historical period in a given culture, an understanding that will deepen and sometimes alter the experience our initial perceptual experience. With this understanding, we will scrutinize both the visual and the kinesthetic aspects of our experience. Dogs, it seems clear, can do none of this.

All that said, the "directness" with which kinesthetic perception is elicited in landscape, and the directness with which, as we shall see, such perceptions induce specific feelings, may give some pause about including landscape-- and architecture—as fine arts. There is something too mechanical going on here; it seems the walker is being manipulated much as a patient is manipulated by a chiropractor, and we hesitate to call the manipulator an artist.

I have already demonstrated in this chapter that *all* the arts vitally rely upon kinesthesia. I can only hope that once it becomes clear that feeling, generally, has its sources in kinesthesia, and that art must, therefore, depend upon kinesthesia for its expressive function, this suspicion of directly induced kinesthesia will fade. Once it is evident that what is thought of as "purely visual" art depends for its expressivity on kinesthesia as much as other arts do, and that all feeling comes down to the same essential neurobiological factors, the notion that "directly induced kinesthesia" is simply one means among others of eliciting feeling will find wider acceptance.

Whereas "direct" kinesthesia may be regarded as mechanistic or manipulative because it is elicited by causing the body to move in various ways, indirect kinesthesia that results from either sympathetic modeling or tensions in the electrical fields of the visual cortex seems to pass as a product of the "higher" faculty of human imagination. But modeling is only possible because the feeling of kinesthetic perceptions *can be recalled* from past experiences of the body's movements. If the body had not ever moved in response to *direc*t stimuli, or if it could not recall the feeling of that movement, the imagination would have no memories to call upon for the act of modeling. The argument that art can *only* involve remembered kinesthesia, therefore, involves an endless regress. It makes no sense to say that the immediate experience of kinesthesia disqualifies an experience as aesthetic, and that only reliance on imaginative re-construction of that same experience allows an experience to qualify as art.

But what of those tensions in the *visual* cortex that I have argued must account for at least part of the expressivity of moving patterns in dance and cinema, and what of the formal relationships in painting, architecture and sculpture? What of line, color, shape and texture? Gestalt theory employs a causal model: Tensions arise in the electric fields of the brain without any conscious, willed intervention by the perceiving subject; no one can but perceive jagged red lines *as* angry. Does the Gestalt model, then, deprive the visual arts of their nobler position as "fine?"

Arnheim and other Gestalt theorists agree that, to the extent that their sensory apparatus resembles that of humans, animals are as capable of experiencing the felt qualities of visual form as humans are. But that really doesn't matter for the argument

here. What draws a human consciousness to a work of art and compels its attention so that appreciation of it becomes possible, is the way its complexity is worked out: A work of art is not a simple felt percept, but a complex process of "putting together." The artist puts together elements that are "congruent" with or "resonate" with one another in unique ways. Gestalt theory provides a means of accounting for how particular elements utilized by the artist acquire their felt qualities; it accounts for why some potential elements for a work seem to resonate with the feeling the artist is trying to express while others do not. A sensitivity to and understanding of those feelings and what can be done with them creatively is the basis for the creation of an aesthetic situation. If there is "mechanism" involved in the Gestalt theory of art, it is at the very lowest level, the level at which the elements of a work manifest their qualitative significance before the artist decides which to reject, which to include, and how to integrate them into a unified work.

Taken from the point of view of the creation of the work, then, is the activity of making a landscape solely a matter of craft or technique, or is it the sort of activity normally identified as the creation of art? I have suggested that the concept of a landscape work should be arrived at by the landscape artist in the same way a composer conceives a musical idea: by working it out in interchanges between imagination and bodily activity that engages the medium. When the landscape artist works in his specific medium—on site as earth is moved and plants are set in place—he does more with his body than draw. But whether the interchanges between subjective imagination and the bodily acts of structuring the expressive medium involve drawing or earth-moving, the feeling to be expressed takes shape as it emerges from the artist's ongoing bodily activity—and its felt kinesthesia--an activity that is simultaneously an activity of his creative imagination.

In all artistic production, technique plays a crucial role. The painter must know how to mix his colors to achieve the effects he desires; the composer must understand the mechanics of key changes, scales, and musical "color;" and the landscape artist must understand the kinesthetic impacts of downward-sloping and upward-sloping ramps. To choreograph expressively, the landscape artist must be sensitive to the perceptual

responses elicited by each element in his work and make an effective selection from among various options precisely as artists in other media do.

The objection that landscape's "shaping" of the human body's postures and movements imports "mechanism" into the work and thus renders it the product of craft rather than of art springs, I believe, from a visual bias, an *ocularcentricity*, that has infected discussion of the arts since the inception of philosophical aesthetics. It is precisely this bias that accounts for the many mysteries that often surround philosophical accounts of the arts, and it is the same narrowness of thinking that accounts for Environmental Aesthetics being so much in thrall to the "ineffable." What is not being said and needs to be said is that *kinesthesia* is the basis of feeling in *all* the arts, and that it plays a uniquely *direct* role in landscape and, to a lesser degree, in architecture. Hopefully, the ocularcentric bias will lose ground as the art public becomes more accustomed to thinking in kinesthetic, rather than exclusively visual, ideas, and as the critical community becomes increasingly fluent in the language of kinesthesia.
It may continue to disturb certain aestheticians to learn that no "higher" faculty of human nature is required to discern melodic movement, that, in fact, if dogs could access the proper throat and chest muscles, they might experience the "movement" in music much as humans do. Scruton's claim that birds hear only sounds, not music, is, I would venture, based more on philosophical bias than on any deep familiarity with the aesthetic lives of birds. The birds with whom I share my home move their entire bodies to produce variously pitched sounds, and they are particularly excited by the sounds of flutes and violins on the radio as they attempt to "sing along." If there are spindle cells lining their tiny muscles, I would not hesitate to conclude that they "feel" the movement of the sounds they emit and hear.

Traditional expression theory of dance, likewise, (See, Langer, 1953) defines dance as "meaningful gesture," bodily movement that is somehow—mysteriously—endowed with feeling such that the human spectator alone "gets" it. What is communicated from the dancer's gesture to the spectator, according to this way of thinking, is *form*; form is where feeling is located and form is only perceptible by a "higher" human consciousness. The dancer's pet cat, so the theory goes, can perceive

the dancer's movement but is unmoved by it because the cat lacks the higher faculty by which meaningful form is perceived as inherent in that movement. The dancer's movement is "symbolic" but the cat can't "read" the symbolism. Dance turns mere movement into expressive gesture by transforming ordinary movement into something not "real" but "virtual" and only human consciousness can intuit the virtual. (Langer, 1953.) Or, dance movements are "illusory expressions of vital force" (Berleant, 1991, 155) I would suggest that at least part of failure of the dancer's cat to "get" the expressive meaning of her owner's gestures is due to a lack of congruence between the body structure of the cat and that of the dancer; the cat cannot possibly "model" what her owner is doing.

Traditional aesthetics has generated a long list of metaphysical terms to "explain" how expression comes about and why it is, in every case, something accessible only to humans. In each case, the matter turns on the metaphysical assumption that humans occupy two realms, and it is by virtue of this dual citizenship that they can effectuate a bridging of the two, synthesizing brute material and spiritual meaning. This is how aesthetic theory traditionally accounts for the fact that, to humans anyway, brute objects seem to "carry" or "convey" felt qualities which science makes clear they do not "objectively" possess.

Arnheim and Wolfflin—and Gibson, too—were all psychologists of perception before they were aestheticians. The first two would consider this leap or synthesis something that is accomplished automatically in the hard-wiring of all perception: Whether it is a matter of modeling, or of the brain's electric fields resolving dynamic tensions in the most equilibrizing and efficient manner--or of affordances discovered in the process of retinal scanning--the kinesthetic component of perception inheres in it without any intellectual activity on the part of the perceiver. Wolfflin and Arnheim understand the felt "powers" and "forces" of dance, for example, as body-based, *kinesthetic*, stored responses and immediately, innately, produced tensions within the visual cortex.

For the landscape artist—and, to some extent, for the architect--- *there is no gap or distance to be bridged* in the appreciation of their works of art: The walker's body

travels through the choreography the artist has created, experiencing *directly* the kinesthetic perceptions the artist intended.

## Applying The Two Aesthetic Theories In An Analysis Of Landscape

In this section, I demonstrate how the Gestalt and modeling analyses might apply to an analysis of a familiar garden style, the Cottage Garden.

Arnheim wrote very little about landscape art. (See, however, Arnheim, 1966, 123 et seq.) It is, nonetheless, easy to imagine how his analysis of visual perception might be applied to the visual aspects of landscape. Arnheim understood that the frame is one of the most powerful aspects of visual perception, creating a sense of orientation--and with it comfort and repose. The frame imposes an implicit visual grid within which other vectors are organized, and so, depending on what lies within it, it can as easily create a sense of *dis*orientation in which the tensions in the brain's force field remain uncomfortably unresolved. Applying this analysis to the style of the Cottage Garden, we understand the visual perception of enclosure within the garden's very pronounced, high walls or surrounding hedges as t powerfully enhancing comfort by creating a strong visual sense of organization and orientation.

Wolfflin, too, would consider the high surrounding hedge comforting insofar as it induces modeling in which the entire body feels "embraced," secure, ensconced in what Bachelard would view as a nest or room. The relatively small, humane size of the Cottage Garden, entirely surrounded as it is by high walls or hedges, creates the perfect womb for retreat and safety, a perception that induces the entire body to enjoy a sense of protection and relaxation. As Bachelard wrote of the comforts of enclosed spaces:

> Physically, the creature endowed with a sense of refuge, huddles up to itself, takes to cover, hides away, lies snug, concealed. If we were to look among the wealth of our vocabulary for verbs that express the dynamics of retreat, we should find images based on animal movements of withdrawal, movements that are engraved in our muscles. How psychology would deepen if we could know the psychology of each muscle! (1969, 91)

In the Cottage Garden, the powerful frame is countered by an unusually profuse array of color and an extraordinarily destabilizing pattern of angled shapes and twisting paths. Visually, this is, at first, dis-equilibrizing, creating tensions in the visual cortex that are difficult to resolve. On a more direct kinesthetic level, the disordered interior patterns of the garden make navigating it difficult: The narrow, gravelly or rocky paths require careful attention to balance, and the walker finds himself constantly in peril of losing his footing. The visual chaos is echoed in the pathways by which the walker travels through the garden.

The sharp contrast between the garden's frame and what lies within it thus creates a pleasurably intense alternation of dynamic tensions. To someone standing *within* the enclosure and *moving* through it, the stabilizing hedge is felt *viscerally* as reassuring containment, even as the visual profusion of plantings produce a destabilizing visual perception and the undisciplined twisting of the internal paths induce a de-stabilizing kinesthesia. The garden's impact thus depends on a fierce interplay of opposing tendencies that are manifested both in visual experience and in the muscle tensions in the chest, inner organs and limbs of the walker. His movement is both stabilized by a powerful framing device and destabilized by an array of disordered shapes, colors and textures, as well as by the garden's choreography that sends his body on a dizzying path. Undoubtedly, the intensely dynamic interplay of these contradictory effects accounts for the continuing appeal of the Cottage Garden that endures as a favorite landscape form well beyond its historic necessity as a source of food for poor tenant farmers.

## Kinesthesia As The Source Of All Artistic Expression

This chapter has examined the various fine arts and has, in each case, inquired how landscape both is and is not like that art. As a *Gesamtkunstwerk,* landscape embraces and integrates many of the fine arts, including painting, sculpture and architecture, and experientially resembles dance, cinema and even music. What this

chapter has revealed is that, although landscape *explicitly* and *directly* employs movement of the recipient's muscles as a means of expression, landscape is by no means unique in relying on kinesthetic perception to convey feeling.[16] Each of the art forms examined in this chapter now appears to rely for its expressiveness on kinesthesia, and thus on some sort of movement. Whether felt qualities are explained as due to electrical tensions in the visual cortex, or as due to whole-body muscular responses, *all* expression, it is now clear, depends on kinesthesia. What is unique to landscape is the way it induces kinesthesia in the receiver of the art work, the walker.

Landscape art affects the walker's body *directly*, creating movements that have *immediate* kinesthetic impact. In all the other fine arts, the kinesthetic response is elicited by way of an organ other than the musculature, the "organ" of kinesthetic sensation. It has been suggested that landscape is, in effect, dance as perceived by the dancer, a claim that has yet to be examined in depth but which will consume the next chapter.

That all of art depends for its expressivity on kinesthesia should come as no surprise. To say art is expressive is to say it conveys feeling, and feeling, I have already suggested, is simply the way self-movement comes into consciousness, the way we become aware of our bodies' movements no matter how minute. If art functions by conveying feeling, it follows that art functions by *moving* us. That landscape moves us in a publicly observable way, producing movement of large, external parts of our bodies, suggests that landscape may be a paradigm of how artistic expression functions in every case.

[16] In this dissertation, following contemporary usage in some writing about landscape aesthetics, I use the terms "receiver" or "recipient" to denote the person having the aesthetic experience elicited by the work of the artist.

# CHAPTER FOUR:
# EXPRESSIVE MOVEMENT IN LANDSCAPE AND DANCE

## Two Choreographies

The marriage of the landscape architect, Lawrence Halprin, and the dancer/choreographer Anna Schuman, produced several decades of experimentation with the complex relationship between dance and landscape art. While Anna Halprin moved her modern dance performances out of doors and into ever more urban environments, Lawrence Halprin became increasingly aware of the extent to which his work as a landscape artist was essentially choreography. Much of their collaborative work was produced in the 1960's when dance choreographers were shifting away from a preoccupation with the visual appearance and spatial design of dancers' movements and attending more to the kinesthetic aspect of spatial experience; the process of performance, rather than presentation, became the focus of choreographies as spaces in which dance was performed became more open and audiences became more intimately involved in creating and inhabiting the dance space.

By that time, architects had already begun to consider their own work more in terms of movement, and to speak of their work as choreography. In 1928, Laszlo Moholy-Nagy wrote of dance as a powerful means of shaping space:

> From the point of view of the subject, space can be experienced most directly by movement, on a higher level, in the dance. The dance is an elemental means for realization of space-creative impulses. It can articulate space, order it. (Cited in Merriman, 2010 at 433)

Lawrence Halprin, himself, articulated the concept of landscape art as choreography in an early article, *The Choreography of Gardens,* (1949) in which he announced a deliberate rejection of the traditional idea that a landscape should be created as a visual experience intended to be looked at from a fixed vantage point. The

landscape, he argued, should be understood as a "framework for movement," (32) something that should flow as dance does:

> If it flows easily in interesting patterns of terraces and paths, varying its texture of paving underfoot, and its foliage backgrounds, and fences, all rhythmically united…then it can influence people's movement patterns through its spaces, taking on the fine sense of a dance. If the garden pattern remains static, unidirectional and purely decorative, our kinetic experience in it will also be limited, circumscribed and continuously frustrating…. (O)ur everyday surroundings have tremendous importance in their influence on our emotional lives….If the kinesthetic sense is satisfied at a dance concert and left dormant during the week, we are only half alive. But if it can be cultivated…in our daily lives…by designing for constantly pleasant movement patterns, our lives can be given the continuous sense of dance. (32-34)

In this short essay can be found the germ of the idea that landscape art is kinetic and that, as such, it is affective, that the forms of movement in a particular environment *create feelings in those who move through it.* The landscape artist, Halprin recognized, choreographs for the pleasure the walkers through his landscapes will enjoy in their own bodies' movements. In later decades, he would develop a system of notation for "scoring" human movement through landscapes, both deliberately designed and cultural urban environments and suburban shopping malls, in the hope of enabling designers to work kinesthetically. (See, Merriman, 434)

Over the years, the Halprins conducted a number of interdisciplinary workshops in which dancers, architects, landscape artists, musicians and others experimented together with exercises designed to divert attention away from the visual and toward kinesthetic awareness. One such experiment tested Goethe's famous claim by staging blindfolded city walks designed to develop "direct experience of the kinesthetic sense in space." (Halprin, 1974 , 183) For decades, both Halprins continued to explore the affective dimensions of spaces, the way dance "feels" to the dancer and way landscape "feels" to the walker. Although unaware of the neuroscience that connects kinesthesia with the qualitative feel of human emotions, the Halprins sensed intuitively the impact of structured movement on the feelings of the performer of the movement, and the ways

careful attention to kinesthesia in the structuring of space can affect the aesthetic enjoyment of it.

## Some Preliminary Considerations

Landscape art has been defined in this dissertation as an art that *shapes bodily movement through immersive volume as a structured sequence to produce both kinesthetic and visual perceptions that yield a continuum of specific feeling*. The site plan and the built landscape, both works of the landscape artist, are both plans or "scores" for a walker's movement, but what is ultimately shaped by the landscape artist is the walker's bodily movement itself, and, thereby, the walker's kinesthetic perceptions. All works of art, I have argued in the previous chapter, are affective—convey feeling—by eliciting kinesthetic responses; in the case of landscape art, it is the body movement of the work's *recipient* that is *directly* shaped by the artist.

Dance, too, is an art of bodily movement that conveys specific feeling by way of movement through voluminal space. The notion of a score or choreography of specific movement creates significant formal analogies between the two arts, as both art forms rely on both visual and kinesthetic stimuli to convey their expressive content. As noted in Chapter Three, landscape art resembles dance more closely than it does any other art form.

Chapter Three also noted critical differences between these two arts. Dance is a performance art in which the performance is created for and presented to an audience that is, itself, immobile and distanced from it; it is, for the audience, an experience that begins as visual but is experienced as kinesthetic. Landscape art involves a performance plan or score for movement to be performed by a walker who is *also* the recipient of the art work, its "audience." Landscape is art *for* the walker. We might inquire whether it is, therefore, what dance is for the dancer.

The difference as to who performs the choreographic score results in a significant difference in *how* the art is perceived. Landscape art relies upon a *direct*

kinesthetic experience in which the walker's own body movement is shaped. The audience at a dance performance, on the other hand, has an *indirect* kinesthetic experience, one which begins as a visual perception and then, depending on the explanatory model employed, requires either the mediation of kinesthetic memory, or sympathetic modeling, or the cooperation of deeper neuronal processes.

Dance for the spectator begins as visual imagery of a moving human body that carries expression. The traditional aesthetic theory of dance considered the question of how various movement forms—"tracings"—acquire and convey specific feelings. As considered by Susanne Langer (1953) and others, this is a question of how shapes and other formal *visual* properties such as seen movement come to be experienced as symbols, felt forms, what Langer termed "the forms of feeling."

The art of landscape, however, bypasses symbolism precisely because of the "directness" with which it employs kinesthesia. By directly operating on the walker to produce various bodily attitudes and by choreographing specific bodily movements, landscape art creates patterns of muscle tension that *are themselves* recognizable feelings.

In this chapter, I consider Maxine Sheets-Johnstone's theory of how dance movement expresses feeling, and I examine aspects of her 1966 detailed analysis of dance which transposes Langer's aesthetic theory of dance to a phenomenological account of the experiences of both the dance spectator and the dancer herself. I then examine the ways landscape art either resembles or differs from dance, and consider the extent to which landscape art may properly be conceived of as "dance for the dancer" where the "dancer" is the walker.

## The Double Aspect of Self-Movement: What Is Felt, What Is Seen

As bodily movement, dance for the dancer is a doubly-perceived phenomenon involving both a visual perception by the mover of her own body traveling in space over time—an external phenomenon which is essentially public and, so, available to the

audience spectator—and the mover's internal perception of the muscle tensions associated with that movement—the private sensation, and then perception, of kinesthesia. I cannot move my arm without experiencing kinesthesia, the inner affect, but if I proceed blindfolded--or if I move my arm over my head and do not look up at it—I am doing something others can see but I cannot, although I continue to perceive my arm kinesthetically. No bodily movement occurs on a macro scale without the mover feeling it internally—kinesthetically—and no such movement occurs without some external manifestation that is, in theory, detectable by others.

As two aspects of the same event, the internal and external aspects of bodily movement are, as Sheets-Johnstone, quoting Soren Overgard, points out, "inseparably realized as one…. The kinesthetic brings with it its external side, and kinesthesis is itself the spatial movement." (2010, 113) This two-sided nature of bodily movement Sheets-Johnstone terms "kinetic/kinesthetic," the seen movement of a public object in three-dimensional space and the felt movement of muscles as they expand and contract producing that bodily movement. Any macro level bodily movement can be attended to either as a visual or a felt kinesthetic event.

> (W)hen I scratch my head, I can experience space objectively in the three-dimensionality of the movement of my arm as it travels upward toward my head…or I can turn my attention to the qualitative dynamics of the upward lift….(114)

Kinetic, external, visually observable bodily movement creates what is phenomenologically its own space, time and force; that is, it may be characterized as having tensional, projectional, areal and linear qualities. Kinesthetic movement, on the other hand, is in perception, as described in Chapter Two, a *felt quality*. As the receptor cells that sense movement internally are distributed throughout the body's musculature, kinesthesia is usually experienced as a *whole-body* feeling, even as a recognizable, nameable one, a feeling given the name of a familiar emotion.

When a dancer performs a dance, she begins with a feeling to be expressed. This feeling, she understands, is a kinesthetic pattern, a pattern of felt muscular contractions and expansions distributed in their specific locations throughout her body. Without an

external stimulus such as ordinarily might elicit such feeling, the dancer can induce the feeling in herself by a process of abstraction, that is, by tensing and expanding parts of her body so that the kinesthetic pattern she experiences internally is congruent to the pattern of that feeling when it occurs in response to ordinary life circumstances.
But the dancer does not usually hold a still pose in which the pattern of her muscle tensions mirrors the pattern of a feeling; she moves her limbs and torso and moves through the volume of the performance space. At the same time, and as an inextricable part of her publicly observable movement, she creates internally a fluid sequence of kinesthetic experiences that has its own unique*, internally felt* quality.

As the dancer moves, the publicly observable aspect of her bodily movement follows as a sleeve on an arm. Her movement through space is seen by others, her audience spectators, and what they witness is not simply an object, the dancer's body, changing its spatial position with time. The dancer's body is perceived by others as a *feeling* body, a body whose movements are generated by tensions that mirror the tensions of the feeling the dancer wants to put across. And she is able to put that feeling across because the movement that is visually available to the audience is imbued with feeling, shaped by feeling: It is an *expressive gesture*. The linear, areal, projectional and tensional characteristics of the dancer's bodily movement are animated from within by a pattern of muscle tensions that coheres with—is congruent with—the pattern of a feeling or sequence of feelings experienced in ordinary life situations.

> Formal aspects of a work resonate on their own with a certain qualitative dynamic that is congruent with the formal dynamics of human feeling. (Sheets-Johnstone, 2013, 33)

Sheets-Johnstone intended that remark to describe art in general, but it demonstrates that dance is perhaps a paradigm of artistic expression for, in dance, the internal—the kinesthetic—is *inextricably* bound to what becomes externalized and available for public consumption. The bond is the human body itself, the fact that its internal tensing muscles produce *both* the feeling internal to the dancer and the feeling-laden movement seen by the audience. As every bodily movement has both a kinetic and a kinesthetic aspect, all bodily movement is, to some extent, expressive of an internal state.

The dual nature of bodily movement—visible movement and the internal feeling that generates it—creates two distinct experiences, that of the dancer herself and that of her audience. The audience has ready access to the visual manifestations of the dancer's movement but, if the dance is to succeed as art, the audience must also somehow access the dancer's non-public feeling that generates that movement.

The audience spectator has no *direct* access to the dancer's own kinesthetic patterns, to the feeling she aims to express with her movements. The audience has only a visual perception of how the dancer creates and orders space, time and force with the kinetics of her body. The visually accessible movement is, we want to say, *imbued* with the dancer's feeling but how, exactly, does the visual perception of the spectator become, *as well*, a *kinesthetic* experience that somehow mirrors what the dancer experiences internally? This is a specific instance of the more general, central, question of aesthetics: How does expression actually work?

Many answers to that question have been proposed. Wolfflin's theory of sympathetic modeling explains the contagion of feeling—the "transfer" of feeling from the dancer to the spectator-- by postulating an innate, reflexive or instinctual process whereby the spectator imaginatively models in his own body what he sees, thus inducing in himself the feelings that, in the case of dance, generate the dancer's movements. Wolfflin, however, proposed this as an explanation of our responses to architecture, a still, static object that can be seen in an open space. It is difficult to consider the spectator at a dance performance actually making even the most demure movements while confined in the cramped seat of a theatre, but the possibility that the spectator can call upon his own kinesthetic memories and *imaginatively re-arrange* them allows us to consider sympathetic modeling as one possible explanatory model of how the remote audience spectator is "moved" by the dancer's bodily movement to have feelings similar to what the dancer has chosen to convey.

Wolfflin's concept of sympathetic modeling is, it seems, a rather clunky, mechanistic one when applied to dance. Surely, the audience spectator does not take time out during a dance performance to scan his catalog of kinesthetic memories and re-arrange them imaginatively so as to induce a series of kinesthetic patterns in his own

body. As an account of our responses to architecture, a single, still perception, sympathetic modeling makes more sense.

What would seem to be needed to account for the spectator's felt response to seen dance is something more immediate, more instantaneous and fluid than sympathetic modeling. But Wolfflin insists that modeling is an automatic reflex, something that might take no more than the instantaneous firing of a neuron. In fact, as will be seen in the final chapter, the essential concept of Wolfflin's theory can be modified by findings from contemporary neuroscience to provide a satisfying explanatory model.

Manfred Clynes (1975, 1980) developed "Sentics," an empirically-based theory that accounts for the contagion of feeling from one moving body to another, and also permits quantification of the linear, areal, tensional and projectional characteristics of movements correlated with each of various specific feelings. The discovery of mirror neurons in humans provides an additional neurophysiological basis for Clynes' theory that feeling is transmitted in visual experiences of the bodily movements of others because of *instinctual*, universal mimicking of seen movements, mimicking that *automatically* re-produces in the viewer the muscle tensions—and, therefore, the *feelings*—of the one viewed. What the neuroscientist calls "mirroring" can, of course, be easily interpreted as Wolfflin's "modeling" understood as an absolutely automatic, instinctual activity. In perceptual experience, therefore, what is seen—the dancer dancing-- is automatically and instantaneously *also* a kinesthetic experience, something immediately *felt*. For Clynes, the empirically-grounded model of how feeling is communicated from one human to another emphasizes that feeling is especially well-communicated by way of *bodily movement,* and so his explanatory model is particularly well-suited to explaining communication of feeling in the art of dance.

Another neuroscientific explanatory model of how feeling is communicated visually is the Gestalt theory of visual perception which, as has been discussed, relies on the "isomorphism" of visual formal properties with neural patterns to account for the felt qualities of what is seen. The next chapter will consider several such explanatory models and their implications for the art of landscape.

Philosophers have, of course, supplied their own, non-empirical, explanations of how and why expression works. These range from essentially psychological theories such as Burke's and Hume's association theories, to theories that attribute expression in art entirely to intellectual, intuitive processes. One example of the latter type of theory, that of Susanne Langer, is worth dwelling on briefly here first, because it gives special attention to dance expression, and also because it is the theory that Sheets-Johnstone, in developing her phenomenological description of dance, relied upon. Although Sheets-Johnstone, in her later writings, moved away from Langer's analysis, her notion of "congruence," a key concept in expression theory, still reflects Langer's influence, and it is important, for our analysis of both dance and landscape and of the relationships between them, to proceed with a precise understanding of just what that "congruence" amounts to.

## The Expressive Symbol

Susanne Langer (1953) addressed the problem of how a seen object or situation can convey feeling by conceiving of the seen/felt phenomenon as a symbol. What is seen conveys feeling, says Langer, because the formal properties of a material object take on virtual "forms of feeling." These forms are not, themselves, material, not accessed by the senses but are intuited intellectually. In dance, then, bodily movement—a physical phenomenon—is able to carry feeling to the spectator in the audience because the spectator *intellectually intuist* the feeling the dancer has endowed it with.
Langer argues that dance—and, indeed, all art-- creates a "semblance" or an "illusion" of feeling, a "virtual"—immaterial-- feeling. In the case of dance, movement, stripped of its practical function or value, is simply "form," the immaterial carrier of meaning. As such it is something only human imagination can access. Analogously, in a musical line, any percipient creature can hear sound, but only human consciousness can detect the upward or downward "movement" of the line, its "form" or shape that constitutes a melody.

Such form, according to Langer, is an imaginative construct, a thing that is virtually, not actually, there. Therefore, musical form is accessible only to creatures with the unique gift of *imagination,* the faculty which discovers form in what is otherwise brute matter. In dance, the visual perception of bodily movement is a brute physical fact which even a dog can experience; only human imagination, however, can experience in that movement a *form* that expresses feeling. The form intuited in the musical line or in the dance is what Langer means by "the form of a feeling;" it is by way of such form that feeling is communicated. The puzzle of how feeling can travel over the "gap" between the dancer's own movement and the remote audience's visual experience is thus solved by the introduction of form, the feeling-laden *symbol*. Do we in fact need to summon symbols—non-actual, virtual "semblances"—in order to explain how bodily movements—or any other material phenomena—carry feeling?

Sheets-Johnstone (1966) describes dance as the "illusion of force." The dancer, she claims, does not actually exert *real* force but conveys to her audience a set of felt tensions by creating an illusion of it. Now, as a visual art form, dance does present the spectator with a visual manifestation of "force." But F=ma defines force as a function of both distance traveled and the duration of that travel, modified by a constant, the mass of the moving body. *All* movement, therefore, is a manifestation of the presence of force; as force is not otherwise *visible*, movement is ordinarily how we know force is being exerted. Dance movement presents the human body doing what a body has to do in order to move at a particular rate of speed. It is therefore misleading to call the experience of seeing bodily movement an experience of an illusion or "semblance," a perception of a "virtual force."

Both the dancer's internal perception of force as kinesthesia, and the audience's visual perception of force as directed movement are empirical, actual, phenomena. There is no "illusion of force" involved for either the dancer or her audience. What is perhaps virtual, rather than actual, is the human *meaning* of the gestures these forces create: How do various seen gestures—what the dance spectator experiences—acquire human, felt, meanings? The symbol theory of expression posits an isomorphism—a "congruence"—between the forms of dance movement and the forms of specific feelings to answer this

question. (See, e.g., Sheets-Johnstone, 1966, 46) This congruence is thought to make possible a transformation of a mere physical phenomenon—bodily movement--into a work of expressive art for anyone who can "read" the symbol.

Making dance expression depend upon symbols places the dance performance squarely in the center of the philosophical problem of dualism. On the one hand, there is the physical fact of bodily movement; on the other hand, the expressive body must be considered as *something more* than a physical structure, an embodiment of form. Sheets-Johnstone says that the body movement of the dancer "incorporates consciousness…." (1966,35) which it undoubtedly does. However, it is not necessary to go beyond the body to understand an expressive gesture as the product of a consciousness which feels, wills and intends bodily actions. Nor is it necessary to conceive of the dance spectator as needing to employ a mysterious form of intuition in order to grasp the feeling conveyed by a dance.

Dualism can be avoided by arguing, instead, that if the spectator experiences feeling when he sees a sequence of danced movements, it is because *what he sees triggers a kinesthetic response*. The visual experience of the spectator is, as Damasio puts it, "co-registered" with kinesthetic memories. The visible shape or form of the dancer's movements conveys the *meaning* of the dance because the spectator experiences a kinesthetic pattern in his *own* musculature that is identical to the pattern the dancer utilizes in producing her movements. The spectator "gets" the intended feeling of the dance because his own body responds kinesthetically and the pattern of his kinesthetic responses *are* precisely the feelings the dancer is trying to convey.

This explanatory model acknowledges that *actual* force is exerted to create the dancer's movement, and that that movement is the way an external viewer understands the presence of force. The empirically-grounded description of the situation—and one which avoids dualism-- is that the dancer exerts actual physical force to create a tracing deliberately chosen by her for the feeling it creates; either the spectator understands that tracing either by imaginatively—or "virtually"—modeling or mimicking it to reproduce the dancer's feeling, somewhat attenuated, in his own body, or the spectator experiences the feeling as an integral aspect of the visually perceived form because of automatic

hard-wiring that connects the visual and the kinesthetic neurally. The "form" of the dancer's movement, on this account, is not something that resides outside the material realm inhabited by the dancer's actual body. Therefore, no symbol is required to "bridge" material and non-material realms. The spectator does not perceive a "virtual" or "illusory" form, but, rather, the dancer utilizes actual exerted force to produce a tracing of a distinct shape, and the spectator immediately experiences that tracing as his own internal kinesthesia.

In symbolism's explanatory model, the *image* the dancer creates with her movements "means" a feeling. The spectator recognizes this " form of feeling." as something familiar from his own ordinary daily transactions. The dancer is able to effectuate this meaningful communication by creating forms for her body that are somehow "congruent" with the feelings she wants to express. (1966, 46) It is this "congruence" that presumably creates the "bridge" across the divide separating dancer and spectator. Expression is possible, according to this theory, because the material shapes of body movements are "congruent with" shapes of feelings.

What does it mean to say a feeling has a shape, such that it could conceivably be "congruent" with the shape of a body or with the shape that body describes in space as it moves? A feeling, after all, does not occupy space and so cannot assume spatial shapes. The answer symbolism supplies is unsatisfying because it "bridges the gap" with an explanation as peculiar as Descartes' pineal gland and its strange positional semaphores. Since all shape is spatial shape, the symbol theory of art—and of dance—can only bridge the divide with odd linguistic dodges:

> (T)he art work is created and presented as a symbol, and what it symbolizes (is) *the form of actual human feelings*. Although the outward form in which the art work is created is different from everyday forms of feeling, that is, non-discursive rather than discursive, the formal properties of its structure are *logically related* to the *formal properties of actual human feelings*. There is an *organic similarity* in the dynamic structure of the artistic forms and the everyday forms of feeling: tension-release, suspension-fall, anticipation-climax, attenuation-abruptness, etc. The art work is a symbol, for it reveals a *logical congruence* of form with that which it symbolizes. The primary illusion the art work creates comes

> to life with the making of the symbol. (Sheets-Johnstone, 1966, 33) (Italics added.)

The "everyday forms of feeling"—tension-release, attenuation-abruptness, et al.—refer plainly bodily patterns of muscle tension which are perceived kinesthetically as *feeling*: "anticipation" is itself a subjective affect, a feeling, and not a bodily shape at all. Such human feelings are ontologically "other" than formal—spatial—properties of art works, so to say the two modes of existence are "logically related" or "logically congruent" begs the central question. This notion of "congruence" is fatally ambiguous as it pretends to unite or blend two utterly different sorts of things that simply cannot be congruent. The notion of congruence is inapt here because feelings simply cannot be thought to be congruent with physical shapes of either objects or movements.

However, each of the theoretical explanatory models proposed by Wolfflin, Arnheim and contemporary neuroscientists suggest a sort of congruence, a matching or mimicking or "isomorphism." Sympathetic modeling implies that the spectator at the dance imagines his own body as "congruent" with the body he sees. Mirror neurons, say the neuroscientists, perform that modeling innately and unconsciously. Gestalt theory's "isomorphism" involves a copying of the retinal projections of seen forms in the electrochemistry of the visual cortex; and Clynes' "sentics" involves an automatic mimicking or copying, a mapping of one body's gestures onto another's. What makes each of these explanations of expression more intellectually acceptable than symbolism is that the two phenomena said to be congruent are both of the *same ontological type*; they are both material occurrences. None of these explanatory models postulate "virtual realities," or "forms of feeling."

I began this section with a description of how the dancer expresses feeling with her bodily movements, a description that implied a concept of congruence that I believe makes sense. What are the two phenomena that are congruent to each other in that description?

The dancer who is sensitive to her inner, felt, life, and is attuned to her own kinesthesia proposes to express a feeling. She is aware of the patterns of muscle tensions with which her body generates feelings. Without that feeling arising in her as a response

to an actual lived situation, she induces in herself the pattern of muscle tensions *correlated* with that feeling. It is that pattern that shapes her postures and her movements, giving them expressive form. In this account, the "congruence" that makes the gesture expressive is the congruence between two sets of kinesthetic patterns, two patterns of muscular expansions and contractions: one pattern known to the dancer from her ordinary life experience and one that she induces in her body in order to allow her gestures to express—press out-- that feeling, make it public.

When the kinesthetic experience recurs in the dance spectator, he experiences as feeling the emotional content of the movement he is observing; that is, dance expresses because the spectator's own kinesthetic pattern is "congruent" with that of the dancer. Hence, what Clynes terms the "contagion" of feeling, the crux of expression. (1980, 273)

It is critical to note that this account of expression is entirely body-based, and so it absolutely avoids dualism. All the theories proposed by neuroscience that are treated in the next chapter have in common that they account for expression with theories that postulate internal processes that are hard-wired into the human organism as part of the way humans interact and communicate, innate survival-based operations of consciousness. Each of those theories is translatable into each of the others; there is very little difference among them for our purposes here as they differ essentially as to their sophistication and fineness of experimental evidence. In no case does any theory of expression treated hereafter in this dissertation consider "congruence" as anything other than *the congruence of one kinesthetic pattern with another*: A self-induced kinesthetic pattern in the musculature of the moving dancer can be said to be *congruent* with a pattern experienced by that dancer in ordinary life; or an automatically induced kinesthetic pattern in a spectator can be said to be *congruent* with the kinesthetic pattern—the sequence of muscle tensions—used by the dancer to create her movements. In no respect is a physical form, either of a bodily shape or of a movement, said to be congruent with a subjective, non-spatial, affect—a feeling.

In thinking about the relationship between "external," publicly visible, movement and feeling, it is more accurate to say that specific patterns of muscle tension

are *correlated* with specific feelings such that those feelings can reliably be generated by producing the patterns of muscular tension. To say that a pattern of muscle tension and a feeling are *correlates* is to say that knowing the pattern of muscle tensions, we can predict the feeling that the dancer or the spectator in the dance audience will experience. This entirely body-based explanatory model is substantially correct in light of recent developments in neuroscience. When, in the next section, I take up the way in which landscape art expresses feeling, I argue that the landscape artist can reasonably rely on the *correlation* of various bodily postures and styles of movement to intentionally create feeling in the walker.

Sheets-Johnstone's most recent analysis of dance employs the notion of "formal congruence" between spatial movement and felt emotion:

> To recognize the dynamic congruency of movement and emotion is thus to recognize an essential fact: an ongoing kinetic *form* is dynamic-ally congruent with the *form* of an ongoing affective feeling. A particular kinetic form of an emotion is not identical with the emotion but dynamic-ally congruent with it. Precisely because there is a *formal* congruency, we can separate out the emotion from the movement. (2010, 399)

It is difficult to know what such "formal congruence" consists of since all congruence involves a matching of shape. But shape is always spatial, and feeling never is and so the problem persists. I would suggest that the problem arises from a confusion about the very key notion of kinesthesia.

Sheets-Johnstone fully understands that in an ocularcentric world there is a tendency to allow kinesthesia to pass as a background experience, although she is intent on urging philosophers and the culture generally to attend to it and to grasp the absolutely key role it plays, not only as the basis of all art, but as the basis of language, cognition and virtually all of human and animal life. As Chapter Two of this dissertation explained, the concept of kinesthesia has long confused philosophers and perceptual psychologists because the same name is used for two utterly different phenomena, for both material, public sensations, and for non-material, internal perceptions that are subjectively felt.

As a *sensation*, kinesthesia is the sixth and, yes, frequently neglected, sense. Its operation is structurally identical to that of other senses, beginning with receptor cells in the body that send electrical and chemical messages to the brain, messages represented to the self in consciousness that become part of our awareness of what is happening both internally and externally. (See, e.g. Damasio, 1999) Kinesthesia differs in its mechanics from vision only in that the retina's receptor cells are stimulated by occurrences originating *outside* the body, whereas kinesthesia's receptors are embedded in the musculature and so relay information about the contractions and expansions—even the most microscopic of movements-- *inside* the body. Vision thus begins with an *externally* produced sensation, whereas kinesthesia starts as an *internal* sensation. But at the level of sensation, both vision and kinesthesia are unconscious, mechanical bodily processes.

Although she points out regretfully that kinesthesia is usually missing from the standard list of the senses, (2011a, 389) Sheets-Johnstone goes on to explicitly deny that kinesthesia can possibly be a sensation.

> The distinction between sensation and perception commonly if implicitly rests on a distinction between inner and outer: whatever the modality of objects sensed "out there" in the world, we have perceptions of them; whatever the modality of objects sensed in our bodies, we have sensations of them. The sensation /perception distinction, however, does not hold when it comes to self-movement. *Self-movement is not sensational* like pains, itches, a scratchy throat, and so on. Sensations are not dynamic events but *punctual* ones having no inherent connection or flow. Movement is in contrast an unfolding dynamic event and, as such, demands close analysis and elucidation in its own right. … we feel the qualitative dynamics of our movement. (2010, 116) (Italics added.)

Sheets-Johnstone argues that kinesthesia could not be a sensation on the ground that the receptor cells involved are located *internally* and its sensed objects are not "out there." This could be taken as simply a decision about classification, but Sheets-Johnstone's classificatory system is mistaken in a far more serious way, a way that affects her thinking about the "congruence" involved in expression.

Her claim that sensation is "punctual" is one she has re-iterated in other writings: Sensations, she believes, are spatially pointillist and temporally punctual—an itch, a jolt,

a flash of light, a shove, and so on. (2011a, 395) (See, also, 2006, 2010, 2011) Kinesthetic experience, she says, is entirely distinguishable for it "is not a matter of sensations, but a matter precisely of dynamics." (2011a, 395) Kinesthesia is utterly different from sensation, she argues, because it involves movement over both time and space and so is not like the visual sensation of a flash of light or an instantaneous jolt.

But we have already demonstrated in great detail that vision is neither punctual nor pointillist even when it is of a flash of light. Vision occurs because trillions of points of light are *scanned* by the visual sensory apparatus in a process that involves perpetual *movement*. Vision is never instantaneous; even a flash of light takes a very long time in the way time is measured neuronally. A jolt, an itch, a shove, likewise occur over time and cover considerable distance in neural bodily space.

Sheets-Johnstone, it seems, cannot conceive of kinesthesia as a sensation because she does not conceive of sensory receptors as structured to serve as detectors of *movement*, as "dynamic." Yet, the receptor cells embedded in the muscles are precisely that, motion sensors that respond bi-modally in order to signal contractions and expansions of muscles. The result of this physiological fact is that self-movement *is* an object of sensation: What is sensed is fluid, dynamic, a spatio-temporal integral. While the sensation of a single contraction of a single cell of muscle tissue—the ultimate datum of kinesthetic sensation—may not amount to much, it is the accumulation of many multiple expansions and contractions throughout the body that reach consciousness as a distinct felt perception.

Sheets-Johnstone appreciates the significance of the critical connection between kinesthesia as perception—the "feel" of movement—and the whole-body perception we recognize as a distinct emotion. However, she wishes to avoid the notion that the whole-body perceptual—felt-- outcome has a mechanical, atomistic, underpinning (2011a), a notion she fears would reduce the range of human feeling to behavioristic mechanism. The descriptive program of phenomenology is trained upon the way that movement *feels*, and, certainly, it feels like what we ordinarily refer to as emotion. There is, nonetheless, a neural *underpinning* to what is felt and that underpinning is a vast set of receptor cells embedded in the muscles that signal what is happening in them. I believe

that understanding the neural underpinnings of felt emotion is essential to philosophical aesthetics because it allows us to sort out the various arts according to the ways they induce kinesthesia, thus enabling an understanding of the different ways expression occurs in the various arts. For our purposes here, neuroscience enables an understanding of landscape as a form of expressive art. It is because of a mistake about the nature of kinesthesia that the symbol theory of expression seems to require a phrase like "forms of feeling," a phrase we have seen does not make any sense.

Undoubtedly some of the problem in forming an adequate notion of kinesthesia is that the same name is used for both a sensation and a perception. The start of a kinesthetic perception, a *felt* happening, is the *sensation* which is also called kinesthesia; the sensation, like any other sensation, begins with sensory receptors, spindle cells that signal events by contracting or expanding. These tiny movements of single cells within the muscles are not consciously known to us and, in fact, can occur in non-conscious life forms such as plants. Movement becomes *known* internally when it becomes conscious to a self, when it becomes a *perception*. At that point movement is felt; it is, as Damasio (1999) puts it, "The Feeling of What Happens."

Acknowledging neuroscience's theoretical models of consciousness would not have the effect of reducing art to science as some philosophers fear it might. Rather, it would import all the evidence of recent neuroscientific investigations of consciousness into philosophical discussion to support and validate the descriptions of felt movement that phenomenology, for example, is dedicated to languaging.

Most important for this dissertation, acknowledging the material nature of kinesthesia and how it comes about can resolve the very significant confusion in the notion of expressive congruence. Once kinesthesia is fully understood, it is clear that the congruence that makes expression possible is the congruence of two kinesthetic patterns, patterns of muscle tensions as reported by receptor cells whose function is the *sensation of internal movements*, which sensation reaches consciousness as felt perception.

As bodily movement is at the center of the art of landscape, it is important to further clarify one more aspect of how it is described.

## Space and Time in the Perception of Movement and Dance

There is no question that Newtonian science must pointillize space and punctualize time for the purposes of the equations it employs to describe movement. Phenomenology is concerned that such tendencies not play out in the rendering of a description of movement as humanly perceived.

Sheets-Johnstone (1966) describes dance as a humanly lived experience—a "*continuously* emerging form which appears before us, thoroughly engrossed in its unfolding…. What is written down as notation in dance is a guide to the future appearance of a dance, an appearance which is not, until the dance is re-created." (4-5) A dance is "a unique *dynamic* form, a complete and *unified* phenomenon, thoroughly cohesive and continuous."(6) (Italics added.)

If "virtual force" is the universal essence of all dance and of the bodily movement of which dance is formed, time and space, Sheets-Johnstone insists, must be implicated in any description of dance and of movement generally. Sheets-Johnstone describes both the dancer and the spectator as experiencing time and space as *ek-static* and *diasporatic.* Dance movement reveals time as a continuous unity of past-present-future, not as a series of fixed moments in need of integration. The past, present and future are "both a multiple unity and a unified multiplicity."(1966,18) They form an organic, internally related whole. Temporality is also "diasporatic," a single structure whose meaning derives from the interrelationship of its parts.

> The dance, as it is formed and performed, is experienced by the dancer as a perpetually moving form, a unity of succession, whose moments cannot be measured; its past has been created, its present is being created, its future awaits creation. Yet it is not an externally related series of pasts, presents, futures—befores, nows, and afters; it is truly *ekstatic*, it is in flight, it is in the process of becoming the dance which it is, yet is never the dance at any moment. The dance at any moment is *diasporatic,* a perpetually moving form whose "moments" are all of a piece. (22-23)

Nor is space a series of discrete, static points. Space, Sheets-Johnstone tells us, is experientially also an *ek-static*, a moving, structure of experience. The body is a totality,

rather than a static series of spatial moments; it is a continuous and unified "being hereness." (23) The continuity of the body-schema is what makes it possible to grasp our gestures and movements as continuous and unified, as *Gestalten*.

As *diasporatic* and *ekstatic* structures, space and time constitute the conscious body's sense of movement. Space-time is experienced as a unified whole; a gesture is a unified projected arc:

> (P)articular spatial units characterize the total movement as being this particular movement and none other…(the) movement is uniquely meaningful because each unit within the arc is internally related to all other units: each spatial point, each unit of 'being here' and 'being here' is unified by the bodily schema, and it is this unification which makes the intentional act a meaningful gesture, a multiple unity. (26)

Thus, the notions of bodily movement as ekstatic and diasporatic are introduced as means of *integrating* what might otherwise be taken to be a spatial experience constituted of discrete points and a temporal experience made up of distinct instants.

Points of space and instants of time are the constructs of Cartesian geometry and Newtonian physics, but are never objects of experience. It was Newton himself, in fact, who developed the calculus precisely to account for the *non-discrete*, *continuous,* phenomenon of movement in both space and time, and for the unique shapes of the continuous arcs described by movement. Cartesian coordinates may represent both time and space as discrete, countable instants and points, but the calculus function of *integration*, is designed to account for instantaneous changes of distance with changes of time, that is, to represent both time and space as *continuities.* The characterization of movement as "ekstatic" and "diasporatic" does not add to the notion of movement as continuous and uniquely shaped that is already part of the way science and mathematics represent it.

Sheets-Johnstone wishes to avoid the "pointillism" and "punctualism" she fears might infect kinesthesia, only because her concept of kinesthesia does not recognize it as initially a sensation of movement, movement directly experienced as a single integrated whole. The initial unconscious sensation is not of pointillist space or of punctual time

but of movement itself: muscular expansion and contraction. Kinesthesia is the sensation of the fluid, integrated curving and continuous flexing of moving muscles. *Kinesthesia does for lived movement what the integral does for time and space, and for scientifically represented movement: It represents movement in felt perception as a single, integrated whole.*

One might say that kinesthesia serves as the "integrator" of the points or instants whose discreteness so troubles Sheets-Johnstone because kinesthesia reduces distance traveled over time to a *single* felt perception. The Gestalt, or shape, of a particular felt movement is itself a particular feeling, both for the one whose body moves and for the spectator whose innate processing transposes the visual to the kinesthetic. Understanding kinesthesia precisely as the *sensation of movement* allows us to describe both kinetic, external, visible movement as continuous and the internal movement of flexed muscles as continuous fluid feeling.

To the dancer who is moving and creating a visible trace, her own movement is a directly *kinesthetic* experience, a pattern of muscle tensions felt as a single, irreducible quality or "feel." The spectator's experience is, unsurprisingly, a bit more complicated. Insofar as the spectator sees the performance space organized and, in effect, "created" by the dancer's movement, he is aware of a spatio-temporal image, a dynamic image that changes over time as it moves through and animates space. Insofar as this image is experienced as expressive, however, it is experienced *kinesthetically* and thus as a single, unanalyzable feeling.

I turn now to a consideration of the experience of landscape, of what the walker can be said to experience as he performs the choreographic score created by the landscape artist. In the next section, the discussion will aim at determining whether, and to what extent, the experience of the walker—the way he perceives his self-movement through the structured landscape—resembles the way the dancer perceives her own dance movement.

## The Walker's Experience of Movement Through The Landscape

Landscape, like dance, is a lived experience. Landscape notation is what notation is in dance, a "score" or guide to performance of the work. In landscape art, the site plan or other model, a static representation intended to suggest the forms of movement intended by the artist, is plainly distinguishable from the work itself. As in the case of dance, the perceptual differences between the notated landscape choreography and its performance are, in fact, so vast that it is usually difficult to judge from the choreographic score what the experience of its performance will be.

In landscape, as in dance, the performer/walker is immersed in the feeling of his own bodily movement; should he stop to reflect on each of his muscle groups and the impact of the landscape's choreography on his body and its parts, the experience of a continuous, dynamically-shaped play of forces vanishes and the work becomes what the dance becomes in such a situation, a static external object. The fact that the choreography itself, the shaped earth with its planted objects, paths and surfaces, remains static and available to *vision*, does not alter the fact that the essential nature of landscape art, the experience of movement through it, arises from the walker's own bodily movement.

Although, as in the case of dance, the walker's movement may include pauses and "holds," or what the dance choreographer terms "poses," a landscape experience is an organic and continuous whole. Like dance, landscape art is a kinetic/kinesthetic phenomenon that is experienced by the walker as a single, unanalyzable *gesture,* an expressively shaped movement that must be considered as an entirety.

The immediate kinesthetic perception of self-movement that is the walker's experience is of a sequence of felt muscular tensions, a fluid, integrated felt quality. In landscape art, as in dance, the particular shapes, rhythms and kinds of muscular exertion the artist builds into the structural plan of bodily movement will determine the felt quality of each individual work. The designer or the critic of either dance or landscape may choose to analyze either sort of work into its components, but the work itself is a single perceptual whole. The *elements* of both dances and landscapes can never exist

meaningfully in isolation from one another. It is therefore important to distinguish outdoor spaces organized for various activities such as sports or the viewing of outdoor sculptures from landscape art; such spaces are structured primarily to accommodate the uses to which they will be put; they are not composed as unified experiences.

Even as a visual experience, a given landscape is a single, integrated whole, a wholeness that is *felt* as much as, or even more than, it is seen. Edward Casey (2002) invokes this felt sense of unity in accounting for the sense of a "region:" "(I)n the practice of landscape painting region is a nonsubsumable domain in which natural presences, things and people and places, *coinhere*." (2002, 74) (Italics added) Or, again, "(A) region is the *coherent clustering* of places within the openness of landscape…." (74) (Italics added) I would suggest that what actually creates the sense of *coherence* among the many elements of a seen region, what creates the sense of place within some particular space—what creates the sense of a region-- is, in large measure, the congruence or coherence of many felt qualities—some seen, some not—based in specific kinesthetic patterns. Elements which, in their kinesthetic perceptions, share particular kinesthetic patterns can be said to be "congruent with one another" and so, as a group, they seem to "go together" or belong to the same place or to define a particular region.

Some of the linear and areal quality of a dance derives from the line and areal design of the dancer's own body; the human form and the shapes of the movements it can perform determine in large measure the compositional possibilities of dance. To the dance spectator, the dancer's body is a central visual element, the center from which force is projected, and thus the center of the form-in-the-making that is the dance. To the walker who is *both performer and audience* for the landscape work, however, there is no analogous visual component that includes the shape of his own body or the shape of the movement his walking delineates. The walker's own body is simply the center or focus of the felt quality of his own movement.

The walker is not a spatial form in his own experience of his walk, and so the area of his own body does not enter into his experience as areal. Nor need the path of his walk enter his experience as a specifically shaped line, nor does the area circumscribed

by his path become part of his perceptual experience. His experience of the path is simply of smoothness, roughness, straightness, curvedness, etc. as those qualities of the path are directly felt in the musculature of his feet, legs, hips and torso. The walker's sense of his weight in opposition to gravity, his sense of the effort needed to climb or descend a sloped path, his sense of balance or imbalance are direct kinesthetic perceptions which the landscape artist structures into a single, organic experience.

The walker is in the unique position in the arts of being both performer and audience/recipient of the expressive work; we must therefore compare his experience not only to the internal experience of the dancer, but to the external experience of the dance spectator as well. The experience of the spectator at a dance performance, I have pointed out in the previous chapter, is *mediated*; what is ultimately perceived by the spectator depends upon transposing a visual experience into a kinesthetic one. As will become clearer in the following chapter, the process of transposition inevitably weakens the felt kinesthetic experience and so the dance spectator usually experiences a weakened form of the feeling being expressed by the dancer. In landscape, on the other hand, an attentive walker who adheres to the performance plan of the work, is more likely to feel strongly what the landscape artist intended. His kinesthetic response is direct: It is kinesthesia produced by his own body's muscles as they tense and flex in the course of his own movement, unmediated by vision.

Given the directness with which landscape creates kinesthesia in its walker/recipient, it should come as surprising that dance often seems so much more affecting than walks through gardens. One reason for this is that dance can employ a narrative structure; dances, like *Coppelia,* or *Swan Lake* tell stories which are themselves affecting. Another, perhaps more significant, reason is that the dancer is able to move in so many more ways, utilizing so many more degrees of movement of her limbs, torso and neck: leaping, spinning, jumping, tumbling, stretching and contracting in every imaginable direction. Also, the dancer often dramatically *exaggerates* the ways the human body is expanded and contracted in ordinary felt responses so that an ordinary bodily response appears in dance with an intensity far beyond its ordinary expression. Thus, for example, in Martha Graham's *Lamentation,* the dancer's body

forms are recognizable as forms of grief, but the contractions of the torso and the extensions of the limbs are extreme as compared with an ordinary response to actual grief.

The landscape artist, however, can only choreograph within the constraints of those movements that take the walker through the landscape; the range of expressive movement available to the landscape artist is thus severely limited, and the movements he choreographs must be executed on the modest scale of ordinary walking. The walker, unlike Graham's dancer, will not be made to contract his abdominal muscles deeply or extend and lift his arms as he might in an actual cry of despair. On balance, then, although landscape art is more directly, more immediately, received than dance, dance is ultimately more affecting.

A dance vanishes when the dancer is done and leaves the stage. It leaves no trace; such is its "temporal" or temporary nature. Landscape, it may be thought, *does* leave a trace; its trace is evident, one might think, in the paths and objects that are represented in its site plan. The built work derived from the site plan, of course, does endure and can be enjoyed by generations if it is carefully maintained. This "trace" not only endures, but precedes the walker's performance; the expressive work of landscape—the art object—however, does *not.* For the visible site plan as well as the built work that it represents are *not* the expressive work of art. The expressive work is what is experienced kinesthetically by the walker, his own deliberately shaped bodily movements. The site plan and the built work indicate diagrammatically what kinesthetic experiences might be possible. Paradoxically, this gives the landscape work of art a highly durable and reliable character for, while visual forms—the site plan and the built object—may receive various interpretations over time and by various cultural groups, the directly-induced kinesthetic perceptions that arise in the experience of a landscape as it is walked hold fairly constant. That is because they are innate, reflexive responses to the expansion and contraction of muscle groups in the human body.[17]

[17] The question of whether patterns of muscle tensions are felt differently in different cultures is an open one, as is the question of whether men and women differ in the ways their muscles are activated by a particular stimulus. Recent research on this matter will be discussed in the next chapter.

Although dance choreographers attempt to preserve their work using notation systems and videotaped records of performances, interpretations of dance notation notoriously vary from dancer to dancer, and from performance to performance. The dance can, of course, exist without any notation whatever as the free flow of the dancer's own body movements; notation of what she has created comes into being afterwards and perhaps not at all. In dance, notation is merely a tool for perpetuating it in later performances. A landscape, however, is *intended* to have repeated performances. Its notation is created at the beginning of the choreographic activity, not at the end. The built landscape and the site plan on which it is based are so determinative of the landscape's choreographic structure that no expressive movement can occur without them.

It was argued above that neither time nor space are central in the perception of dance, either as it is experienced by the dancer or as it is ultimately experienced by the spectator. What each experiences as expressive of feeling is kinesthesia, the source of all feeling. To the walker in a landscape, neither time nor space is significant to the expressive activity. He experiences his own body movement directly as a single, qualitatively unique, unanalyzable flow of feeling. It is in this respect that the walker's experience of a landscape most closely resembles the dancer's experience of a dance.

## The Roles of Visual Images In Dance and In Landscape

In Chapter Three I discussed the various visual aspects of the landscape experience: ornamental perceptual objects within the landscape that are sculptural, architectural and painting-like, many of which serve as attractions that influence the movement of the walker. But, as I have defined the art of landscape, it is essentially an art of movement, a kinesthetic experience. In attempting to determine the extent to which the walker's experience in the landscape resembles the experience of the performing dancer, however, it is necessary to consider a different sort of visual element

in the landscape experience: the *image* the walker may or may not form of the walk he is embarked upon, an image of his own bodily movement.

As bodily movement has a double nature, it is both something internally felt—kinesthesia—and also something kinetic, a spatio-temporal *visual* form that is external, public. The dancer herself necessarily experiences all her movement kinesthetically; she may also experience many of her movements as the audience spectator does, by observing her limbs in motion. Of course, when she extends a limb behind her or turns her head away from a moving limb—as when she waves her hands while bending backward—she can not see what the audience spectator can see. But, as one who is herself a dancer and choreographer, Sheets-Johnstone relates that the dancer "sees" her own movement—all of it-- virtually, as an *image*. How does the dancer's image of her bodily movement function in her experience of her dance? To what extent does the landscape experience implicate a walker's image of his walk?

For the audience spectator at a dance performance, the spatio-temporal image of the dancer's bodily movement is the *mediating* source of what he feels: The spectator's feeling is kinesthetic in origin, but his kinesthetic patterns themselves result from some sort of mirroring or modeling of what is seen, the *image* of the dancer's moving body. Does the dancer rely upon an image of her own bodily movement in creating the public kinetic shape the spectator sees?

Sheets-Johnstone claimed that the dancer's experience and that of her audience are identical. (1969, 113) The dancer dancing imagines areal and linear forms that her audience will rely upon for their own kinesthetic, felt, experience. A visual-kinetic form may appear to the dancer as a linear design of her own body, a linear pattern which her movement traces, an areal design of her three-dimensional shape, or as an areal pattern of the space created by her movement. (1969, 120) In being aware, as she moves, of the image of her movements, the dancer is aware as well of the space her movements create and utilize, and of the time that elapses as she executes those movements. Her internal, kinesthetic, experience, on the other hand, implicates neither time nor space but, rather, presents them as integral aspects of the single felt quality of movement. Thus, a quasi-visual—imagined—image is part of the dancer's experience of her dance.

Even as she is engaged in attending to the spatio-temporal aspects of the visual-kinetic form, the dancer relies, as well, upon *kinesthetic* feedback to guide her movement from one instant to the next. The dancer consults, as she dances, the feel of her unified body experience to assure herself that she is doing what she intends, creating the visual trace for her audience that she means to create. (116) The dancer, moving in a circle, for example, relies upon this quasi-visual phenomenon as a *guide* in describing a circle with her movement. The dancer does not see and then utilize an actual circle to guide her path, but uses *kinesthetic* cues to assist her in completing a circular movement. Sheets-Johnstone suggests, as an illustration of how this comes about, the exercise of tracing a circle with one's fingers while keeping one's eyes closed. The kinesthetic memory of where one started—the "feel" in the whole hand and in the finger that is moving—serves as a guide so that we know where to stop circling our finger. The dancer, she says, relies upon the same sort of *kinesthetic memory* in describing a circle in a performance of a dance; she relies on knowledge of her body schema, knowledge that she has accumulated by sensitive and careful attention to her past experiences.

For what purpose, then, does the dancer require, in addition, a *visual* image of her own bodily movement? The imagined visual form is, like kinesthetic feedback, a guide, a way the dancer can know that the audience spectator sees what she understands he must see if her attempt at expression is to succeed. However, a dancer merely dancing for herself, Sheets-Johnstone points out, without concern for how her bodily movement appears to a spectator, may also employ a visual image to guide her movements.

> (I)n the course of improvising, I may have a particular kinetic image…At the same time as I am moving, I may have an image of a leg extension, for instance, or a *fleeting* image of a particular movement quality—perhaps a strong and abrupt upward movement of my arm….I am not impeded in any way, brought to a standstill by the *passing* image ….On the contrary, I might indeed extend my leg or thrust my arm upward….The image … is a kinetic form within a form, a motional thought that *momentarily* intrudes itself into, or superimposes itself upon, the ongoing process ....Thoughts of movement are experienced as *discrete* events…Within the context of improvisational dance, such thoughts arise autonomously. (2011 a, 423)

In the absence of an audience, when the dancer is dancing for herself or improvising—not following any pre-set choreography—concern for what another might see is absent. But she is still in possession of what Merleau-Ponty (1945, 2002, 113-115) refers to as a "body image," a notion, he points out, that evolved from being understood as "a continual translation into visual language of the kinesthetic and articular impressions of the moment," to eventually being thought to signify a totality of body form, a Gestalt in which the body's spatiality is a felt spatiality, a "spatiality of situation." In her awareness as she dances of her own "body image" the dancer has a perception that is thus a unified visual-kinesthetic perception, a moment in which her body is known as both the "inside" and the "outside" phenomenon it is and in which her movement is, likewise, known simultaneously as inside/outside (as those terms are defined in the opening section of this chapter.) The dancer's perception of her body schema in a dance performed for herself alone is, says Sheets-Johnstone, fleeting, momentary, an isolated suggestion of something she might do with her body.

The presence of an audience spectator for whom the dance is performed thus makes a difference in the way the dancer experiences her dance, and the image of how the dancer's own body is seen by the spectator *is* that difference. The dancer, wanting and trying to *move* the spectator, relies for guidance not only on her internal kinesthetic sense of what is the right thing to do, the right way to move, but also on a visual image which, as another guiding tool, extrinsic to the dance, cues her as to her movement's "rightness."

Does the walker, too, need to utilize a visual-kinetic image to ensure that the expressive intent in his walk succeeds? The imagery surrounding the walker is actual, not a product of his own imagination, and its "movement" is perceived as a function of his own movement, in the familiar way the voluminal surround normally appears to move with one's own movement. The course the walker follows through the landscape has a visual shape as any seen situation does. The *walked* shape of his experience, however, is a *felt* shape, a "kinesthetic shape." This can be experienced as accurately by a blind person or by the walker with his eyes closed. As Goethe's famous quote about a

well-designed space informs us, the experience of movement *qua* movement is the same for the seeing as it is for the blind. It is a purely *kinesthetic* experience that does not depend for its felt qualities upon what is seen.

How does the walker grasp "kinesthetic shape?" The walked circle—the kinesthetic one-- includes a sense of "tilting inward" on one side of the body as the muscles there contract, coupled with the feeling of muscle expansion along the opposite side of the body. The walker may also perceive a "tilt"—muscle contractions-- along the edges of the soles of his feet. He may feel contraction in his torso as his body works to counteract centripetal force, along with tension in the muscles along the undersides of his arms as he makes an effort to maintain his balance. All these various muscle responses are unified into a single kinesthetic Gestalt as the feeling of a body traveling along the circumference of a circle because they furnish kinesthetic cues that the walker may have learned to associate with the visual image of a circle. It bears noting, however, that it is impossible to consider this whole-body feeling-- of muscle contractions and stretching-- as in any way "congruent" with the *visual* image of a circle. A walker who has often enough walked a circular path will, even blindfolded, be able to identify the kinesthetic shape of the walk as circular.

When the walker follows a circular path, does he necessarily form a visual image of a circle like the one the dancer "images" as she dances a circle? A landscape is seldom experienced blind. Normally, the walker has no need of an *imagined* circle because the path he follows in a built landscape presents itself as something *actually* there, something to be seen. It may be a path worn through the grass or a precisely measured paved path, but it is, for the walker, what Sheets-Johnstone says the image is for the dancer, a tool, a guide to help shape his movement. What appears on the site plan for a landscape, and what is subsequently built into it are not intrinsic to the landscape experience; what appears "on the ground" is merely the plan or score for the movement that constitutes the experience. The walker's experience of walking a circle, then, is normally complete as a kinesthetic experience; whatever visual cues are needed are normally supplied in the landscape itself. It would seem, then, that an internal, imagined, visual guide is unnecessary to the walker's experience of the landscape.

When the dancer is dancing she *envisions* her body and its movements, certainly as the felt Gestalt of a unified visual-kinesthetic body image, but also in a visual, externalized image *as the spectator would see it* because her dance is *directed at* the spectator; the spectator's kinesthetic experience must be taken into account by the dancer as she dances. The dancer's movements are *deliberately aimed at others*, her audience; as she moves, she imagines as one and the same intuition the way her movement looks to a remote audience. The dancer, unlike the landscape walker, is *consciously and deliberately expressive*. She either choreographs the moves that make up her dance or she is aware of the intent of the choreographer and is committed to carrying through that intent. She deliberately positions and moves her body so that the feel of a fluid sequence of muscle tensions, correlates of actual feeling, are felt by both her and, less intensely, her audience. The image that will convey feeling to the audience spectator is, one might say, the way the dancer proposes that intent to herself.

The walker, on the other hand, performs the choreographed work but does so *passively*; usually he is unaware of the choreographer's expressive intent until he has experienced it. Certainly he does not choose the feeling to be expressed by the work. This is the result of the walker's odd position as *both* performer and audience. The walker must *perform* the choreography in order to be its *audience*. This peculiar situation is unique among the arts. The fact that the recipient's own body is moved by the choreographer/landscape artist is what makes the kinesthetic impact of the work "direct;" it is also what makes the work available only to one who actually performs it. But it is this odd fact about landscape art that allows the walker virtually no input into the expressive work as it is ultimately experienced by the audience—the walker himself.

Unlike other performers —as, for example, a musician playing a work he did not compose—the walker is not expected to add expressive content of his own to what the landscape artist has rendered. The walker, unlike the dancer, is a *passive* recipient of the work whose choreography he performs. The walker's body and its movements are shaped by the landscape artist's intentions, not by the walker's; his visual experiences of the objects in the landscape and his path through it, if there is one, are, likewise, not his

to select except to the extent that he may prefer to turn his gaze in one direction rather than another and see one view the artist has created for him rather than another.

If a dancer were to obediently—passively-- follow the directions of her choreographer without "making them her own," the dancer's experience might more closely parallel that of the walker in the landscape, but then, of course, the dance would lack expression for the audience; it would appear wooden and lifeless.

It is the unique position of the walker as a performer, but a performer with no intent to express a chosen feeling to an external audience, that renders a visual image of no consequence to him. In this regard, then, the walker's experience differs significantly from that of the dancer.

## Improvisation In Dance and In Landscape

The performer of landscape choreography is, of course, a free agent who may veer off course, or wander aimlessly on a frolic of his own, creating thereby, his own improvised "choreography." The landscape artist himself may build such possibilities into his work, creating what Halprin (1969) called an "open" score. The landscape artist can then employ various visual devices to lure the walker back into the structured plan, or to induce various desired bodily postures while the walker is still off on his frolic.

The free wandering landscape walker finds a dance analog in dance improvisation. A walker striking out on his own is at play. (See, Crease.) Like the dance improviser who follows no score by which her movements might ever be reproduced, (Sheets-Johnstone, 2011 a, 420) the wanderer creates his own never-to-be-repeated choreography by, as Sheets-Johnstone puts it, "thinking in movement," instinctively choosing patterns of kinesthesia that "seem right" within the unfolding of past-present-future of his own movement.

If the description of the landscape walker as thoroughly passive suggests a puppet on a string, it should be borne in mind that most formed landscapes permit the walker to wander; in so doing, the walker creates a kinesthetic experience of his own

amble. A free-form stroll that is attended to as a kinesthetic experience can, in fact, be the walker's own work of art. The walker in such a case need not rely on an image of his bodily movement because he walks to enjoy his own body's movement internally.

A dancer, too, may choose to improvise a dance purely for her own pleasure. In such a case, the feelings she experiences arise simply from her body's own movements, from the shapes they take and the rhythms and speeds with which they are executed. In such a case, she need not utilize a visual image, something created for the sake of an audience. However, should the dancer, though alone, choose to express a specific feeling, for the purpose of directing that feeling *outward*, i.e., *ex*-pressing it, she may imagine an audience and the way her dance will look to them. Her dance, as an ex-pressive act, would then involve consideration of how her bodily movement reveals itself as a visual-kinetic form.

Dancing a waltz creates one kind of feeling in the dancer, dancing a tango has a very different "feel" to it. The rhythms and controlled movements of a Highland Fling create a distinct feeling, while the rhythmic movements of the Maasai *adumu* or the West African *yabara* are felt very differently. A couple performing a tango *for an audience* conveys feelings of languor and sexual arousal; but the dancers themselves also enjoy the feeling of their own movement, its languor and its smoldering sexual affect. In the same way, a walker moving through a choreographed landscape is overtaken by the feelings of his own body movements.

Robert Crease (2002) considers the nature of the dancer's affect in the experience of popular dance. In a dance club, the dancers are, to some extent, dancing for themselves, for the pleasure derived from their own bodily movements. (108) To dance "for oneself" in this sense involves a loss of consciousness of space and time, an absence of any visual image of what one is doing, or of how one looks to another. The dancer in such a situation enjoys the kinesthetic responses of his own body to the music and to the ambience created by surrounding dancers.

But bodily movement, as has been suggested here and will be more elaborately demonstrated in the next chapter, is *contagious*. Far from being a metaphor, this contagion is experimentally grounded in neuroscience: Human bodily movement seen

by another human is modeled or mirrored by that second human in ways that reproduce, albeit more faintly, the feeling generated by the initial mover's movement.
It follows that even when I dance only for my own bodily pleasure, I communicate my own feelings to others who happen to be watching me, whether or not I intend that result. That is, I "move" those around me to join in my dance. Such is the infectious nature of the dance club, a characteristic that draws to it people in search of the pleasures of dance who may find it difficult to let go enough to improvise dance in isolation.

Of course, as Nietzsche has famously argued, music is a fundamental social integrator, the source of that loss of self-consciousness that allows individuals to lose restraint and the boundaries that separate them, allowing them feel a sense of oneness, a feeling that makes social bonding possible. In a public dance space, then, it is both the music and the observed dance movement of others that draws an individual into the social group.

As Crease argues, this destruction of isolating restraints ultimately serves an ethical end by allowing the individual to understand in a fundamental—body-based—way his oneness with his fellow man. (117-119) Importantly, social dancing presents the social bond not as a sacrifice of personal interests for the sake of others, but as something intrinsically pleasurable and, so, desirable. Being with and for others is fun.

The dancer who is "dancing for his own pleasure," therefore, inadvertently draws others to him because others who watch him will automatically produce movements congruent to his. This congruence is helped by the dance music for, as Clynes' research (1975) demonstrated, kinesthetic patterns may be congruent over a variety of modalities: a heard musical line or musical rhythm has cognates—patterns that are congruent as to shape, tension, duration, etc.—in all the other sensory systems, including the kinesthetic. Sheets-Johnstone acknowledges this synesthesia—and actually employs the notion of mirroring—when she advocates using vocalization as a means of tracing the dynamic line of dance movement:

> A dynamic line may be vocalized first and movement subsequently created which mirrors the line, or movement may be created first an the line reflecting the movement subsequently vocalized. It is thoroughly

> possible that the line be inwardly heard simultaneously as the movement is created, or that as one vocalizes a line, he envisions *movement which embodies that line*. The important point, in fact, is that the vocalization and the movement are ultimately executed and apprehended together*; phenomenologically, they constitute one and the same projection and intuition.* (1966, 91)(Italics added.)

It is only possible to "envision movement which embodies" a vocalized line because visual shape is transposable into a kinesthetic "Gestalt," that is, because the "feel" of a movement's shape can be correlated kinesthetically with a pattern of contractions in the musculature of the respiratory system. If that pattern of muscle response and the danced dynamic shape "constitute one and the same… intuition," it is because they are *kinesthetically* congruent. (It should be recalled, in this regard, that Wolfflin (9) singled out the respiratory system as the most kinesthetically responsive: The muscles of the throat, trachea and ribcage are the most highly susceptible to feelings generated by sympathetic modeling.) If the dancer's movement can be vocalized, it is because of kinesthetic congruence of the pattern of muscular tensions produced in vocalization with the pattern of movement involved.

In a dance hall filled with people modeling or mirroring the same musical line, most will eventually move in similar ways; when they are also mirroring the same dancer's movements, their movements become more similar still. With similar movement comes similar kinesthetic perceptions, that is, similar feelings. In the dance hall, then, dancers approach experiencing a single felt quality, a shared felt experience, with all the social outcomes that entails.

## Abstraction In Dance and In Landscape

In the traditional—symbolist—theory of expression, neither the artist nor the receiver of the work of art is thought to experience an actual human feeling. The artist who chooses to convey a particular feeling, according to this view, is like a painter washing his canvas with a deep blue wash to convey melancholia while all the while

merrily joking with a visitor to his studio. The dancer, like the painter, simply utilizes the tools of her art, selecting forms of movement that convey the feeling she has elected to put across. The spectator, according to this theory, understands the symbolic image of the dance movement but does not actually feel anything either. The dancer makes a symbol and a symbol is what the spectator receives: an intellectually intuited form.

But, *unlike* the painter who may be partying while applying a blue wash to his canvas, the dancer creates her expressive movement by the use of *her own body*. In so doing, she *moves* her body, tenses her muscles, and thereby induces *in herself* a kinesthetic experience that *is* feeling. The dancer who moves thus *feels her own movement,* while the painter who washes his canvas with deep blue pigment may continue joking with his visitors and feeling no melancholia at all. The acts by which art is created are, in each case, very different. Although the painter may not feel what he expresses in his painting at the time he paints it, this sort of detachment is not possible for the dancer. By virtue of her bodily movement, she must feel something. The landscape walker is similarly engaged and cannot avoid feeling what his bodily movement produces.

It is true, however, that neither the dancer nor her audience experience the emotions of ordinary life situations. What they each experience is an attenuated "feel" of such emotions. It is, in fact, such "feeling" that all art conveys, not cool, intellectual "symbols" of lived emotions, but the actual bodily—kinesthetic—"feel" of them.[18]

Langer claims that the symbol conveys feeling from the dancer's body to the spectator because human imagination is able to "read" the symbol of the dancer's body's form *as* a familiar feeling. This form is non-material, something not of the world in which actual feelings occur. The dancer's body moves in ways that embody "forms" that a higher consciousness can grasp. This can occur because the dancer is able to "abstract" a bodily movement from its ordinary context in which it is a response to a lived situation.

Recent neuroscience confirms that "abstraction" of the "feel" of a situation is indeed possible, and suggests that such abstraction is key to the creation of any work of

[18] Precisely why it makes sense to speak of the "feeling" of an emotion will be discussed in the next chapter when the distinction between the two affective phenomena is treated in greater detail.

art. To create a unified fluid sequence of feeling, the choreographer must be able to manipulate forms, shifting them about freely and for the sake of the artwork. Abstraction allows for a feeling to be *detached* from its ordinary context so that the artist can treat it as *plastic*, picking up one form and connecting it in a continuous, fluid way with others not ordinarily connected with it in daily life. A feeling that is thus detached from its usual context and set in an *extra*ordinary context prevents a dance from turning into a set of "acted out" bits of miming, a story constructed as a string of gestures.

It is, however, entirely possible to render an account of how a dance is made without resorting to the notion of a symbol, a virtual or illusory "form of feeling." In ordinary experience, we move our bodies through the events of our day, tensing muscles throughout the body and thus experiencing an enormous number of combinations and permutations—patterns-- of tension. Each pattern gives rise to a feeling, some more familiar than others; as responses to particular contexts, some of these patterns are experienced as familiar feelings that we customarily call "emotions." As we have seen in the second chapter, even the visual experience of depth or scanning has its unique "feel," the feel of immersive voluminosity.

As will be explained in the next chapter, it is possible to elicit the "feeling" of a particular situation—to create muscle tensions in particular patterns-- without actually placing the subject in that situation. It is possible, that is, to create in both the dancer's and the spectator's bodies, the patterns of muscle tensions that *correlate* with the specific feeling of what is ordinarily considered an emotion, say, *love*. In any art form, it is the "feel" of the emotion, not the emotion itself, which the artist wants to convey. The "feel," however, is a direct function of bodily tensions.

With the distinction between a feeling and an emotion roughly delineated, let us reconsider whether it is true that neither the dancer herself nor the audience feels, for example, any of the love emotion symbolized by a dance movement because "there is no love to feel." (Sheets-Johnstone, 1969,71) *All* perceptions have their unique, distinctive qualitative "feels;" every perception has its own felt sense. Anything seen in depth, as noted in Chapter Two, has a felt quality due to the perception of movement that is the way depth perception occurs. Every color, texture, shape, vector—either in context or

abstracted from context—ultimately produces a kinesthetic response, thereby becoming something that is felt.

In order to become plastic-- and thereby usable by the dancer--a feeling experienced in ordinary lived movement must be abstracted—detached—from its usual symptomatic context, but this process of detachment does not strip the movement of its felt qualities. In fact, the ability of a de-contextualized movement to carry its felt quality along with it is precisely what makes it possible for it to function expressively. The fact that a feeling can be abstracted from its daily context and continue to retain its felt quality allows it to be preserved for free and plastic employment in the creation of a work of art, and that is what makes expression possible.

So it is not true, in the example above, that "there is no love to feel." When a feeling is detached or abstracted from its daily life context, the feeling is exactly what *is* left. The feeling is not "love, the emotion" which would be a feeling directed at an object within a particular lived context; but what remains is a recognizable "feeling of love," the way a particular kind of love affectively—kinesthetically-- "feels." The kinesthetic pattern reproduced apart from its ordinary context retains the "feel" of the emotion of love.

This same analysis may be quite usefully applied in the creation of landscape art. The landscape artist can create in the walker a sense of, say, *triumph* by structuring the landscape so that the walker's body—his posture and walking positions and rhythms—will take on the patterns *correlative* to that feeling. There need be no actual obstacles for the walker to conquer—no mountains to climb or rivers to ford--and so no actual *emotion* of triumph. The landscape artist may create in the walker the "feeling" of triumph by, for example, placing a tall, visually attractive object at a distance so that the walker will lift his head, stretch his neck and expand his chest cavity. The walker will inhale deeply, stretching the delicate muscles of his ribcage and creating an increased oxygen flow. If the attractive object is situated across a wide expanse of open field, these body responses will be exaggerated. If he has just emerged from a darkened, narrow path through a difficult terrain that required him to keep his eyes—and head—down, the sudden uplift will produce an even more intense sense of bodily expansion.

All these bodily contractions and expansions, taken together, are felt as a "sense of triumph." (As was noted previously, Wolfflin noted that architecture and music both produce feelings of triumph in similar ways: by affecting the very sensitive muscles of the respiratory system.)

## Rhythm in Dance and Landscape

No discussion of either landscape or dance could conclude without a consideration of the role of rhythm. The artist, in both cases, is free to organize a work's structural components so that the total form conforms to principles of artistic composition and thereby meets the body's natural formal demands. Sheets-Johnstone's view is that, insofar as dance is concerned, rhythm becomes a structural element of form only *after* the expressive form is completed, and is apparent only in reflection. Rhythmic elements are, she argues, "afterthoughts of people viewing dance and not forethoughts of dancers engaged in creating dance." (72) They are mostly of interest to critics.

I defer to Sheets-Johnstone, the dancer and choreographer, to describe the dancer's experience, but I would argue that rhythm, as a kinesthetically perceived aspect of bodily movement—say, the bodily movement of the walker through a landscape--is very much intrinsic to the felt quality of that movement. Accentuated differently, a danced sequence would be felt differently; it would, I think, be a different movement altogether. A waltz and a rhumba, for example, each trace a "square" in two sets of three beats each. What makes the waltz fluid and the rhumba more a rocking, bouncing experience is rhythm, the way the elements are organized according to dynamic stresses: The waltz's BAH-ba-ba versus the rhumba's ba-ba-BAH. It seems to me clear that this is intrinsic to the quality of the dance as felt by the dancer.

The structural elements of landscape are also intrinsic to the felt experience of walking through it. Certainly, they are not afterthoughts of the landscape artist. As the built landscape plan, the landscape's "score" or notation must chronologically precede the performance of it; structural elements such as balance, repetition, and harmony will

be visually evident in the site plan precisely because they must be built into it. As was demonstrated earlier in the comparison of the site plans with the walked experiences of the landscapes at Vaux-le-Vicomte and Villa Lante, an actual landscape experience may diverge radically from what appears on the site plan. However, rhythms can often be made apparent in a site plan with a remarkable degree of accuracy. The *felt* qualities of movement, including rhythm, will still only become apparent to the artist when he himself moves through the space as the walker is intended to do.

Sheets-Johnstone defines rhythm as an accentual pattern that develops as tensional, projectional, areal or linear as changes occur in the working out of the dance. (104) "The beginning of each movement, therefore, creates a unique accent, not in the sense that the beginning of each movement is necessarily stressed, but in the sense that *it marks off, by its very change*, a new revelation of force…." (105) Rhythm, then, is a pattern of change within the dynamic features of the dance. But any change affects or alters the entire dance.

> Each new movement, each revelation of force, creates a new dynamic line such that each movement is, in fact, actually a change in all the qualities, even if some are held constant, as, for example, no variation in the projection of force, no change in tensional quality, and so on. Because the constants inhere in a new qualitative configuration, because there has been a change, of whatever minor order, there is a new movement, and thus a new dynamic line. (106)

The dance remains a single, unified, organic whole, but changes in any of its basic features are felt intensities that figure perceptually as the dance's rhythms.

The dance audience does not experience a counting out or an explicit rhythm, but the choreographer is aware of and often in search of the definitive structuring of rhythms. Thus rhythm is inherent in movement as *movement*, Sheets-Johnstone claims, but is not an immediately intuited phenomenon, not an integral part of the perceived dance:

> (W)hat is intuited is not a series of counts with appropriate accents, but rather, a dynamic flow of force in which the temporal and accentual

> changes constitute the very flow itself. What intrigues us is not how long a specific interval endures, but how it flows from and into other intervals; not how much an interval is accented, but how the total flow is inspirited by changes in intensity. (108)

This concept of rhythm is applicable as well to the experience of the dancer as she performs the dance:

> Analogously, in terms of the performing dancer: although the meter, the accents, the temporal values of the movements themselves denote a precise yet relative rhythmic structure, the dance does not come alive until the dancer passes beyond a mastery of the structure, and comes to realize the dynamic flow inherent it the total piece. (109)

While it is important to assess accentual values and count out durations of time and points of stress in order to teach and recall a dance, these are matters of dance *notation*, not matters of the dance itself: "(T)he stuff of which dance is made has a rhythmic structure; dance, strictly speaking, does not." (110)

All organizations of elements into perceived organic wholes rely on rhythm, whether of line, color, texture, movement, pitch, speed, weight, etc. Repetition, accent, emphasis—the elements of rhythm—are what create perceptual order. In landscape, as in dance, rhythm is a central concern of the artist in the act of creation. Rhythms are what make a dance "understandable" or enjoyable to the dance spectator, and they are also what lie embedded and often unnoticed in the landscape, organizing the walker's experience into an enjoyable one.

Rhythm is perhaps more fundamental in the structure of landscape than it is in dance because walking, the means by which landscape is experienced, is itself rhythmic. The walker brings his own natural body rhythms to both the performance and the reception of the work. Heartbeats, respiratory rhythms, and the walking body have long been understood as establishing the essential rhythms of human life. (See, e.g. Scripture, 1895.) Rhythm is therefore perceived as either natural—in harmonious accord with the body's natural rhythms—or as clumsy or thwarting the body's natural tendencies.

Apart from the intrinsically rhythmic activity of walking, alternations of any kinesthetically perceived aspects of the landscape constitute rhythm. Thus alternation of

sloped and level surfaces, alternation of narrow and wide pathways, of deeply enclosed and open spaces also set up rhythms that are experienced both visually and kinesthetically. The placement of objects--steps, curves in the path, anything that breaks or changes an established gait-- itself establishes a rhythm.

The sustained interest and deeply-felt pleasures of Frederick Law Olmsted's landscapes are due to exquisitely controlled rhythms: alternations of light and dark, steep and level, wide and narrow. The path that leads the walker into Central Park's "Ravine," for example, is a narrow, twisted walkway that demands the walker's caution and close attention lest he lose his footing; this path brings the walker into a wide open, brightly-lit field, an alternation that produces a poignant contrast of kinesthetic responses. Olmsted's entire work repeats these alternations in a variety of ways so that rhythm continues working subtly on the walker, urging him on to further pulsations: light and shadow, enclosure and expansion, constraint and freedom.

The late nineteenth century school of aesthetics that included Wolfflin promoted the notion that the natural body rhythms associated with respiration, heartbeat and walking established the background conditions of all conscious experience, and that aesthetic pleasure was largely a matter of kinesthetic responses that harmonize with the body's natural rhythms. This theory influenced Henry Vincent Hubbard and Theodora Kimball, who authored the earliest foundational text on landscape architecture, (1917) a work that became part of the regular curriculum at the Harvard Graduate School of Design which granted the first degree in the subject. (Veder, 23.)

> (W)e should remember that the emotions associated with repetition, sequence, and balance (in landscape design) are associated also with and automatically expressed by repeated, sequential, or balanced muscular motions and positions of the whole body, and these in turn intensify the emotion that suggested them. (Cited in Veder at 23.)[19]

In "Walking Through Dumbarton Oaks: Early Twentieth-Century Bourgeois Bodily Techniques and Kinesthetic Experience of Landscape," Robin Veder ( 2013)

[19] Hubbard and Kimball were incorporating the Jamesian view of emotion as a reflexive muscle response or complex of responses, an entirely bodily response to a stimulus; it is a view I will elaborate further in the final chapter of this dissertation.

considers the rhythms that the landscape artist, Beatrix Farrand, built into the movement patterns of a walker though the landscape of the Dumbarton Oaks gardens in Washington, D.C. Both Mildred Barnes Bliss, the owner of the property at the time, and Farrand were interested in early twentieth century thinking that correlated kinesthetic-awareness training with aesthetic theories and they paid particular attention to the kinesthetic impact of the landscape, and especially to the felt rhythms of a walk through it.

Staircases and graded slopes figure prominently in the design for the landscape at Dumbarton Oaks because of the startling steepness of the terrain on which it is built. (A topographical survey revealed a drop of over forty feet at one point in the property. (Veder, 9)) A choreography that would create pleasurable circulation through this landscape was, therefore, a significant challenge.

The final plan employed extensive terracing, joined by sloping walks and numerous staircases. The steps connecting the terraces had to be easy on the walker but also of a scale proportional to the size of the landscape itself; the tread-to-riser ratio utilized in interior staircases would not be visually appropriate. Good rhythm dictated that the stairways include landings at regular, rhythmic, points along the flights, and so Farrand adopted a general rule for choreographing the rhythm of the walker's climbing experience:

> (W)here possible, no flights of more than six steps should be built without a landing between the first and the next run of another six or eight steps. These landings … give rest to the climber by a change and a pace between the series of rising runs. The runs have been constructed either of odd or even numbers. … (A) flight of steps which starts out with an even number of steps in its runs, is continued throughout with even numbered steps. This makes the rhythm of climbing less wearisome than if added paces have to be made on each landing in order to start the new set of steps keeping the same rhythm of right or left foot used on the first step of the first flight. (Farrand, cited in Veder, 9)

The walker's natural preference for a rhythm as steady as his breathing is met by stair patterns that take the starting foot for each sequence of steps into account. In Dumbarton Oaks, Farrand's attentiveness to such details renders the walker's experience

smooth, fluid and "natural." Veder points out that Farrand tried to make clear in a manuscript that users of the staircases should ascend or descend each set of stairs with the same starting foot in order to maintain the steadiest, most "natural" rhythm. (Veder, 10)

In landscape, as in dance, the structural element of rhythm is an essential quality of the kinesthetic experience of the one performing the work. It is also a highly "contagious" aspect of movement, one that is easily automatically mirrored or modeled by a spectator. In landscape, rhythm is apparent in the built structures that condition human movement and must be reflected upon and set in place before the walker begins his performance of the work. Once the walk is begun, rhythms and changes of rhythm demarcate distinct "parts" of the landscape, that is, distinct kinesthetic experiences within the walk.

## Kinesthesia And Expression, Again

The aesthetic theory developed in this dissertation to account for landscape art is part of a broader aesthetic approach in which kinesthesia plays a central role. One might conclude from references to neuroscience throughout the preceding chapters that this theory identifies thoughts and feelings with their neuronal precursors or progenitors, that it propounds a sort of "neuro-aesthetics." However, I do not propose to replace traditional discussions of art with discussions of brain science: I am *not* suggesting that a work of art is nothing more than an electrochemical event in the brain, nor am I taking any other such reductionist view. Rather, I am arguing that *a key question* in traditional aesthetics can be satisfactorily answered by relying on recent discoveries of neuroscience and that, in particular, the neural events that traditional theory has, to its detriment, neglected are those correlated with the body's *kinesthetic* responses.

The reductionist, materialist view—which I take to be mistaken—holds that what I see when I view a painting is nothing more than pigment on a canvas; light reflected by the pigment activates the retina, and the retinal response is transmitted to the optical

cortex where an event occurs which the materialist calls the seeing of, for example, the color blue. Seeing blue is, says the materialist, nothing more than this sequence of electrochemical events. But of course, seeing blue is much more than that; it is also an internal event involving a perception of a color with a certain *felt* quality, and it is this felt perception which should rightly be called "seeing blue."

But the painting I am looking at is not merely a patch of blue; it is also composed, let us say, of a set of lines delineating an old man slumped over a guitar and the entire painting has a bluish cast such that even the guitar and the old man are drenched in blue. The lines make the man seem unrealistically elongated: His fingers, his neck, his nose, his entire face seem longer than normal, and seem to slope downward. His unusually long legs are crossed in such a way that the lines from his knees to his feet slope so extremely that, for them too, the downward direction is emphatic. This downward directedness is repeated in the lines of his clothing which hangs limply about him.

The reductionist view would describe what I see when I look at this painting much as he described seeing the blue patch, except that the description would be very complicated and absurdly long. But in the end, the perception of the painting would turn out to be no more than a bunch of electrical impulses transmitted from the retina to the optical cortex. If we were to ask what makes those impulses art, the materialist's answer might be that the electrochemical events in the visual cortex of the brain are accompanied by feelings of pleasure which feelings are, of course, just more electrochemistry

The explanation I propose relies heavily on neuroscience, but nowhere do I deny the reality of phenomena of a nature entirely different in kind from physical events; and nowhere do I deny that human consciousness, though undoubtedly dependent on the life of the brain, is a life of a different order. Finally, I do not deny that self-consciousness renders those capable of it very different from those who are not.

What I have done here, to be clear, is propose an answer to one very specific question that philosophical aesthetics has long struggled to answer: How do we account

for the fact that brute, mute, physical objects seem to carry, convey—express—human feeling?

The blue guitarist does not cry out from the canvas that he is melancholy, yet we know that he is. Our knowing in this case is intuitive: We *feel* his melancholia. We do not believe that the canvas is melancholic or that the pigment on it is sad; and we do not feel sad ourselves. Nor do we believe that Picasso must have been melancholic when he painted it, although we understand that Picasso must have at some time experienced the feeling of melancholia or he could not have made this painting. Finally, we do not see the guitarist as a symbol of melancholia, a carrier of "virtual" melancholia.

It is the guitarist's melancholia—not our own, and not Picasso's-- that we feel. How does this happen? What does the painting do to get this feeling across?

This separation between brute material objects and human consciousness where feeling occurs is the gap between mind and body. Philosophers have long labored either to bridge this gap or to show that it is merely illusory, or to persuade us that better attention to our linguistic structures will make it disappear. I am not offering yet another resolution to the mind-body problem as it manifests itself in epistemology or in ethics, but I do think one *aesthetic* problem—the problem of expression-- can be resolved by recognizing what kinesthesia is and how it comes about. Once kinesthesia is fully understood, it is clear that the "problem" of how material objects convey feeling does not require a bridging of a gap between ontologically distinct phenomena.

Consider, once again, Picasso's guitarist. Our experience of the painting surely involves the reflection of light from the canvas onto our retinas—an optical event, *but there is more going on.* The visual experience of the painting is, *at the same time*, a kinesthetic experience, an experience of muscle tension that may be understood as arising in part from imaginative modeling—of the guitarist's posture. In addition, if the Gestalt theory of visual perception is correct, the color blue itself leaves certain unresolved tensions in the visual cortex which produce their own kinesthetic responses. The dynamic tensions in the painting's lines and other characteristics of its composition further the same kinesthetic patterns that we identify as feeling.

Because feeling, unlike truth or moral judgment, is known to begin in the body's musculature as either contraction or expansion, and because each pattern of muscle tension can be correlated with a specific feeling, kinesthesia can fully account for expression. What is gained from a proper understanding of kinesthesia is an explanatory model of how non-conscious, non-sentient, phenomena—buildings, sculptures, paintings, dances, concertos, movies…and landscapes!—convey feelings.

Much more needs to be said about the neuronal goings-on that this theory pre-supposes, specifically how kinesthesia comes to be identified with feeling, and how feeling is related to life's ordinary emotions and can be "detached" or "abstracted" from them. Finally, more should be said about how, given the reflexive nature of kinesthesia and its pervasiveness in human experience, experiences of art should be distinguished from other natural, bodily experiences. It is to those questions that I turn in the next, and final, chapter of this dissertation.

# CHAPTER FIVE:
# THE CONTRIBUTION OF NEUROSCIENCE
# TO A KINESTHETIC THEORY OF LANDSCAPE AESTHETICS

I have defined landscape as a "kinesthetic" art because it relies for its expressivity upon the shaping of human movement. In this respect, landscape resembles other kinesthetic arts such as dance and cinema. As a *Gesamtkunstwerk*, it incorporates, in addition, the visual arts of architecture, sculpture and painting, all of which have been shown to rely for at least part of their expressiveness on kinesthesia. In this chapter, I examine recent developments in neuroscience that support the view that artistic expression depends essentially on kinesthesia. I revisit the philosophical theories of aesthetics that have been discussed in this dissertation to demonstrate the implications of contemporary neuroscience for their core concepts. I then examine the implications of this research for landscape aesthetics and conclude that landscape art is, in fact, an expressive art form like others embraced by the canon of philosophical aesthetics.

My broader argument--that *all* aesthetic expression ultimately depends upon kinesthesia—rests on an underlying assumption, mostly only hinted at throughout the argument so far, that feeling arises from movement. It is for this reason, that I have argued against the theory of expression that makes expression in art a matter of intellectually perceived or intuited form, "forms of feeling" that are not experienced bodily. In this, the final chapter, I turn to demonstrating how feeling arises from movement of and within the body such that artistic expression originates, in almost every case, as bodily movement. The unique mode in which landscape art elicits kinesthesia is further illuminated by contemporary research in neurophysiology.

I begin with an examination of Antonio Damasio's theory of emotion and feeling, a theory not only supported by developments in contemporary neuroscience, but one that synthesizes a broad range of competing theories—all well-supported by empirical evidence—into a coherent explanation of the relationships among kinesthetic

response, emotion and feeling. Damasio's distinction between emotion and feeling, and his interpretation of movement as lying at the source of feeling, make it possible to explain how feeling can be "abstracted" or "detached" from emotion, something that must occur if feelings that arise in response to "real-life" situations are to be induced in contexts such as art. Damasio's model, together with other research on emotion, explains how the landscape artist's shaping of the walker's movements elicits feeling. Damasio's theory not only demonstrates how other kinesthetic arts achieve expressivity, it is also coherent with Gestalt theory's explanation of how expression occurs in the visual arts.

Recent neuroscientific theories of emotion allow us to transform various traditional aesthetic theories so that they are empirically grounded. For example, recent developments in neuroscience enable a reinterpretation of Langer's "forms of feeling" as kinesthetic patterns so that her "symbols" function in a body-based, non-dualistic theory of expression. Contemporary neuroscience also supplies an empirical grounding for Wolfflin's theory of sympathetic modeling and supports the view that visual imagery carries feeling from the work of art to the receiver of that work by way of kinesthesia. The recipient of the work may be said to reflexively recreate what he sees as a pattern of muscle tension, which pattern is directly experienced as a specific feeling. The same neurophysiological research provides support as well for Arnheim's Gestalt theory of art by supplying a direct, non-conscious link between visual perception and the muscular tensions that are the source of feeling.

Importantly, the empirically established connection between kinesthetic response and feeling also supplies what is missing in John Dewey's theory of artistic expression, making possible an empirical account of how a felt impulse "selects" the elements of an expressive work. Recent neuroscience also renders concrete and supplies an empirical grounding for Dewey's view that expression succeeds when the recipient of a work of art "re-creates" it.

Dewey considered that an expressive object comes into being in a process in which a felt "impulse" is somehow compared with various perceived situations and felt qualities and "selects" those that "resonate" with it for inclusion in the work of art. The

recipient of the work then re-creates the work in his own experience, mysteriously drawing out the feeling that has brought the work's various elements together. (1934, Chapter III) Dewey, however, was never able to say just how one aesthetic element can be understood to "resonate" with others so that an impulse may reasonably be thought to select among such elements, and how the recipient goes about re-creating the expressed feeling in himself. In the end, then, Dewey's aesthetics became as metaphysical as the theories he had hoped to supplant. An understanding of feeling as a body process grounded in kinesthesia gives concrete meaning to the notion of resonance and so supplies what is missing in Dewey's theory. As enhanced and validated by neuroscience, Dewey's theory of expression forms the framework for a theory of art that takes kinesthesia as the foundation for expression in all the arts, and situates landscape in its proper place in philosophical aesthetics.

Environmental Aestheticians, it will be recalled, excluded landscape from consideration as an expressive form because, they argued, it was not like "the art of art history." (See, e.g. Bourrassa, 1991.) A cursory review of the history of landscape demonstrates that stylistic changes in landscape, considered as a *visual* art, tracked the evolution of ideas about man and his relationship to the natural world; landscape art, too, has a history that in all significant aspects resembles the history of painting or that of architecture. With an expanded view of expression based on kinesthesia, it should become possible to develop an historical account of the evolution of kinesthetic forms and to track, kinesthetically, the history of landscape as a history of the relationship between human beings and the natural world.

## Neurological Foundations: Kinesthesia, Emotion and Feeling

In landscape art, a walker's conscious, macro-scale body movements and posture are shaped by the artist's choreography. This section elaborates a neuroscientific explanation of how such conscious, large-scale movements engender feelings,

establishing an association the landscape artist can rely upon to convey feeling directly to the walker.

The argument in this section proceeds as follows:

*First,* I adduce evidence from recent neuroscience to the effect that 1. All felt emotions begin as unconscious reflexes that eventuate in both visceral and kinesthetic responses which produce chemical and electrochemical changes in the organism; 2. Subjective affect, or feeling, is a later development in which the changes wrought by emotion are uniquely represented in consciousness; and 3. The distinction between emotion and feeling accounts for how it is possible for feelings to be induced apart from the real-life situations that ordinarily elicit emotional reflexes.

In the *second* step in this section's argument, I examine the theory that specific patterns of kinesthetic response—complex patterns of muscle tension-- are uniquely correlated with specific feelings. This theory helps explain why we can accurately "read" a subject's feelings from seeing his body shape or posture. I then examine evidence that feelings can be induced by reproducing the kinesthetic responses that give rise to them, even when such kinesthetic responses—facial expressions, body postures and bodily orientation—do not arise from real-life emotional situations. That is, expressive facial and body postures and positions create *feedback* that induces in the subject the feelings they express.

In the *third* and final step in this argument, I show that actual macro-scale movement, not only static postures and expressive positions, but gestural *movements,* also create in the subject the feelings they express. This establishes neurophysiologically that, by choreographing the walker's movement and postures throughout the landscape walk, the landscape artist can elicit a continuum of specific feeling directly in the walker, creating the possibility for the landscape walk to function as an expressive work of art.

**Step One: Emotion and Feeling Are Distinct, Kinesthetic, Phenomena**

*The Body-Based Theories of James and Dewey*

In "What Is An Emotion?" (1884), William James argued that an emotion is a felt accompaniment to a purely physiological response to external stimuli: "(T)he emotional brain processes not only resemble the ordinary sensorial brain-processes, but in very truth are *nothing but* such processes variously combined…." (188)(Italics added.) This view amounted to a radical rejection of the intuitive traditional view attributed to Aristotle that emotions are aspects of cognition, desires that follow upon body events filtered through intellect and occurring later in time to the event which must first be reflected upon.

The difference between these two views was made clear by James himself. According to traditional Aristotelian theory, said James, I see a bear and reflect on what is likely to happen to me unless I run; this stirs a feeling of fear in me, a desire to flee which is an entirely mental event. Upon fleeing, I experience an increased heartbeat, sweating, trembling—body states--which I attribute to my prior internal feeling. James countered by arguing that, upon seeing the bear, I reflexively begin to sweat, stop swallowing, stop digesting, tremble and run.

> (T)he more rational statement is that we feel …afraid *because* we tremble, and not that we tremble because we are fearful…. (190) (Italics added.)

On this view, emotion is simply a name for the complex set of physiological occurrences that become known to us through sensory receptors throughout the body. James' behaviorist account built upon the Darwinian account that explained emotional behavior as movements that were, or perhaps still are, useful in an evolutionary sense.

Dewey approved James' behaviorist approach and its Darwinian grounding, but emphasized that the behavior engaged in as a response is reflexive, either instinctual or habitual. Reflection on the nature of the stimulus—"that is a bear to be run away from"—and the "feel" of the muscle tensions engaged in running, *both* follow upon reflexive response: "(T)he mode of behavior is the primary thing, and…the ideal and the emotional excitation (the "feel") are constituted at one and the same time." (1895,18)

For Dewey, a reflex response is the start of *both* cognition--the recognition of an object as a cause of feeling--and the felt emotion. When a bear lumbers into view, the

body instinctively prepares for flight in a complex of bodily changes that ready it for action. The bear, says Dewey, is first perceived as a bear-to-be-run-away-from when the feeling of fear as the feel of complex physiological changes arises. Both are temporally *subsequent* to the *reflexive* response of fleeing. Dewey insisted on this view of the timing involved in order to emphasize the point that if the behavioral response to an external stimulus is direct and immediate *there is no felt concomitant*: The knee-jerk reflex occurs without our feeling anger toward the doctor who administered the blow. For cognitive perception of an object-to-be-reacted-to *and* for the "feel" of an emotional response to occur requires inhibition of the immediate response:

> There is the one phase of organic activity which constitutes the bear as object; there is the other which would attack it, or run away from it…If these two co-ordinate *without friction*, or if one immediately displaces the other, there is no emotional seizure. (10)

Dewey's claim that reflexive responses to stimuli must be inhibited or interrupted in order to be felt was empirically verified in later experiments. A growing body of empirical evidence, in fact, supports an enhanced version of James' theory and Dewey's modifications of it. It is to the most recent developments in emotion theory that I now turn with a view to articulating the relationships among emotion, feeling and kinesthesia.

*Damasio's Model of Emotion and Feeling*

Antonio Damasio's *The Feeling of What Happens* (1999) is a neurobiologist's comprehensive, experimentally verified theory of the development of consciousness. The theory identifies the emergence of consciousness with the ability to know one's feelings and so, in tracing the emergence of consciousness, Damasio articulates a theory of both emotion and feeling. As he boldly puts it, "consciousness and emotion are not separable." (16) Damasio wraps into a single coherent theory the findings of many neuroscientists who preceded him and effectively counters previous theories that, in critiquing James and Dewey, argued for emotion as a cognitive, rather than a body-

based, phenomenon. Damasio roots emotion and the feeling of emotion largely in bodily *movement* or kinesthesia. In what follows, I summarize his theory of emotion and feeling without dwelling more than necessary on his theory of consciousness itself.

Damasio found support for James' theory in experiments with patients who, after suffering brain injuries, were unable to move. These patients could not experience any of what is ordinarily called "emotion." In patients whose injuries permitted limited movement of the upper body, however, emotional responses that involve movements of respiratory musculature and of the head and neck developed normally. Felt, conscious emotions, Damasio concluded, spring from awareness of the current state of the body. Just as James described it, the conscious perception of a body state involving muscular tensions *is* says Damasio, the "feeling of an emotion." A feeling is what Damasio terms a "representation" to a conscious self of something occurring out of consciousness; the unconscious happening is what he terms an "emotion." Experiments that were not possible in James' era have demonstrated, in addition, that organic processes that alter the blood chemistry are also perceived as emotion.

It is vitally important to note here that Damasio uses the term "emotion" to denote a bodily process involving either neural—electrochemical—signals from moving parts of the body or chemical signals from hormone secretion and other internal reactions that deposit chemicals directly into the blood. Both processes occur *out of consciousness*, and so "emotion" is, by this definition, always a simple, unconscious reflex. In what follows, it should be borne in mind that conscious perception of such reflexes—phenomena we refer to as feeling angry, sad, joyful, fearful, etc,--is a very different phenomenon, something occurring at the opposite end of the process that begins with what Damasio terms "emotion." Significantly, Damasio's use reflects the fact that the *start* of consciously felt emotion is, in every case, a "motion" of some sort, either a minute movement of some internal part of the body, say a spindle cell, or movement in the form of biochemical alterations, and it is this early, initiating movement that he calls "emotion."

Further, as unconscious reflex events, "emotions" are, for Damasio, like what we often refer to as "sensations." Like the mechanisms by which the retina's receptor cells

electrochemically signal light, emotion is not available to consciousness and not specific to humans or even to the higher animals. Earthworms, on Damasio's model, have emotions as every cell in their bodies responds to stimuli. In the second, more usual, use of the word, "emotion" is conscious and is often made public in the affected subject's behavior. Emotional behavior is, as shall be seen, an overt response to a situation or object, a response that occurs in a "context."

This unusual use of the term "emotion" seems contrived to neatly fit with James' and Dewey's view of emotion as a bodily reflex, but Damasio does not adopt James' view in its entirety. First, Damasio deflects the objections of cognitivists like Cannon who argued that emotion originates in cognitive evaluations. Damasio's theory includes learned and remembered body modifications—stored data—as part of what is processed in the non-conscious evaluation that triggers an emotional reflex. Second, on Damasio's theory, what the experiencing subject ultimately *feels* occurs two levels of consciousness above emotion. Thus, emotion only *comes into* consciousness as feeling when the bodily changes that are emotion are *represented,* first, to what he terms a "proto-self" as *feeling*, and then to a conscious self as *known feeling*.

Damasio distinguishes three stages of consciousness along a continuum: "a state of emotion, which can be triggered and executed non-consciously; a state of feeling, which can be represented non-consciously; and a state of feeling made conscious, i.e., known to the organism having both emotion and feeling." (37)

Damasio describes the proto-self's feeling—the second stage--as an immediate, momentary awareness of a single instant, the felt quality of a lived moment. At its lowest level, consciousness is not capable of memory or sustained carryover of any kind; until there is a "self" to which feeling can be neurally "represented," there is no conscious awareness of feeling, and so the earliest neural representation of emotion occurs out of consciousness. In a more complex representation of the initial representation—in self-consciousness—the feeling of an emotion is finally made conscious. Feeling—what rises to the surface of consciousness—is, strictly speaking, a "re-representation" which requires that a sense of self be established before it can occur.

This three-step process involves a complex sequence of neural developments which need not concern us here. However, the origin of the process is important to consider. Emotion gets started in an event outside the organism, a stimulus or situation. In response to that event, *preset* neural mechanisms produce bodily alterations. The organism instantaneously *assesses* or *evaluates* the stimulating situation with mechanisms that automatically either withdraw the organism from harm or propel it toward what enhances its chances of survival. These mechanisms operate on what is essentially a simple bi-directional axis: approach or retreat, reward or punishment, pleasure or pain, advantage or disadvantage. Any stimulus is thus immediately experienced as having a *value* to the organism that induces *movement* either *toward* it or *away* from it, or that induces chemical changes in the organism that prepare it for appropriate movement responses either toward or away from the stimulus. In every experience—in fact, in every lived moment-- signals sent to the brain from the rest of the body aim at or actually produce *movement*. Given this neural arrangement, all conscious experience is, from the start, imbued with *value*: *All experience has a felt quality that is at base a function of its positive or negative value to the organism's survival and so is the result of bodily movement.*

The complicated collections of chemical and electro-neural responses which form distinct, often consciously recognizable patterns throughout the body, are all thus biologically determined and depend on innately set brain devices laid down by evolutionary history to assist the organism in maintaining life. Culture plays a role in shaping some inducers of emotions (51), but contributes only minimally. Emotions primarily serve the function of homeostatic regulation enabling the organism to survive. This suggests that emotions—their genesis and manifestations—will be invariant over species and cultures, a hypothesis that has been repeatedly borne out by the experiments of Paul Ekman (1992) and many others. Emotion is thus what Darwin took it to be: a survival mechanism, the unconscious reflexes by which the organism protects and sustains its life. Thus, all living things, whether they have the means to be aware of it or not, experience emotion.

It follows that all perception is emotional:

> There is no such thing as a *pure* perception of an object within a sensory channel, for instance, vision. (C)oncurrent emotional changes … are *not* an optional accompaniment. To perceive an object visually or otherwise, the organism requires both specialized sensory signals *and* signals from the adjustment of the body…(Damasio, 147)[20]

Nor can a "pure" perception occur even when the subject is precluded from moving his limbs. If say, an injection of curare is administered so that the skeletal muscles are immobilized, if the "visceral" muscles can still move freely and the internal movements associated with a specific emotion can proceed normally, an emotional effect can be produced.

Damasio demonstrated further that simply *thinking* of an object, rather than actually perceiving it, can also produce emotion. This occurs, he hypothesized, because "the records we hold of the objects and events that we once perceived *include the motor adjustments we made to obtain the perception in the first place"* (147-48) (Italics added.)[21] A remembered perception thus *includes* the emotional responses generated by the initial perception; that is, the subject's original kinesthetic response is, Damasio says, "coregistered in memory…. [E]ven when we 'merely' think about an object we tend to reconstruct memories not just of a shape or color but also of the perceptual engagement of the object required and of the accompanying emotional reaction, regardless of how slight." (148)

Damasio incorporated into his explanatory model the considerable body of empirical findings that characterize *conscious, end-product* emotions—the ones we know by familiar names, such as anger, fear, joy, etc.-- as formed by distinct bodily patterns of neural response. Different regions of the brain have been found to be triggered in different emotions. Thus the ordinary *felt* emotion of anger differs *neurally* –at the unconscious level--from fear, and is neurally identical across cultures, genders,

[20] This, it should be recalled, is what more recent experiments in Gestalt psychology of visual perception discovered: A second region of the brain, acting in tandem with the visual cortex, is responsible for endowing visual stimuli with felt qualities.

[21] This would seem to corroborate Collingwood's account of how a painting's image acquires felt meaning.

and generations. Both the inciting stimuli and the expressive gestures and facial expressions ultimately generated by these neural responses are invariant.

The implications of this experimental evidence for aesthetic theory are, of course, profound as they explain not only our ability to "read" the gestures, facial expressions and other neuromuscular responses of others when, for example, they dance, vocalize, or perform other bodily movements,[22] but it validates, as well, our sense that our aesthetic judgments are universal or "objective," the results of hard-wiring present in *all* human beings. The fact that different emotions are produced by different brain systems explains why we can easily tell the difference between an expression of fear and an expression of anger, and why we can readily distinguish the ways these two conscious emotions *feel*. Even though the number of brain sites employed in the induction of emotion is very small, the *pattern* for each emotion is distinctive.

The publicly observable, behavioral responses which we ordinarily take as expressions of emotion—manifestations of conscious, felt, emotion-- are all patterns of muscle tension—all kinesthetic responses. They include, for example, tightening of facial muscles to produce expressions of anger, fear, disgust, etc. Blanching or flushing in embarrassment; body postures that signify joy, triumph, depression, defiance, sadness or discouragement; the sweaty palms of apprehension; the racing heart of pride; the slowing heartbeat of terror--all are familiar and recognizable. Other, less observable but ultimately measurable chemical alterations involve the secretion of hormones, peptides, and the neurotransmitters that help to create part of the feeling of each emotion.

The mechanics of emotion induction, then, are straightforward. Regions of the brain that are part of a preset neural system related to the specific emotion send commands to other regions of the brain and to the body generally. The commands are sent either through the bloodstream as chemical molecules to the body's tissues, or along neural pathways as electrochemical signals which act on muscle fibers or on organs

[22] Damasio distinguishes a variety of emotion that he calls "background" emotion, of particular interest in the discussion of landscape art. "Edginess," "tenseness," "discouragement," "enthusiasm," "down-ness," and "cheerfulness," states that are manifested in longer enduring body states such as posture, speed and contour of movements, and prosody, the musical, tonal accompaniment to speech sounds are more aptly described as "moods." Possibly landscape art induces moods rather than emotions or feelings as the walker, in traveling through a landscape, sustains his posture and the speed and contour of his body movements over a considerable duration, a point to which I return later in this chapter.

which release chemicals of their own into the bloodstream. The results are the sorts of reflexive *movements* identified above as the outward signs of emotion. Importantly, this entire chain of neural events, spurred by an encounter with a specific stimulus, goes on unconsciously. The developments are the same in earthworms as they are in humans, and all occur automatically, according to preset, survival-oriented reflexes.

Whether it is a matter of emotion induction, or recognition, or expression, we are always concerned with *patterns of movement*. As Damasio puts it:

> (Y)ou can find the basic configurations of emotions in simple organisms, even in unicellular organisms, and you will find yourself attributing emotions such as happiness or fear or anger to very simple creatures who…have no feeling of such emotions in the sense that you or I do, creatures which are too simple to have a brain, or, having one, too rudimentary to have a mind. You make those attributions purely on the basis of the *movements* of the organism, the *speed* of each act, the *number* of acts per unit of time, the *style* of the movements, and so on. You can do the same thing with a simple chip moving about on a computer screen. Some jagged fast movements will appear "angry," harmonious but explosive jumps will look "joyous," recoiling motions will look "fearful." …The reason you can anthropomorphize the chip or an animal so effectively is simple: *emotion, as the word indicates, is about movement*… (70) (Italics added.)

Unconscious emotions, then, are characterized by the style of their fine-grain, cellular movements; emotional behaviors are distinguished by the patterns of muscle tensions—larger-scale movements—in the larger, publicly observable, body. On Damasio's model, emotion must be present for the awareness or "knowledge of feeling" to occur. Both feelings and the knowledge of having feelings are private occurrences; emotions in the second, later, sense of the word, are patterns of bodily responses that are public occurrences.

Thus while "emotion" is an *internally generated* but outward, *largely publicly observable*, event, "feeling" is *inwardly directed and ultimately subjectively known*. (37) Feeling is the private, "mental" experience of an emotion:

> (Y)ou cannot observe a feeling in someone else although you can observe a feeling in yourself when, as a conscious being, you perceive your own emotional states. Likewise no one can observe your own feelings, but some aspects of the emotions that give rise to your feelings will be patently observable to others. … The basic mechanisms underlying emotion do not require consciousness, even if they eventually use it; you can initiate the cascade of processes that lead to an emotional display without being conscious of the inducer of the emotion let alone the intermediate steps leading to it. In effect, even the occurrence of a feeling in the limited time window of the here and now is conceivable without the organism actually knowing of its occurrence. (43)

Most of our discussion of emotion, it should be noted, required no mention of a self, a subject that felt or knew anything at all about the goings on that were finally observed as displays of emotion. That is because no conscious or knowing self is involved in the having of an emotion. *Feeling* an emotion requires a "representation" of the emotion *to* a self that can be aware of it. This is an entirely different process, engaging entirely different regions of the brain and involving a second tier, as it were, of consciousness. To produce an instantaneous, fleeting, here-and-now feeling the neural patterns of body events must be interrelated with the neural patterns that, as Damasio puts it, "stand for you." (73) In the third and final tier of neural activity, another neural pattern arises, the pattern that represents "you knowing" which is, says Damasio, another name for consciousness. Only at this final level is an organism conscious of *feeling* something, and only then is the organism aware that something has happened, that a stimulus has interacted with its body. Thus, an organism having an emotion can be evident to an outside observer even if it is not evident to the organism itself.

I have noted that what Damasio refers to as the inciting "emotion" is a movement of some sort and exists at a level at which we ordinarily think of sensation as occurring. Damasio's distinction between "emotion" and "feeling" is analogous to the distinction often drawn between "sensation" and "perception:" Perception is the final work product of representing sensed information to a conscious self.

It seems important at this point to re-state what has been said in Chapter Four about the often ambiguous use of the key word in the theory I am articulating here. "Kinesthesia" is used in two senses: As the unconscious signaling of activated spindle

cells, the receptors along the musculature, "kinesthesia" denotes a *sensation*; in the unconscious sensation of kinesthesia, the spindle cell receptors operate purely mechanically just as other receptors, say, those in the retinas, do. As the eyes, the home of the visual receptor cells, are the organs of vision, so the muscles throughout the body may be considered the "sense organs of kinesthesia" insofar as kinesthesia is a sensation. When the muscles move, signals are automatically sent to the brain, just as signals are sent to the brain when the retinas are stimulated by light.

The *perception* of kinesthesia, however, is a "later," "higher level" phenomenon: It occurs when sensations of muscle movement are "represented" to a conscious self as what Damasio calls "feeling." Muscle movement is *perceived* as located in specific regions throughout the body, depending on just which muscle cells are involved in the sensation of movement; as many groups of muscles are usually involved, distinct *patterns* of sensation are represented in the perception of movement. Thus, when the sensation of kinesthesia is made conscious it is *felt* as a pattern of muscle tension throughout the body. Many such patterns are familiar as our responses to particular kinds of stimuli and they have acquired familiar names: anger, joy, fear, etc. Other, less familiar or entirely fresh patterns of response may produce surprising pleasures as they do when we experience works of art.

*The feeling of an emotion* is thus the way a reflex response in the body's tiniest movements feels—is represented in consciousness-- when those tiny responses accumulate into patterns of macro-level movement throughout the body. At the felt level, we often give these responses the same name as we give to the earliest movements, "emotion," which is appropriate since they are also *movements*. Again, it is what those movements feel like to the conscious subject, their affect, which we term "feeling."

For a *feeling* of an emotion to arise, two types of biological change must occur. First the changes in body state produced by both chemical changes to the bloodstream and electrochemical neural signals must occur. Second, the overall resulting change to the body's internal landscape must be "represented" in the somatosensory structures of the central nervous system. These second tier changes can occur without actual changes

in the body landscape; they can occur by another mechanism which represents the body landscape "as if" changed by actual emotion.[23]

Damasio's theory elaborates on James' theory by accounting for "somatic markers" whereby the brain can monitor the body's past and hypothetical responses, both in the autonomic and the voluntary systems. The association of the characteristic bodily states

with past and hypothetical experiences and responses establishes a connection between emotion and cognition, allowing for inclusion of the intentional nature of emotion and the fact that thought can alter it.

The fact that feeling occurs at a different level of consciousness than emotion and employs a different set of brain regions and neural structures makes it possible on Damasio's theory for feelings to be induced by stimuli other than those that ordinarily induce emotions. That is, body movements or chemical alterations of the body milieu induced artificially—apart from the way such stimuli arise in ordinary life—can effectively create feelings that are recognizable to the organism as the familiar feelings of life experiences. The fact that neural sites are preset across the human species to respond in distinct ways explains why it is possible for artistic expression to succeed across cultures and generations.

Although Damasio begins with James' premise that emotion is the body's response to a situation, and the feeling of the emotion is the feeling of that response, he thus finishes where Dewey did by noting that the feeling of an emotion is a *later*, and therefore, what I have referred to in the previous chapter as an *abstractable,* or *detachable,* occurrence. This, of course, raises the question of what purpose feeling serves in the course of evolution. Emotions, Damasio argues, are what activate us to get out of harm's way; but these are unconscious and can be effective in protecting us without our ever knowing about them. Feeling, says Damasio, (287) is what alerts the organism to the problem the organism has already begun to solve, and so is useful for planning specific and non-stereotypical responses which can guarantee and maintain the immediate gains brought about by the emotion.

[23] This mechanism, which is central to the possibility of inducing feeling apart from the lived situational context of emotion—say, in art—will be taken up in a later section.

Step One in this section's argument, now complete, has demonstrated empirically the profound link between emotion and kinesthesia, explaining why it is true that all felt emotion—all feeling—is sourced in movement. This part of the argument also makes clear that emotion and feeling are neurally and temporally distinct and, therefore, detachable, and that distinct feelings are the results of neurally distinct patterns of body responses that include both kinesthetic and organic responses. Step Two establishes and characterizes the connection between distinct bodily positions and their correlate subjective affects, feelings.

Before moving on to the second step in this section's argument, however, it is important to note that Damasio's explanatory model, rich as it is as a link between emotion and feeling, and between emotion and kinesthesia, does not ever resolve the aesthetic issue that is a legacy of the classic mind-body problem. The trick in the model is Damasio's use of the word "representation." The physical body process of a stimulus being reacted to by electrical and chemical events in the receptor cells is a familiar one, as is the process whereby these reactions are registered as electrochemical events in the brain. These are unconscious mechanisms performed in even the lowest forms of life. But when Damasio proceeds to explain that these electrochemical processes are then "represented" to a conscious self which is itself a "representation" of an enduring body, he takes us out of the realm of bodies and their physical processes. It is not surprising that, at some point in his narration, the conscious self which is *not* empirically observable by science must meet up with the body's processes, but Damasio's model does not solve the philosophical problem of how this can possibly come about. Thus, despite the advances of neuroscience, philosophers still have their work cut out for them.

**Step Two: Felt Affect Is Uniquely Correlated With Specific Kinesthetic Responses**

The distinctions among emotions have long been considered distinctions among neural *patterns*. In 1977, Joseph de Rivera theorized that twenty-four distinct emotions could be mapped on a three-dimensional matrix that organized them along three axes representing patterns of muscular contraction and expansion as responses to external

objects. He arrived at his twenty-four emotions by consulting dictionaries of English usage and reducing similar meanings to a single term, and then "tested" his model by demonstrating that it constituted an effective synthesis of existing theories of emotion, accounting for phenomena elucidated by other theories, and that it accounted for different emotions named in English as well as in other languages. Virtually no clinical experimental evidence was examined. The model remains a neat classificatory scheme based on an understanding of emotions as muscle responses to interactions with external objects, a system in which emotions are understood as *kinesthetic patterns* of either extension toward or contraction away from an object.

De Rivera argued that each of the emotions can be *communicated* by distinct expressions because expressive behavior in every case reflects the same organized structure that underlies the affective experience of an emotion. (1977, 20) There is, de Rivera claimed, a *structural identity* of bodily response and *feeling*. Thus a bodily posture with a "kinesthetic structure" of muscular tensions similar to those of a given subjective emotional state will induce that specific emotional state in another who sees the posture because a seen bodily posture "provokes" a structurally similar emotion. (21)[24]

We can acknowledge that bodily postures and facial expressions—and also buildings, shapes and lines in paintings, movements of dancers, and sculpted forms—have shapes or forms because they exist in and take up space. The problem with any theory of feeling that postulates an *identity* or *coherence* of such forms to the "form" of a feeling is, as has been argued previously, that feelings do not occupy space. De Rivera effectively *correlated* felt subjective affect with distinct bodily positions but left unresolved the significant aesthetic problem of *how* physical forms carry feeling.

Sheets-Johnstone (2009) relied upon de Rivera's research to argue that basic qualities of movement are *congruent* with the dynamics of specific feelings. (208)

[24] This will be recognized as identical in form to the Gestalt theory of visual perception previously noted as burdening the theories of Langer and Sheets-Johnstone. Apart from demonstrating that the twenty-four named emotions he chose for his matrix can be described in terms of muscle tensions—kinesthetic patterns—de Rivera offered no experimental evidence that the patterns he noted do, in fact, generate the specific subjective feelings his emotion names denote; nor did he make any advance toward making sense of the phrase "form of feelings."

> (W)hen fear …moves us, we move in ways qualitatively *congruent* with the ways in which we are moved to move; spatial temporal, and energic qualities of our movement carry us forward in an ongoing kinesthetic form that is *dynamically congruent with the form of our ongoing feelings*. (209) (Italics added.)

It is because the "feel" of an emotion—of a specific body pattern of muscular tensions or movements—is different from, yet "formally congruent" with, the movement that generates it, Sheets-Johnstone argued, that an artist can separate one from the other and be certain that one will "stand for" or "symbolize" the other. The fact that feeling may be mimed in body movement without being actually experienced, testified, she believed, "unmistakably to the dynamic congruency of emotion and movement. Corporeal tonicities are congruent with specific emotions from the beginning…." (209)

Damasio's theoretical model, taken with others developed by contemporary neuroscience, supplies the solution to the problem left dangling by de Rivera, the awkward aesthetic problem of "felt form."

Nina Bull (1951) subjected a theory linking postural attitudes with specific feelings to empirical testing. Bull's experiments demonstrated the validity of Dewey's theory that unconscious reflex movement in response to a stimulus is only *felt* when there is an *interruption* of the overt response to the stimulus.

Bull understood "emotion" to include a subjective component, affect, and a public behavioral aspect, expression. The behavioral aspect itself has, Bull demonstrated, two distinct phases: "the motor attitude or posture of the body which, being *preparational* in character, is necessarily first in time; and the subsequent activity of *consummatory movement* for which the motor attitude prepares." (3) Her experiments concluded that only where a delay occurs between instinctive, reflexive attitude assumption and overt activity do feelings of emotion, or "being moved" arise. The assumption of a preparatory attitude leads to both feeling and action, but the neural mechanisms involved in the two outcomes are entirely different.

> In all…preparatory attitudes the involuntary postural preparation, including various behavior patterns of the face and eyes, is accompanied by appropriate organic changes, those in the breathing, heart action and digestive apparatus being particularly noticeable. Feelings of these

organic changes combine with the feelings of the orienting posture itself—and with some awareness of the original exciting stimulus—to produce the familiar experience known as an "emotion." (5)

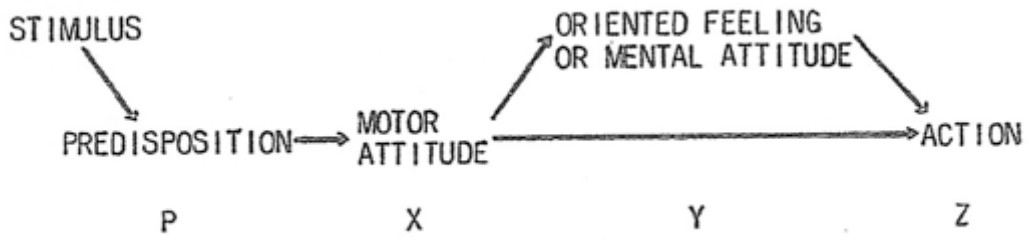


Figure 12. Diagram of the sequence linking latent attitude or predisposition with motor attitude (posture) as precedent to conscious feeling and motor action. (Bull, 1951, 9)

Feeling, Bull concluded, is mediated by a "motor attitude, the *attitude of readiness*. "The feeling of mental attitude…is an oriented awareness of the motor attitude. It belongs in the feeling stage, Y, of the sequence, and is a more or less conscious readiness for action." (8-9) Posture, then, has for the affected subject, a feeling; it is the feeling of the muscle tensions required to assume and maintain a posture of readiness to act. This feeling of a pattern of muscle tensions *is* the feeling of an emotion. Hence, Bull draws a clear and direct line from a postural position—a pattern of muscular tensions—to felt emotion. The feeling comes about because the organism is preparing to respond in overt action to the object or situation that provoked it.

Interestingly, Bull notes, we feel an emotion less intensely when we begin to act on it; it is the preparatory phase, the attitude assumed by the body before an emotion is fully expressed in action, that yields the feeling we identify as the feeling of an emotion. According to James, we do not cry because we feel sorry, but, rather, feel sorry because we cry. Bull demonstrated that the sorry feeling is elicited by *getting ready* to cry; we feel less sorry when the crying actually starts and, if we cry violently enough, the feeling

vanishes. The key point for the argument I am making here is that felt emotion—the feeling of sadness preceding the act of crying—is precisely the feeling of muscular tensions in the body as it prepares to cry, as it prepares, that is, for action in response to an event or situation. Emotion occurs in a lived context as the felt aspect of the organism's response to that context.

It follows that emotions—now evident in public posture-- can be easily "read" by others from bodily attitudes. This, Bull suggested, is because we are all neurally wired the same way: One person's angry *attitude* is easily understood by another as "expressing" anger. Dewey (1895) explained this phenomenon in Darwinian terms: When a tiger bares its teeth, it serves a warning to other identically-wired animals that the animal is about to pounce.

Bull, however, insisted that attitude should not be understood exactly as Dewey and Darwin characterized it, as reduced or lessened movement; attitude is, said Bull, *uncompleted* movement. As a delay in the reaction to a stimulus, attitude anticipates a final stage that completes the movement. Dewey's characterization, she believed, ignored the "push" that lurks in all preparatory attitude, the fact that it is like "a tightly coiled spring" (8) not merely a casually assumed bodily position. Emotion is an on-the-way within a movement, movement at its inception, a matter of muscle contraction in preparation for further movement.

Bull's model helps explain why an assumed attitude, even apart from a provoking context, can communicate feeling. But when the "push" is absent from the "coiled spring"—when an attitude is assumed, say, by a dancer—the felt emotion will be attenuated. This model further helps explain why the felt emotion had by the spectator who models an attitude without actually responding to a stimulus with a directed, motivated action, is not experiencing the attitude as preparatory and so therefore experiences an attenuated emotion. Bull's conclusions about communication of attitude also explain the success of the "method school" of acting: When an actor recalls an actual situation in which a specific feeling occurred, he can imaginatively re-create the body postures—the "tightly coiled springs"—associated with that feeling and can thus more powerfully convey the feeling to an audience.

Bull anticipated Damasio's later claim of a neural substrate that is predisposed to move in preset ways keyed to the organism's survival. Her full analysis of emotion, then, is as follows: A stimulus interacting with the organism's unconscious predisposition leads reflexively to the assumption of a bodily attitude which, in turn, results in *both* action and feeling. To the extent the action is inhibited or delayed, the feeling is perceived or felt consciously. Reflection or cognition might enter at the point between preparation for action and the action itself and alter the behavioral or the felt outcome. [25]

Bull's attitude theory thus understands feeling as the outcome of a *neuromuscular* sequence, a matter of *movement* and, thus, kinesthesia. In her experiments, Bull focused on overt, observable *macro*-behavior involving the facial and respiratory muscles and those in the torso and limbs, and concluded that feeling cannot arise without an antecedent motor attitude to "fire the afferent pathways from the muscles and viscera to the brain." (19)

Conflict occurs when incompatible postural attitudes would be required; the feeling of conflict is nothing more, says Bull, than neuromuscular tension: "Mental conflict is merely an awareness of what is taking place in terms of muscular activity." (20) Repressive or suppressive attitudes are, likewise, neuromuscular in nature and can be "read" in the subject's body language—as, for example, in a stiff upper lip or a clenched fist.

Bull's most useful research for the purposes of this step in my argument, involves her testing of the proposition that *the particular action prepared for by the motor attitude determines the particular feeling elicited.* Bull's experimental data reveal conclusively that *consistent patterns of bodily response* can be induced which *correspond precisely to the familiar affective states* known as disgust, fear, anger, depression, triumph and joy, the six emotions generally considered by clinicians to be the basic emotions from which others are constructed.

[25] Damasio did not take up the notion of attitude as a separate, intervening, step in the arc between emotion and feeling; Bull's theory simply supplements, but is thoroughly compatible with, what Damasio proposed.

Bull conducted two series of experiments. In the first, hypnotized subjects were told to demonstrate the various emotions as they were named, using whatever body language they felt was natural. The subjects displayed behavioral patterns with a remarkable uniformity. However, of more interest is that they *also* reported subjectively *feeling* intensified affect as a consequence of such behavior. In other words, it seemed that the affect-expression nexus *ran both ways*: A named emotion triggered a specific pattern of expressive behavior *and* the expressive behavior triggered a more intense affect of the named emotion. Bull found "wide areas of correspondence" (74) between the behavior patterns, observed and reported, and what the subjects said they felt. She concluded that "it was obvious in most cases that the feelings experienced by our subjects were feelings of their own behavior and caused by it." (74).

In a second series of experiments, hypnotized subjects were given direct suggestions of postural sets and organic sensations to determine if various affective states could be *synthetically* produced. The actual word for each emotion was not used; rather, the subjects were given descriptions of bodily postures and facial expressions and then asked what they felt.

> Thus, instead of …using the word 'Fear,' (the experimenter would say,) 'Your whole body feels stiffened up. You can't catch your breath. You want to run away but you can't.' Instead of 'Disgust': 'There is a sour taste in your mouth. You want to get away.' Instead of 'Anger' 'Your hands are getting tense and your arms are getting tense. You can feel your jaw tightening.' Instead of 'Triumph': 'You can feel your back straightening out; your head up; your chest expanding.'(1951, 79)

The experiments demonstrated that specific neuromuscular sequences *produce* specific affects. Not only was there an invariable link—a reliable correlation—between the body language of the musculo-skeletal system—expressive posture—and psychic processes, such that behavioral attitude constituted a sensitive indicator of psychic states, but behavioral attitude served a *generative* function: Posture or attitude actually produced the felt, psychic states correlated with those attitudes.

Bull's conclusions are consistent with Damasio's theory of emotion. The feeling of an emotion is, on both analyses, distinct from and temporally subsequent to the underlying body movement that generates it, a movement that involves muscle tensions, stimulation of the spindle cells along the muscles. In both theories, emotion, an unconscious reflex triggered by preset, survival-based neural structures, can occur without subjective affect, but affect can only occur as the outcome of an emotion.

Both Bull and Damasio understand the differences among the specific emotional feelings as essentially differences in *patterning* of the muscular-skeletal responses. Whereas Bull identifies patterns of overt bodily postures and facial expressions, Damasio, in the light of finer grained research, enlarged the notion of "patterning" to include organic responses such as hormonal secretions and changes in the internal milieu, including the digestive and respiratory systems and the brain itself. For the purposes of this dissertation, the points of agreement between Bull and Damasio are consequential as the objective here is to demonstrate how the kinesthetic responses set up in the walker by landscape art can be reliably counted on to induce correlated feelings. To the extent that the other art forms that landscape incorporates—especially architecture, sculpture and dance—are expressive because of the kinesthesia they induce, we may conclude that most feeling in landscape is generated by intentional structuring of the recipient's kinesthetic responses.

In 1989, Duclos, Laird et al tested the effect of induced bodily positions on subjective affect. The test was designed to assess whether the combination of facial expressions and other emotional behaviors produced specific corresponding affect states or only perceived pleasantness/unpleasantness. The experiment identified four universally recognized facial and bodily expressions—fear, anger, disgust and sadness--all of which were "unpleasant" or "negative," and tested whether persons normally responsive to feedback from their own bodily positions could discriminate emotional differences based on positioning, first of facial muscles, then of muscles throughout the body. The experimenters concluded decisively that people who are attuned to self-induced emotion were able accurately to discriminate among all four negative

emotions.[26] In a related set of experiments, (Flack et al. 1999) demonstrated that people who respond to their own facial expressions are responsive to their bodily postures as well, and that matching combinations of facial expressions and bodily postures result in more powerful feelings of the corresponding emotions than do either facial expressions or postures alone.

Experiments relating bodily *orientation* to postural attitude were conducted by Lackner and Graybiel (1979) who tested the effect of postural attitudes on a subject's perceived orientation during periods of weightlessness. The subjects were put aboard an aircraft that flew in parabolic trajectories which produce periods of weightlessness. The question was whether, and in what postural situations, subjects could accurately assess their orientation in space. The study demonstrated that the tilt of the chin and the direction of gaze toward or away from the body influence the sense orientation and in some cases have an influence even when the eyes are closed. Despite the actual horizontal position maintained throughout the experiment, subjects experienced themselves as "upside-down" when their chins were tucked down toward their chests, and as "upright" when they were positioned facing ceilingward with their heads tilted back. Dance choreographers report that they focus on the front of the throat as the center from which the dancer orients herself in the stage space (Ben-Yakov, 2010), and Lackner's experiments confirm that the throat is the fulcrum for positioning the head and, therefore, the gaze of the dancer, and is a fulcrum, too, for orientation in space.

David Morris (2004) interprets the results of Lackner's experiment as follows: The three postures used by Lackner—head tilted back, level, and tilted forward--represent respectively an opening to, a restfulness within, and a closing off from the world.

> Tilting one's head toward one's body closes one's body on itself. This closed posture is protective and concernful, it turns one away from … (one's) roots in the world. One looks down at one's feet, and there one notices what Neruda calls 'he isolated and solitary part of (one's) being' …. Having one's head tilted down is an expression of shame, a way of

[26] About twenty percent of the population responds minimally or not at all to differences in their own facial or postural expressions.

> expressing one's concern with one's situation, or shame at one's way of being in the world, or just simple care for the way one is moving about on unsteady ground. When in the downward facing posture, subjects feel a loss of orientation and control. (141)

More recent experimental evidence has confirmed Bull's finding that felt emotion requires a "blocking" of the organism's active response. Plutchik (1980) reported, for example, that emotion is experienced consciously *only* when action is totally or partially blocked, when the organism is momentarily paused in his primal engagement with the object of his emotion. This blocking of a follow-through in action suggests the sort of stepping back from the fray of emotional engagement that characterizes "the aesthetic attitude;" the pause to contemplate a feeling for its own sake is the pause that allows the feeling to deepen and intensify, while forging ahead into active response, dissipates or attenuates feeling.

Although Bull and other researchers reviewed in this section succeeded in establishing strong correlations between patterns of muscle tension and subjectively felt emotions, none attempted to correlate *movement of the entire body* on a macro level—the kind of movement choreographed by the landscape artist to be experienced by the walker—with felt emotion. Nor has any of the theories considered in this section succeeded in providing a meaning for the phrase "forms of feeling." What de Rivera theorized and Bull and others established empirically is that specific patterns of muscular-skeletal response can be accurately predicted to elicit specific felt emotions. The entire body, when it moves, transforms itself into various shapes that we identify as *gestures*. It remains to be seen if gestural, whole-body movement can be correlated with specific felt emotions in the same ways more static postures and facial expressions can be, for, it is primarily with the larger body movements involved in walking that the landscape artist must be concerned.

**Step Three: Gesture—Expressive Movement—Produces Feeling As Feedback**

The final step in this argument—the proposition that specific *movement* of the entire body, not merely of the facial muscles or spine and neck muscles related to posture, elicits specific, correlative emotional feelings in a moving subject—is provided by the abundant and wide-ranging research conducted by Manfred Clynes, in a field he called *Sentics.* (1975; 1980)

> Painters and sculptors have to content themselves with momentary cross-sections in time to imply movement and expressive relationships. Yet the specific nature of live movement in time most powerfully influences communication. The time course of the expression defines its true character. But in the arts of music, dancing and acting, the time course of the expression is allowed to reign. …I have called the scientific study of dynamic emotional communication *sentics*…( a study which) aims to study the subtleties of temporal expression and has developed a new method for studying these experimentally. (1980, 272)

Clynes' research, focusing on the characteristic forms of movement, revealed precise inherent relationships between subjective feeling and patterns of muscle tensions *and consequent bodily movement.* More important for this thesis, he confirmed that a precise form of bodily movement has a "feedback effect" on the subjective state: Bodily movement, dissociated from any emotional, object-related context, generates specific familiar emotional feelings. (1975, 561)

Clynes' research led him to conclude that both the *production* of certain forms of bodily movement and *recognition* of those forms as expressive of specific feelings were *biologically programmed complementary functions* of the nervous system. The relationship between expressive movement and the feeling expressed by it is, therefore, neither fortuitous nor the result of cultural associations; the connection is part of the very nature of emotion. A specific emotional feeling, such as anger, and its dynamic expression form, Clynes claims, a single system: The overt expression of an emotion is specific to that emotion and is specific to a brain algorithm program—also developed by Clynes—pertaining it.

> The production and recognition of essentic forms are governed by inherent data-processing programs of the central nervous system, biologically coordinated so that a precisely produced form is correspondingly recognized. The recognized form in turn generates a sentic state in the perceiver. (1980, 283)

This precise complementarity does not hold true, however, of all states we would generally regard as emotions. Jealousy and envy, for example, Clynes found, do not share the characteristic of being what he called "contagious."[27] In the case of those many emotions that *are* contagious, expression can *recreate* an almost identical affective state in another individual of similar biological wiring, e.g. of the same species. Contagion, Clynes concluded, is a "built-in function of the nervous system's organization." (562)

Both the person expressing an emotion and the spectator of that expressive behavior, are identically hard-wired so as to make such communication successful.

> In nature's system of communication of emotions, … the message units themselves have spatiotemporal features that act like keys in locks of our nervous system: The language, sender, and receiver are co-designed with vocabulary and meaning evolved by nature." (1980, 273)

Moreover, the "generating function" of contagious emotions applies "not only with respect to another individual, but also with respect *to the individual who is expressing*." (1975, 563) (Italics added.) The link between expressive movement and feeling in a single individual is thus a connection that *runs both ways*: One expressing an emotion experiences *feedback* from his own bodily movement that, itself, generates the specific feeling *in him*.

The emotions Clynes found to be "contagious," or biologically determined to be precisely communicable to others when manifested in an individual's behavior, are love, grief, joy, anger, hate, laughter, sexual excitement, reverence, hope and fear. (1980, 273). Clynes' list of communicable emotions may be enlarged; other researchers have

[27] The contagious emotions are those generally conveyed in the non-narrative arts. Non-contagious emotions require cognitive supplement to be successfully conveyed, a point that will be further discussed later in this chapter.

found that disgust, surprise, happiness and sadness are also cross-culturally contagious—reliably communicable. (See, e.g. Ekman, 1992) Unlike the "non-contagious" emotions of jealousy and envy, the contagious, communicable emotions are those that manifest in publicly observable *movements*.

Clynes began his experimentation with the extraordinary assumption that the specific expressive forms—patterns of muscle tension and movement—for a particular feeling would be implicit in *any* expressive modality, regardless of the motor action utilized. That is, he assumed that a specific gestural *pattern* or style of movement of the face, arm or foot—or voice—would *all equally well* express a particular feeling. Clynes thus assumed that *the entire body* felt a specific emotional feeling in ways that took on essentially identical patterns of muscle tension regardless of which part or parts of the body were involved in expressing it.

This assumption proved experimentally correct: Each contagious emotion correlates with a unique kinesthetic pattern that characterizes muscular response whether that response occurs in the large limbs, the fingers, the respiratory musculature, the neck, throat, face—or voice. Clynes concluded that this is a result of the fact that dynamic expression is governed by brain programs or algorithms specific to each emotional state, brain programs he calls the feeling's "essentic form." (1980, 272)

> Essentic forms turn out to underlie expression regardless of the sensory modality in which they are expressed; thus, an expressive musical phrase, the tone of voice, a dance step, and an expressive touch partake of similar essentic forms when seeking to express a particular quality. (1980, 273)

Expression, as movement, is temporal. It takes a distinct amount of time to execute an expression of joy, anger, sadness, love, etc. Emotional expressions may occur in sequence, but each expression possesses the precise character and duration of that particular emotion. The time course of an expressive movement, Clynes theorized, is pre-programmed by the brain such that the temporal character of the way the expressive movement unfolds is embedded in it from the outset. (1980, 272)

Assuming, as Clynes did, that the dynamic arrangement of muscle tensions specific to any emotion is invariant, the body region involved in expression is irrelevant;

any arbitrary motor output of a sufficient degree of freedom could be chosen for experimentation. For the sake of convenience in testing, Clynes chose the transient pressure of a finger of a subject in a sitting position, and devised a means of testing movement and pressure on a key wired to an electronic recording device that created tracings on a spooling graph. The "sentograph" measured the vertical and horizontal vector components of finger pressure against time with a fine grain of resolution and finely calibrated linear dynamic range.

Subjects were told to imagine a particular emotion and express it by pressing on the sentograph's key. The gestures produced differed as to length of *time* the key was depressed, *acceleration and de-celeration* of the pressure, and *angle* of depression. Clynes found that *direction, duration and accelerations* differed for different subjective states. For example, pressure might be exerted away from the body, in a more neutral, vertical direction, or toward the body. In some respects, what Clynes was testing was de Rivera's theory that emotions are distinguishable according to various subject-object relationships expressed as "toward" or "fromward" movements.

In tests conducted over a decade with thousands of subjects across cultures as diverse as Balinese, Japanese and Mexican, clear, uniform correlations between named emotions and specific patterns of movement were found. Links between production of essentic forms and recognition of them, Clynes concluded, are biologically hard-wired.

The implication of these test results for theories of aesthetics cannot be understated. Form, which philosophers have always hoped would turn out to be universally intuitable, is found to be grasped cross culturally and also across all modalities of perception. This provides a basis for the claim that it is form, or the formal properties of art, that permits members of one culture to understand—get the felt meaning of—the art of other cultures. Although specific content may be strange to members of another culture, the felt rhythms of a distant culture's music, the shapes and colors of its painted surfaces, its dances—and its landscapes—are understandable as kinesthetically felt experiences.

Clynes' experiments with his sentograph revealed, for example, that in "anger" there is a marked accentuation of the horizontal component, indicating a tendency for

the action to be outward, away from the body. The characteristic shape for "love" showed a longer curved action, often with a slightly reversed horizontal component, indicating a pulling inward or what he termed an "embracing mode of behavior." (279) "The pre-programmed time of the action for love is considerably longer (than it is for anger.) The characteristic form for sex shows a strong secondary thrust with emphasized late muscle activity." (279)

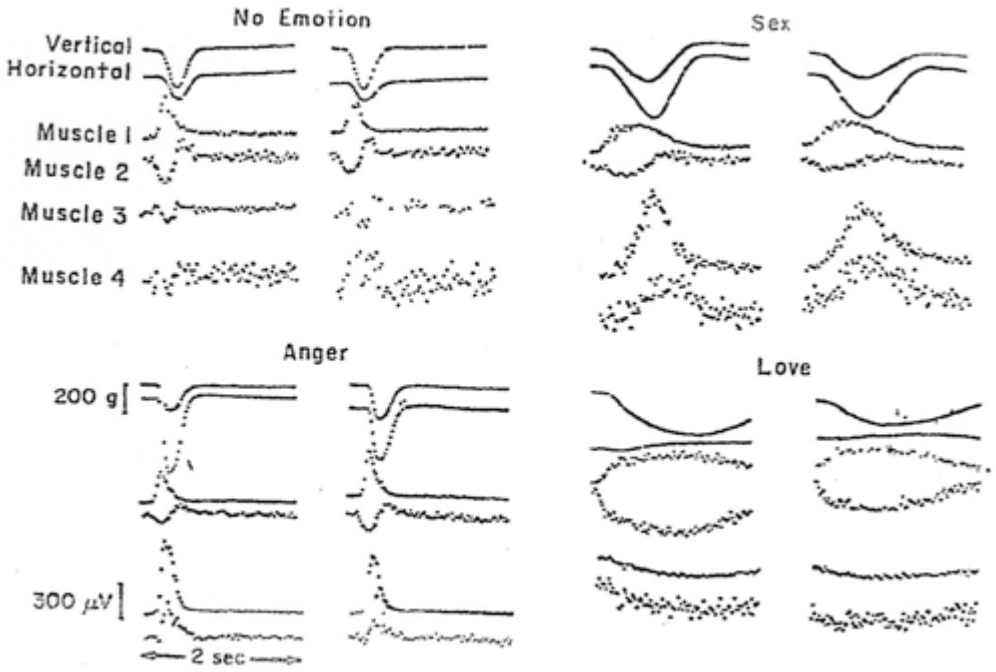


Figure 13. Sentograms of essentic forms as vertical and horizontal components of finger pressure; also, four groups of muscle potentials integrated and rectified with a time constant. Muscle potentials were recorded from the forearm, upper arm, front shoulder and back, respectively. Groups represent repeated recording from the same individual showing the stability of the patterns. "No emotion" consists of a mechanical movement, such as used for typewriting. (1980, 279)

Most important for the inquiry here is that Clynes also found that it was possible, through re-creation of specific dynamic forms, to *generate* feeling states that were, in their patterning, indistinguishable from similar states with content-bound "causes" or objects. That is, *synthetically produced* patterns of bodily movement were found to

produce the specific emotional feelings with which they were experimentally correlated. Thus, emotions may be generated by movement *in the absence of a cause or real-life context*:

> (O)ne may enjoy all the emotions that may be so generated and expressed, in a manner that is well known to musicians and composers. …Experience of content-free emotions has an aspect that frees one from a form of slavery to emotions whereby one must wait for external "reasons," "causes," and "recipients" to experience a particular emotion. For example, many individuals who have found little reason for joy or love are able to experience these repeatedly through (this) generation process…(564)

Clynes was interested in the therapeutic implications of this process, but it is clear that there are significant implications for aesthetic theory as well, for not only does his research support the view that expression is fundamentally a matter of kinesthesia, it also confirms that kinesthetic responses—movements—*generate* subjective affects specific to various patterns of muscle tension throughout the body. Landscape art, by directly inducing patterns of bodily movement, can therefore precisely elicit specific feelings.

Clynes found a remarkable level of precision in discrimination among the various forms produced as expressions of specific emotional states. Each specific form was found to be accompanied by specific physiological changes in the respiratory, cardiovascular, and metabolic systems. Ultimately, he was able to develop mathematical equations for experimentally determined essentic forms, and demonstrate that they were describable by a single generating differential equation with different physiological parameters determining specific forms. (1975, 580)

A precisely produced essentic form is readily recognized by another individual, and a recognized form in turn generates that precise felt state in the perceiver. That is, a gesture or facial expression that is perceived through the *visual* sense generates in the one seeing the expressive gesture a feeling that is virtually identical to the original feeling. The recognizing function of the nervous system, Clynes concluded, corresponds perfectly to the producing function.

Clynes' account of communication of emotion, like his notion of "contagion," is speculative, but the broad range of his experimental sample provides solid evidence that both production and recognition patterns operate cross-culturally and so are hard-wired. Further, his experiments demonstrating that patterns of expressive movement are invariant regardless of the system of musculature expressively employed, are further buttressed by his experimental finding that attempts to *retrain* the essentic form so that the form of one emotion can be used to express a different emotion have utterly failed: Each felt emotion appears to be biologically *hard-wired* to its respective essentic form. Additional support for Clynes' explanatory model comes from experiments with conflictual situations in which two or more emotions are generated. (1980, 291-292)

The reciprocity Clynes discovered in the expressive/affective nexus is of great significance for this thesis. However, he cautioned that this reciprocity is not complete, but only partial; that is, the feeling generated by expression is not absolutely identical to the original feeling the essentic form expresses. An essentic form traced by body movements of an individual who does not know what feeling this form corresponds to does not produce a feeling *in that individual* that is *in every respect* identical to the original feeling.

> The act of tracing a form is different from perceiving such a form produced by another…Yet, the process of tracing a given essentic form does provide an input to the individual that is similar to at least a subsystem of his sensory experience when expressing such (a feeling.) (The reason) only a subsystem may be involved (is that) in actual expression, the sentic state itself acts as a driving impetus, and the kinesthetic experience interacts with this. This interaction is integrated into the present moment through the activity of the nervous system. When an essentic form is *re-traced*, the experience is the kinesthetic experience *without the driving force of the sentic state*. (1975, 593) (Italics added.)

In other words, a specific kinesthetic form traced by a body's own movement—say, in walking through a landscape or in dancing –does not feel exactly like the same form when it is a "tracing," a seen form created by the movement of another. What distinguishes the original felt essentic form—the form of one's own movement—from

form that is seen and then "modeled" according to an identical neural algorithm, is that the latter lacks the "driving force," of context. The organism's own survival, to put it bluntly, is not at stake.

This is analogous to Bull's comment that staged postures lack the "push" of identically-shaped postures assumed in response to a real-life stimulus. Clynes proved with respect to bodily movement what Bull had demonstrated about static postures. When an essentic form of movement is induced in a walker by the creator of a particular landscape, for example, the movement is dissociated from the "driving" feeling—the survival-oriented impulse—that ordinarily creates it in a lived context. The feeling that emerges as a result of modeling the essentic form—tracing it—separated from its biological origin is understandably an attenuated feeling, lacking what Clynes terms the "driving force" of the original feeling. It is the feel of a kinesthetic experience in isolation from lived context. [28] It is the attenuated feeling experienced in art.

Another result of Clynes' experiments has significant implications for aesthetic theory. He discovered (1980, 287) that when feeling is generated as a "pure quality," without a basis in an emotional situation or context which presents an object for the emotion, the feeling may *draw to itself* various fantasized situations or contexts. (1980, 287) Such fantasies include a virtual body image that might produce tensions in specific parts of the body. Such "baseless" feelings might also possess a field of "knowledge" relating to attitudes or a general worldview. Thus a generalized "detached" feeling acts as a magnet, Clynes found, selectively recalling past experiences associated with the same state.[29] A detached feeling elicited by tracing of specific bodily movements correlated with that feeling acts, Clynes says,

> … as a memory search function for a class of experiences, which have in common a similar quality of emotion. This process occurs rather effortlessly. It should be emphasized that it is *not an association* of the present situational content of new experience with specific memories of the past, but that the generalized state acts as a focus or template that draws experiences in memory to awareness. …The generalized state also

[28] These findings should not surprise us; most would agree that art does not generate the intensity of emotion that a "real-life" situation does, nor does art normally "move" us to act.
[29] This is an almost verbatim rendering of part of Dewey's theory of expression.

> acts as a selective focus to create new fantasies with dynamic content and relationships engendered by the state or its expression. This function is one of the creative functions of the state of emotion. (1980, 297)

## The Implications of "Mirror Neurons" For A Kinesthetic Aesthetics

In the 1990's, experimenters in Parma, working with macaque monkeys, discovered a type of brain cell that responds equally when a subject performs a specific action and when the same subject witnesses another perform that same action. Recent research with humans indicates that the same neural phenomena—so-called "mirror neurons—can explain how we immediately and automatically understand the thoughts and feelings of others from the ways they move.

The research with monkeys indicated very specific mirroring based in the hard-wiring of the monkeys' brains. For example, when a researcher grasped a peanut, the monkey did likewise; when the researcher put the peanut in his mouth, the monkey did the same. Perhaps we have always known that monkeys behave this way: Monkey see, monkey do. However, the Parma researchers, Dr. Giacomo Rizzolatti and his team, located precise neurons that account for this behavior. (See, Winerman, 2005) In effect, what this team discovered was a neural underpinning which, when it was later confirmed in humans, could account for what Wolfflin speculatively concluded was "modeling." If humans are wired so as to mimic motor behavior that they see other humans perform, then this same wiring in effect induces kinesthetic perceptions which are, as we have seen above, felt emotions.

Research performed on humans utilizing neuro-imaging demonstrated that, in fact, human feelings such as "disgust" activated the identical neurons in the brain as were activated by watching someone else experience disgust or "look disgusted." The same area of the somatosensory cortex was activated both by lightly touching a subject with a feather duster, and by having the subject view pictures of someone else being touched in the same spot. (Winerman, 2) This research makes clear that there is a hard-wired, neuronal underpinning to what Wolfflin termed "sympathy" that accounts for

why what is seen in the movements of other humans is felt by those witnessing the movements; that is, it explains precisely why we immediately grasp the feeling in the "form" of human postures and movements. It is not because we "associate" that feeling with a form, nor is it because we intuit the form as symbolic of feeling. Rather, we are neurally wired to feel the subjective state that drives the movements and postures of another.

Further, research with human mirror neurons confirms both Bull's and Clynes' distinction between casually struck postures and "faked" movements on the one hand, and those that are actually motivated by survival-based impulses. This distinction, it will be recalled, accounts for the fact that forms of posture or movement experienced as art carry "attenuated" feeling, distinguishable in intensity from what is felt in real-life contexts. This research has demonstrated that mirror neurons tend to respond to actions "with clear goals" whether those actions are perceived through sight, sound, or any other sensory pathway. (See, e.g. Iacoboni, Marco et al., 1999) The "action understanding hypothesis," that mirror neurons are the neural basis for our ability to understand others' actions, includes provision for what both Bull and Clynes noted, namely that mimed or decontextualized human movement will be both mimicked and felt, by another human being watching that movement, but in less intense, more attenuated, way. (Thomas, 2012)

Although neuroscientists and philosophers have both expressed objections to the theory that mirror neurons are responsible for understanding the intentions of others, (See, e.g. Churchland) it is clear that the psychological theories of how expression comes about—how we understand postures and movements of others as having felt qualities and also how we come to actually feel, in attenuated form, those same qualities—are beginning to receive validation from research in neuroscience.

This section's brief review of the relevant neuroscience permits a re-assessment of the several theories of aesthetics that have been employed in this dissertation to analyze landscape art. It suggests the possibility of formulating a kinesthesia-based aesthetic theory. The next section demonstrates that recent experiments in neurophysiology support the view that expressiveness in landscape, and in the other arts

which it includes, depends upon kinesthesia. Landscape art is, therefore, an expressive art that differs from other arts only in the means by which it induces kinesthesia in its recipients.

## Reconsidering Expression Theories: Wolfflin, Arnheim, Langer and Dewey

The findings of contemporary neuroscience permit an updating in experimentally verifiable terms of some of the traditional theories of aesthetics that have been employed in this dissertation. Such updating is worthwhile because 1. It will establish some of these theories on firmer scientific footing while clarifying what is wrong with others, and 2. it will establish kinesthesia as a central aspect of much of artistic expression, enabling the notion of a "kinesthetic art form" to enter the canon of philosophical aesthetics.

The central problem of aesthetics is expression: How is it possible that an non-sentient, "dead" or "mute" object can convey human feeling to a live human subject? The theories of expression that I have relied upon in discussion throughout this dissertation are Langer's theory of symbolic form, Wolfflin's theory of sympathetic modeling, Arnheim's Gestalt theory of visual perception, and Dewey's theory of "art as experience." How do the discoveries of contemporary neuroscience enhance or diminish each of these theories?

### Langer's "Forms of Feeling"

Langer's theory of symbolic form has been evaluated at several points in this dissertation. I have objected to it principally on the ground that it invokes a dualistic theory of human nature. Langer's view that the various human feelings are correlated with specific physical forms has, in an odd way, been borne out by neurophysiological research.

De Rivera described emotions as "forms of kinesthetic tensions" but the "forms" he identified with feeling were material body states. Clinical evidence positively identifies various feelings with distinct facial expressions, postural attitudes and forms of bodily movement, but this is, in every case, a matter of congruence between two kinesthetic patterns: Feelings are identified with a pattern of muscle tensions which are taken as congruent with a previously experienced pattern of such tensions. What neurophysiological research shows is that feelings are *correlates* of distinct *bodily* forms; it does not support Langer's view that *feeling* itself occurs in "forms" such that material objects--dance movements and formal qualities of paintings -- may be said to be *congruent with or isomorphic to* them.

**Wolfflin's Theory of Sympathetic Modeling**

Wolfflin's theory seems, at first, the most naïve of the theories considered here, particularly on account of what seems an inherent anthropomorphism. Wolfflin set out to account for the feelings aroused by a work of architecture; his solution was to view humans as *reflexively* "modeling" the physical forms of architecture by imaginatively assuming analogous postures. Such modeling, Wolfflin hypothesized, induced in a viewer the familiar feelings those postures ordinarily express.

Clynes' theory completely supports Wolfflin's view that a human bodily form, when communicated visually, is fully integrated with its felt qualities, and that the re-creation in the percipient subject of the feeling expressed by that form occurs *automatically* in a reflexive process. Clynes added that the process is set in motion by pre-set neural wiring for which accurate algorithms can be adduced, thus establishing the felt meanings of particular forms as "universals."

Wolfflin's theory is borne out as well by the experiments of Bull and Clynes that demonstrated the reciprocity of expression and subjective affect; it is now clear that forms of bodily movement and bodily postures can be accurately correlated with specific feeling such that feeling can be accurately read from bodily forms, and, reciprocally, bodily postures and forms of movement induce, by way of *feedback*, the subjective

feelings they are taken to express. A human body that models or "traces" a particular form generates *in itself* the feeling correlated with that form. The process appears to be as hard-wired, and so as intuitive, as Wolfflin supposed.

What is contributed by recent developments involving mirror neurons is the idea that hard-wiring does in fact supply what Wolfflin supposed was supplied by modeling. Thus, the question of whether a perceiving subject needs to have a live bank of kinesthetic memories or needs to be able to recall the felt qualities of previous experiences in order to successfully "model" the movement of another human is no longer on the table. The modeling, we are now fairly certain, occurs automatically according to the precise, algorithmic mechanisms that Clynes supposed. Although there is much controversy over the applications of mirror neuron research to fields such as moral theory and autism treatment, there is no doubt that neural underpinnings can successfully and fully explain the empathic loop involved in feeling the feelings of others when their postures and movements are perceived.

What has not been empirically tested, so far as I am aware—and what mirror neurons do not explain-- is whether the same hard-wiring that makes it possible to accurately know—and, consequently, feel—the subjective feelings of other *humans*, also makes it possible to accurately "read" the body postures or forms of *non-human* objects, such as architecture. Wolfflin postulated "sympathy" to connect human feeling to non-human forms. It remains an open question whether such anthropomorphic sympathy in fact exists as part of the neural wiring of the human brain. Clynes noted that one of the conditions for contagion of feeling to occur is a formal symmetry of biological form; that is, it is easy for monkeys and humans to "read" one another's body language because of the similarity of their bodies' structures, but it is impossible for a human to as easily "read" the body language of a spider or a turtle. To the extent that a human possesses something of the form of a building—uprightness in defiance of gravity, perhaps—it might make sense to Clynes that humans instinctively "trace" or "model" works of architecture. Certainly, it makes sense to imagine human modeling of some works of sculpture.

Sympathetic modeling generally begins with retinal imagery as the visual stimulus provides the model of the posture to be assumed by the observer. The modeled posture, it should be noted, is perceived *kinesthetically*: By re-creating through muscular tensions the form that is seen, the viewer "gets" its emotional significance. Both Clynes' "sentics" and the theory of mirror neurons supply neuroscientific validation for this account, but in both theories, the modeling or mimicking is confined to the images of other humans or human-like forms. Both Clynes and the mirror neuron theory explain modeling as a Darwinian development: We develop the means to understand the feelings of others for the sake of survival. This theoretical basis is not extendable to things like buildings or painted forms, or to music, without stretching meaning beyond reasonable limits.

The expressive content of a perception does not develop in any externally-directed sense organ—an eye or an ear—but in internal perception originating in receptor cells located along the muscles. Clynes' demonstration that kinesthetic patterns do not vary with the region of the body involved might seem to support the notion that seen patterns are translatable as kinesthetic patterns. However, visual patterns involving electrical properties of the visual cortex do *not* involve *muscular* tensions. Thus Clynes' findings on invariance are not relevant here. The question of how visual "tensions" apparent in, say, a painting," are translated into kinesthetic tensions is not answered by Clynest.

**Arnheim's Gestalt Theory of Art**

Rudolf Arnheim's Gestalt theory of expression (1954) is another attempt to explain the transformation of retinal stimuli into felt perception. Gestalt theory attributes the felt qualities of retinal images to brain activity in which traces on the external sensory organs result in *isomorphically structured* traces as electrical "force fields" in the brain. These fields, following the Law of Pragnanz, resolve themselves into the simplest and most stable shapes. (Koffka, 1935) It is their "struggle" to do so—the neural representations of electrochemical adjustments aimed at simplification and

stability—that produce various felt qualities, the feelings of colors, shapes and other visual properties.

Damasio interpreted contemporary neurophysiological research as reaching the conclusion that there is no such thing as an emotionally neutral perception through any sensory organ. Every sensory signal is met with a signal of the organism's bodily adjustment to it such that when it becomes conscious it is already a perception colored by feeling. (1999, 147) Certainly, Gestalt theory only emphasizes this well-accepted view.

Although Clynes' theory of essentic form is not explicitly a theory of visual art, his demonstration that the patterns of muscle tensions specific to a particular feeling are *invariant* for that feeling *regardless of the region or part of the human body involved*, as mentioned above, it remains an open question whether his conclusions can be reasonably extended to electrical "force fields" in the visual cortex. At present, the best that can be said of Gestalt theory is that Clynes' experimental proofs and Gestalt theory of felt visual perception cohere.

It is perhaps difficult to conceive of electrical impulses in the visual cortex as "tensions," but Clynes believed that visual imagery was as much a matter of directed tension as any movement of the limbs or fingers. We should be able, he argued, to understand "angry lines" as easily as we can identify "angry sounds," "angry dance movements," or "angry touching" because all output modalities of a given feeling share in a single specific kinesthetic pattern. (1980, 273) The parameters Clynes measured—duration, direction, and intensity—can all be applied to electrical disturbances in ways that make sense of the notions of coherence or isomorphism between them and kinesthetic responses.

**Dewey's Theory of Expression: Art As Experience**

In *Art As Experience* (1934), John Dewey extolled aesthetic experience as distinctly human and ennobling, yet he insisted that art works form a continuity with natural situations such that expression is continuous with other life processes. As

expressive art is a natural phenomenon, empirical science can shed light on the process; expressive objects are products of imagination but they should not, for that reason, remain mysterious. Dewey explicitly rejected any claim that art emerges from unconscious, mystical processes; whatever is, he believed, can be fully understood by human intelligence. The production of art is, above all, a human and conscious process employing human intelligence; it must be understandable by and coherent with empirical theories of human perception and of other natural activities. (1934, Chapters I and II)

Dewey's account of the process by which an art object is created is almost entirely empirical, but he could not account for a serious gap which can now be filled, utilizing the discoveries of recent neuroscience.

Expression, Dewey explained, begins as an unarticulated impulse, which, as it travels through the artist's experience in the natural world, picks out those formal characteristics and concrete situations that resonate with it, and selects those to be integrated into the work. This is often a process of trial and error, the artist casting about for the correct color or line, the right composition and even the right subject matter until the impulse exhausts itself and the work is complete. (1934, Chapter IV)

As an integration of elements the artist found to resonate with the feeling to be expressed, the newly-created work embodies the feeling with which the process began. The work is constituted by natural elements all of which occurred in the experience of the artist but, gathered with other elements of similar resonance, these elements acquire an intensity that unrefined, ordinary experience lacks. Elements of similar felt tone resonate sympathetically, heightening the shared felt quality that marked them for selection in the first place. The resulting product is a refined, intensified--but still natural—experience, "an" experience. (1934, Chapter III).

The process by which the work was created is recapitulated in the recipient's perception as the selecting feeling emerges anew. If a work truly "works," the re-creative process continues into the later experiences of the recipient and thus goes on to inform and heighten the recipient's other natural experience. Hence, although all experience is *in* nature—although the artist, the work, and the recipient are all natural—

the work functions expressively because intelligence and intention have refined ordinary experience and thereby intensified it. A continuum thus runs between nature and art, but only art is powerfully expressive of feeling. (1934, 52-57)

The neuroscience examined here explains and provides empirical grounding for Dewey's argument that all perception is emotionally expressive, that all sensation is integrated with conscious feeling. What needed elaboration in Dewey's theory is the point that forms the core of his theory:

> In the development of an expressive act, the emotion operates like a magnet, drawing to itself appropriate material: appropriate because it has an experienced emotional affinity for the state of mind already moving. Selection and organization of material are at once a function and a test of the quality of the emotion experienced. (1934, 69)

How, in actual fact, does a feeling identify and select naturally occurring elements that resonate—share an "affinity"-- with it? Dewey analogizes the function of feeling in selecting elements to that of a magnet, but this is metaphor and could refer to a bodily process or to something metaphysical. As it stands, it leaves a discomfitting gap. How do we supply an empirical meaning for the emotional resonance of objects with feelings?

Damasio's theory, by distinguishing feeling from emotion, dovetails with Clynes' description of "generalized emotion" and with Bull's notion that postural shapes can, themselves, generate specific subjective affects. Sheets-Johnstone's notion of visual body shapes and shapes of movement as "abstract" is yet another description of the same phenomenon: A feeling can be abstracted—detached, separated—from its ordinary life context, from its function as a natural response to an external stimulus, and still retain, in attenuated form, its initial felt quality. The overwhelming evidence of neuroscience is that a feeling, even when it is "abstracted" from real life experience, is identifiable as an often familiar body state, a kinesthetic response stored electrochemically. These feelings can be elicited by specific body postures and bodily movements. We have also seen agreement in the theories discussed here about the invariance of expressive form over various media and means of expression.

Taken together, these empirically-grounded theories explain how various elements in the artist's experience can be said to "resonate:" They elicit "congruent" or identical *kinesthetic responses*. Thus, a sensitive, creative person can accumulate experiences that carry similar or even identical feeling, "detach" such feelings from their ordinary contexts, and integrate them into a new, expressive object. Dewey's description of how selection comes about retained a disturbingly mysterious element, interpreted in terms of recent research, however, his explanatory model receives empirical grounding, and so his theory of art as experience becomes a fully realized, empirically-based aesthetics.

In addition, Clynes' discovery (1980, 287) that feeling, when it is experimentally "detached" or "abstracted"—what he termed a "pure quality"—attracts to itself imaginative objects lends further support to Dewey's theoretical assumption that a felt impulse can draw or "magnetically" attract objects with the same felt quality. Clynes also found that a feeling experienced without a contextual basis or object generates fantasized or remembered objects of similar quality which share with the generalized feeling *virtual body images that produce kinesthetic tensions*. In other words, a generalized feeling draws to itself what is kinesthetically identical. The generalized feeling is thus a selector of resonant objects that suggest themselves as possible elements for inclusion in the new expressive work. It acts, Clynes suggests, "as a memory search function for a class of experiences, which have in common a similar quality of emotion." (287) Clynes, like Dewey, distinguished this process from mere "association;" the de-contextualized feeling becomes a "selective focus to create new fantasies with dynamic content and relationships engendered by the state or its expression." (287) Clynes is aware that this phenomenon allows the "generalized" feeling to serve creative, artistic functions.

Dewey insisted that the creative process is an entirely conscious and intelligent one. Damasio, like Clynes, also concluded that much of what is felt is ultimately a matter of cognition; what we learn and store as memory figures into the evaluative process in which a reflex response to a stimulus is first formed. Kinesthetic response is, Damasio claimed, "coregistered in memory" with the object that first produced it. (148)

Consequently, when we recall an object, we call up as well memories of it that *include* the kinesthetic responses that first accompanied it. Thus, Damasio's theory accounts not only for felt qualities of present sensations, but for felt qualities of remembered objects of consciousness as well. A feeling in search of resonant material for a work of art compares itself with remembered experiences, cognitive material soaked through with kinesthetic qualities that are part and parcel of the original cognition.

Like Dewey, both Damasio and Clynes caution that such cognitions do not acquire their felt resonances by behavioristic associations, pairings occurring in conscious experience; rather, they are neurally locked into the memory of the object and stored as an integral part of it. Again, both Clynes and Damasio provide empirical grounding for Dewey's account of how an expressive work is created.

Dewey understood *reception* of art as a re-creation of the artist's gesture by the recipient such that the emotional content of the gesture arises anew in the recipient/re-creator. (1934, 52-57) Neuroscientific evidence of the reciprocity of perception and expression—the two-way street between observable behavior and felt affect—supplies Dewey's theory of reception with persuasive empirical grounding. Art, it turns out, is quite as Dewey described it, simply another natural object, and so the processes of both expression and reception are natural processes. What distinguishes the artist from others is a sensitivity to the felt qualities of experience, and what distinguishes a work of art from other experiences is the intensity of feeling they carry, an intensity that draws us to them as situations to be enjoyed purely in the contemplation of them. This intensity is the result of an intelligent process of refinement that can occur because of a natural resonance of felt elements that carry what the artist perceives as identical feelings.

Recent theories of neurophysiology also support Dewey in resolving another issue in traditional aesthetics: Is it ordinary feeling that art conveys, or is it something utterly unique, something we should call an "aesthetic feeling?" In contrast to the tradition that held that arousal of emotion is the primary function of art, more recent aesthetic theory drew a sharp distinction between arousal of emotion and the way art works its effect. (See, e.g., Scruton 1974.) Dewey understood art as continuous with the rest of nature, and the response to art as a variety of ordinary human response.

It seems most reasonable to say that aesthetic experience is some variety of emotional experience, as opposed to a cognitive or intellectual experience as was sometimes supposed. If art is not expected to evoke ordinarily-experienced emotion, what is the experience we have in the presence of art? In referring to art as "embodied emotion" we intend that art sets emotion *at a distance* from which it can be coolly contemplated rather than allowing it close by where it can wreak havoc. Langer's "virtual feeling" or "symbols of feeling" were devised to create incorporate this sort of distance.

An art work does not transfer the emotions of the artist to the recipient; in fact, the creator need not actually experience the feeling the work of art expresses. Nor do we "read" emotion in a work of art as we do in another human being, assessing an inner state from bodily gestures and facial expressions; we do not actually attribute inner states to non-sentient objects, Wolfflin's notion of sympathetic modeling notwithstanding. Yet, an art work does not merely present feeling as an abstraction to be intuited intellectually. We *feel* the emotional content of art as directly as we feel any of our own internal emotions, and believe that others do as well. The distinguishing mark of feeling that comes from the work of art is its attenuation; because it is not a feeling elicited by a natural context, a situation in which our lives are actually involved, the feeling, though often recognizable as related to those elicited in life situations, is far weaker. But this is precisely what the neuroscientists say it would be. The felt quality of a kinesthetic pattern that is not generated by an actual lived context is, they tell us, attenuated. Perhaps it is this attenuation that the notion of "aesthetic distance" is devised to account for.

It is also true that not every feeling elicited in response to a work of art is a familiar one, recognizable as the felt quality of lived contexts we have already experienced. This is because the kinesthetic patterns the work generates may, indeed, be new to us, responses to an entirely novel, or fresh, interpretation of experiences the artist wishes to convey. But this phenomenon, too, is fully explicable given the theories discussed above. The variety of possible patterns of kinesthetic experience is almost unimaginable; a highly original artist could certainly induce felt responses that are

entirely new to the recipient. When a kinesthetic response to a work of art is familiar, it may not be because we have actually experienced it as a response to a previously lived experience; it may be because we have experienced something very much like it in another work of art. Undoubtedly, this sort of felt linkage is what we mean when we sense a "style" connecting various works of art.

Different patterns of sound, line, color or movement represent different shades of feeling and variations of mood, and we believe, when we experience them, that these differences hold from one observer to another. The felt content in art, we believe, is, in this sense, objective. Now that neuroscience has discovered innate wiring that accounts for how we experience art, the objectivity we had guessed it is empirically confirmed.

The theories of neurophysiology examined above explain how the felt qualities of ordinary life can be abstracted or detached from their usual contexts to be re-experienced in works of art. Neuroscience accounts for why such abstracted feeling, when it is re-generated by art, is attenuated. The reversibility of perception and expression make possible the communication of feeling from one person to another, and suggests that it is also a basis for communication of feeling to a percipient subject from a *non-feeling object*, something that, itself, is not capable of intending to express or communicate feeling. The "form of a feeling" may now be understood to be a *kinesthetic pattern* that can induce specific feeling; an artist who understands such form can elicit feeling without experiencing it. An object with a specific form can communicate the correlative specific feeling.

Neuroscience demystifies the process of expressive artistic creation as Dewey aimed to do. It demonstrates that what art communicates is feeling in an attenuated form, not a mysterious "other" sort of feeling, an "aesthetic feeling." It makes clear, as well, that the way we grasp the emotional content of a work of art is not by way of some non-physical "sense" or intuition but, rather, that feeling in art arises from kinesthesia just as feeling ordinarily does. The view that art—"an" experience-- is simply ordinary natural experience whose felt qualities have been refined and intensified by a process of intelligent selection, is thus validated by recent neuroscientific research.

## A Kinesthetic Theory Of Expressive Landscape In Light Of Neuroscience

In this section, I build on Dewey's theory of art by interpreting feeling as kinesthetically-based, and apply the theory to an analysis of landscape art.

### Kinesthesia In Landscape Aesthetics

I have argued that by incorporating the empirical findings of contemporary neuroscience, the conceptual gap in Dewey's theory of expression—art as "an experience"-- is filled. Dewey's notion of "resonance" between possible elements and an initial felt impulse can be sourced back to the origin of emotion in movement and the muscular expansions and contractions that produce movement. This can be interpreted as the result of a *congruence of kinesthetic patterns* in the way both Bull and Clynes specified: "Forms of feeling" can now be understood as aspects of the body, forms of kinesthetic response.

Emotional feeling—the conscious, felt qualities we often recognize from lived contexts in which action may be called for—can now be understood as the reflexive cerebral accompaniment of behaviors involving muscle tension. But not all muscle tensions produce emotion: We walk, raise our arms and brush our teeth without experiencing such "emotional" feelings. Muscle tension, it would seem, is a necessary, but not sufficient, source of *emotional* feeling.

Neuroscience confirms that the neural processes underlying conscious feelings are perpetually active; the brain is, as Damasio puts it, "truly the body's captive audience." (150) All movement, however minute, generates a subjectively felt quality that is an integral aspect of the body's experience. Thus, there is *always* a background mood or "feel" to experience whether we notice it or not. Walking, raising an arm, brushing our teeth all do in fact come with felt qualities.

We have seen that we can attribute the felt quality of three-dimensional visual perception itself to the minute movements involved in retinal scanning which are, according to Gibson, the basis of depth perception. There is no experience of depth

without motion, and thus depth perception intrinsically carries emotional color (Cataldi 1993, 89 et seq). The perception of voluminal space, therefore, always carries with it some mood or other: I walk down a depressing street, emerge into an exhilarating open field, enter a melancholy forest. But if all perception of voluminal space carries feeling, and if all body movement carries feeling as well, what is the work of the landscape artist? Dewey's theory of how a work of art comes into being addresses this question.

Perceptual experience of voluminal space involves both the felt qualities of visual *depth* perception—feelings that are interoceptive in origin--as well as proprioceptive or kinesthetic signals picked up from the contraction and expansion of muscles that are activated to make the body parts move. These two systems, along with the vestibular system that maps the coordinates of the body in space, all produce the ambient "feel" or diffuse "mood" of a place, its *genius loci.* This initial feeling provides the impulse with which the landscape artist begins; perhaps it is the mood of depressive melancholy familiar from Mahler's *Kindertotenlieder,* or the exuberant joy of Beethoven's Ninth Symphony, or the delight and wonder of Calder's mobiles. In any case, however, a mood of a place, like feeling generally, is fundamentally a matter of kinesthesia, the complex kinesthetic patterns that the various sensory inputs induce in a visitor to a particular place.

What is given to the landscape artist as his material is always a specific place. It may be "raw" nature or a place with man-made objects already situated on it. In either case, it has specific dimensions—including a specific terrain determining the character of its third dimension, height—a specific shape, a set of climatic conditions such as temperature and humidity, rainfall—hydraulic conditions, soil conditions and specific patterns of available light. It also falls within a particular cultural context: urban, agrarian, forest, desert, seascape, mountain, and so forth.

Whatever its final use is to be, the place itself initially speaks to the artist and the artist must sense the *genius loci*, the initial *feel* of the place, or what Casey (2002), in specifying what constitutes a region, calls its "regional essence." (82) *Genius loci*, the feel or sense of a place, its "essence," can now be understood in kinesthetic terms. As landscape is a *Gesamtkunstwerk*, the *genius loci* comprises, in addition to plant and

geological features, elements that are architectural, sculptural, pictorial, and choreographic, and the artist, in attuning himself to the feel of the place, must "listen" in each of these modes. This is analogous to the painter sensing the "feel" of each of the colors on his palette, and to a musical composer sensing the "feel" of each of the musical scales, and of each of the possible rhythms and harmonies he might employ.

When the processes of addition and subtraction and of shaping finally begin, it is a matter of doing what Dewey describes: *Selecting* what is resonant with the feeling the artist has decided to express, eliminating what does not resonate with that feeling, and then shaping and adding what can enhance the feeling that is beginning to emerge. Such selection is not a simple matter of taking out some trees and leaving others standing. The ground itself must be shaped—leveled, dug out, built up, engraved with paths that move in straight lines or curves, that narrow and widen, that move up and over mounds and descend down twisting ravines and under tunnels. Plant material must be added or subtracted with consideration given to its height, its circumference and the shade it will provide, how it will create light and dark areas on the ground, and how it will appear over time and in various seasons. Hardscape—architectural and sculptural elements—must be selected and crafted with consideration given to their textures, colors, malleability, and to the way they *feel* beneath the feet.

Throughout the creative process, the landscape artist must consider the postures the walker will assume as he travels through the voluminal space, and be aware that the most responsive bodily areas for generation of feeling are situated in the neck, throat and respiratory system. The positioning of the head, chin, and neck with respect to the body's trunk is critical and can be controlled by the landscape artist to great effect. By creating distant views or elevated attractions, a landscape artist can lift the walker's gaze and posture, thereby inducing a sense of buoyancy and confidence. Ravines that cause the walker to crouch cautiously in a closed posture, assuming what Morris calls "the position of shame," (2004, 141) can close the walker emotionally and produce melancholic feelings. Alternation of postures of expansion and contraction in a variety of rhythms can stir an alternation of feelings that, in total, result in a pleasurably stimulating walk.

In light of Bull's research on postural attitude, both Burke's concept of the Sublime, and Appleton's theory of Prospect and Refuge require reconsideration. For Burke, the Sublime does not depend solely on terror to produce delight; rather, the Sublime is the terrifying set at a safe distance. The aesthetic pleasure of the Sublime derives, then, from the *contrast* of danger and safety, the playing off of terror against consolation, or what we can now understand as the rhythmic interplay of contraction and relaxation of the body's musculature.

Appleton's Prospect and Refuge theory attributes landscape's aesthetic effect to its triggering evolutionarily developed physiological mechanisms, one related to prospecting for food and the other to seeking protection from natural enemies. What we find appealing in landscape, Appleton argued, is the *alternation* of an ability to survey the land with an invulnerable sense of empowerment and control, with the possibility of seeing without being seen. Had Appleton understood landscape as a whole body experience rather than as a purely visual one, he might have connected Prospect's sense of mastery with expansion of the chest, relaxation of the shoulder blades, and increased circulation in the muscles of the limbs; he would have conceived Refuge as the body posture of huddling in a self-protective attitude in which the muscles around the neck, shoulders and back contract.

Appleton's examples of the aesthetically pleasing in landscape all contain both components, but, by neglecting the body's muscular tensions, he missed considering that the alternation of Prospect and Refuge, the *pulsation* of muscular expansion and contraction, is the paradigm of all bodily pleasure, of sexual pleasure itself. What the body experiences when it emerges from one of Olmsted's darkened, narrow ravines into a brilliantly illuminated open sweep of greensward, or when one of Capability Brown's vast lawn areas suddenly darkens into a clump of protective trees is, perhaps, analogous to the mounting tension and subsequent resolution in Wagner's *Liebestod*.

This sort of analysis places landscape art on the spectrum of all art. A discordant crescendo followed by a soft, melodic resolve is the essence of what is pleasurable in music; pulsation or dynamic tension makes contrasting colors and textures exciting in painting. One could trace the same phenomenon in the literary and dramatic arts as well:

What is often meant by "dramatic" is a contrast of opposites: Aristotle's notion of catharsis derives from the alternation of pity and terror, an extension of the self outward in pity for the protagonist, followed by retreat into the safety of the inward self, alternation of kinesthetic responses of expansion and contraction. Dance, the art most closely resembling landscape art, reached its pinnacle of emotional intensity in the works of Martha Graham who explicitly promulgated a method of dance expression based upon muscular contraction and release (Horosko 2002).

**Landscape's Uniqueness Re-visited**

Langer—and Sheets-Johnstone insofar as she relied on Langer's idea of "forms of feeling" to explain expression in dance—wanted to understand how a seen form, a material, spatial shape, acquires and, so, communicates, feeling. The notion of a "form of feeling" was an attempt to create a bridge from the spatial shape to something that is in no way spatial.

Wolfflin devised reflexive modeling of what was seen from a distance to bring the physical form of a remote object "into" the body of the perceiver, and thus effectuate a transition from visual to kinesthetic neural input. The Gestalt theorists, in another vein, speculated that there was, in fact, another *physical* event, a *brain* event, that took on the "directed tensions" of a material shape such that the electrical field could be said to be "isomorphic" to the seen shape. This attempt to find a material phenomenon to "carry" the form to the perceiving subject in a way that also transports a subjective feeling, finds some empirical support in neurophysiology but, in the end, it is difficult to make sense of the idea of isomorphic forms in the brain as it is as to make sense of Langer's "forms of feeling." Surely, there are no smooth and jagged edges in the brain, only, perhaps, a resulting sense of comfort or discomfort, inner states that are what was in need of explanation to begin with. What remains a mystery in Damasio's theory, his notion of "representation" of neural impulses in consciousness, is the mystery with which philosophy is still left after neuroscience has done its work. Damasio, it will be recalled, moved from his "first level" of unconscious movement, the reflex responses by which

the organism pursues protection and retreats from harm, to a final "third level" at which such movement is perceived or felt by a conscious self. For feeling to be perceived, however, requires that it be "represented" to a formed self. Although Damasio accounts for how that self is constructed neurally, what such re-presentation of neural material amounts to is still left unspecified. It can only be hoped that as neuroscience advances, the transition will be further elaborated; however, philosophically, this remains simply a new formulation of the old mind-body problem: We are still seeking that point where body events turn into conscious ideas and memories, where what is publicly observable turns irreducibly private. *The real challenge for neuroscience, it seems, is to fully account for consciousness in neural—bodily—terms so that "representation" of neural states to self-consciousness is understood entirely in terms of electrochemistry. This is a challenge that has not as yet been met.*

Manfred Clynes attributes the felt qualities of visual sensations to neural wiring—and to algorithms governing brain processes—that are identical across cultures, universally operative in all human beings. This, he believes, explains the *reciprocity* of perception and expression, their *contagion*. Although there is an abundance of empirical evidence for the fact that visual sensations generate universally-felt emotional feelings, Clynes did not succeed in locating the specific brain process that makes this possible; nor is his explanation more satisfying than what is offered by Arnheim and the Gestalt theorists or by Langer and other aestheticians who build expression around the idea of symbols.

Mirror neuron theory—and the solid empirical findings supporting that theory—hold great promise for grounding reciprocity and contagion—expression—in bodily processes; certainly, it suggests that expression will in fact turn out to be what Dewey supposed it to be, an entirely natural, empirically understandable, process. However, until mirror neuron theory is better established—and until it is extended to account for how non-human movements can be contagious—we must count on the suggestive ways neuroscience so far allows us to enlarge upon existing theories of aesthetic experience.

*Fortunately for a theory of landscape aesthetics, neither the failures of the philosophical aestheticians to explain how symbols work, nor the failures of*

*neuroscience to explain how mirror neurons or other underpinnings of "contagion" work, will trouble a theory of landscape aesthetics. This is because of the unique way landscape functions expressively, because in landscape, the work of art does not need to "cross a divide" between itself and the recipient.*

For a theory of landscape as expressive art, there is no need to find "congruence" or "isomorphism" between the formal properties of the work of art and the specific patterns of kinesthetic response--patterns of muscle tension throughout the body--because landscape works its kinesthetic effect directly on the perceiver/walker's body. All that is required by the landscape artist is empirical evidence of reliable, unique *correlations* between specific patterns of body shape or movement and specific subjective feelings. For, if the landscape artist creates a work knowing the felt outcome of specific body postures and forms of movement, the desired feelings can be conveyed with a substantial measure of certainty.

As the landscape artist is working *directly* upon the body of the recipient, there is no need to communicate to another, an outside spectator. Landscape need not rely on expressive body language—say, that of a dancer--to convey feeling to a recipient by way of *visual* inputs. There is no need for a "bridge" to cross from the art work to the recipient as the work works im-mediately upon the recipient's body. Although it may be argued that visual arts like sculpture or painting also "work directly" by virtue of light stimulating the receptor cells in the eye, there remains in the case of the visual arts, the "problem" of how the visual is "transformed" into the kinesthetic, how what is seen generates a kinesthetic response that can eventually be represented as feeling. Landscape's expressiveness by-passes any need for a symbol, or sympathetic modeling, or Gestalt theory's transmission of "tensions" because it begins with directly induced kinesthesia in the perceiving subject, the recipient of the work of art. Although we cannot say how kinesthetic response comes to be represented to consciousness as specific feeling, we can empirically correlate specific kinesthetic patterns with subjectively felt responses, yielding for the landscape artist a palette of forms that can be counted on to produce the desired effect.

**Shaping Bodily Movement With Landscape**

Clynes' sentograph experiments showed that contagious emotions—those manifested in bodily movement—can be distinguished by their *duration* of movement, the *angle* at which movement occurred, and the *force* of muscle contraction at various points over the duration of a movement.

> It is noted that the essentic forms as observed…have vector properties. There is a specific *angle* as well as *magnitude* of the pressure as a function of *time*. …Anger has outward components of pressure ...Reverence is slightly outward…. (1975, 573)

Clynes classified emotions, much as de Rivera did, as "positive--strongly away from the body" or "negative—infolding toward the body" or "only slightly outward." He found love, for example, to be manifested as a slight muscular expansion outward, hate and anger to manifest as strongly pressing outward from the body. Measures of duration and force indicate the suddenness or relative extendedness in the development of an emotion.

For the landscape artist, Clynes' sentographs suggest that emotions experienced as sudden bursts—such as joy, triumph, delight, disappointment—correspond to sudden alterations in muscle expansion or contraction, whereas the "softer" emotions, those that build more gently, such as melancholy, happiness, and sorrow—can be elicited by landscape features that move the body—particularly the upper body—more gradually.

Clynes' finding that muscular contractions and expansions throughout the entire body follow invariant patterns for a given emotion is important for the landscape artist who has the capacity to structure the landscape walk so as to affect both the upper and lower body, to move muscles throughout the body. His findings about contradictory emotions suggests that all regions of the body should be moved similarly to create a strong feeling, not confusion or ambiguity.

Actual experimentation in the creation of landscapes will reveal more as landscape artists become increasingly aware of the possibilities of using all the features of voluminal space to elicit feelings and moods by altering postural attitudes and varying forms of locomotion. At this point, both Bull's and Clynes' conclusions are powerfully suggestive as to what can be accomplished by attending to the speed with which bodily postures alter, the direction—toward or away from the body—in which the body is directed to move, and the force the walker must exert to move as the landscape form dictates. As landscape becomes increasingly recognized as a kinesthetic art form, it is to be expected that landscape artists will experiment more freely with kinesthesia's emotional possibilities and discover and create more "moving" landscape experiences.

## Limitations On Landscape Art's Expressivity

Having demonstrated how landscape conveys feeling and how traditional theories of aesthetics can be adapted to apply to the kinesthetic art of landscape, it remains to consider what limits or restrictions there are on landscape's expressivity. Landscape art cannot convey every sort of feeling. The body movements involved in a landscape walk are not those that normally generate the most intensely felt responses; a landscape can affect the most kinesthetically sensitive regions of the body only if the landscape artist attends carefully to the physiology of felt response. Further, it can be reasonably argued that landscape does not generate feeling itself so much as it creates felt *moods.* Landscape artists generally limit themselves to generating positive, rather than negative, moods, although negative moods can be employed for rhythmic purposes. Finally, landscape art is a non-narrative art that supplies little or no context to be intellectually evaluated and then responded to; instead, landscape art arrives in the recipient walker most often as pure kinesthesia, a fact that restricts the expressive range of the art form.

**Upper Body, Lower Limbs: Susceptibility to Kinesthetic Response**

Although the landscape artist must be concerned with the feelings walked paths produce in the feet, ankles, knees and hips of the work's recipients, it is true that the research on emotion locates the most keenly felt emotion in the neck, throat, chest and respiratory system, the upper body region that the landscape artist most effectively manipulates by directing *postures*. The artist must therefore consider ways the work's walked paths affect the walker's upper body. Visual enticements that direct attention up and down, and that alter the walker's postural attitudes as he moves produce powerful kinesthetic responses.

The path trod by the feet creates varying needs to exert effort, to maintain balance, and to preserve a sense of orientation. The artist can affect feelings by disrupting the walker's sense of balance or orientation, or by demanding increased effort. These effects naturally affect breathing and produce contraction and expansions throughout the body, movements that ultimately affect the more emotionally sensitive upper body regions.

As was noted in Chapter Four, walking is also a naturally *rhythmic* activity, one that induces sympathetic rhythms in the cardiac and respiratory systems. The landscape artist must, therefore, consider not only visual rhythms in the patterns of colors and shapes, light and shade, open and closed spaces, but also the way he structures the walking rhythm itself, much as Beatrix Farrand did in creating the gardens at Dumbarton Oaks.

**Feelings vs. Moods**

Lazarus (1980) distinguished emotions from *moods,* which he understood to be generated as emotions are, but which he defined as longer lasting, less intense and more diffuse than emotion episodes. Although landscape alters as the walker progresses, and the felt quality of the walking experience changes along with it, a particular feeling generally endures for as long as a particular part of the landscape is experienced. In fact,

one “part” of a landscape may very well be distinguished from another according to where a change in *mood* is experienced.

As was noted above, Damasio, too, distinguished a class of milder, more enduring feelings--“background” states such as “edginess,” “tenseness,” “discouragement,” “enthusiasm,” “down-ness,” and “cheerfulness”-- which he attributed to body postures that could be *sustained* over longer periods of time than those associated with other, more sharply defined, attitudes. These states arise from more enduring postures, slower speeds of movement, and contours of movement that can be maintained over time. (See, also, Clynes, 1975 and 1980) These affects, he suggests, are ordinarily read by others as indicative of sustained “moods” rather than as more episodic “emotional states.”

There is good reason to argue that landscape art induces moods rather than feelings. The walker, in traveling through a landscape, often sustains his posture and the speed and contour of his body movements over a considerable duration, maintaining essentially the same posture, speed and general shape of movement across, say, an entire region of a park. The immediate response to a brightly-lit open expanse such as one experiences in the Sheep Meadow of Olmsted’s Central Park, initially induces a burst of enthusiasm or exhilaration; as one continues a walk through it, however, the feeling attenuates to what Damasio might term “cheerfulness.” Similarly, a walk through an extended stretch of deep forest may begin with a sharp pang of sadness but, in the course of the walk, the feeling may turn into a softer feeling of melancholy. To the walker, these distinct tempos and body postures—distinct kinesthetic inputs—signal the transition between two different regions of the landscape. (See, also, Casey, 2002, 74-91, on “regions.”)

A walk through a landscape cannot provide the instantaneous stimulation of a painting or sculptural work, or a dance performance in which movement alters rapidly. As a sustained activity that moves the recipient gradually from one space to another, it more closely resembles a symphony of several movements, each with is own sustained and somewhat attenuated emotional quality—its enduring kinesthetic response-- its mood.

**Positive Feelings vs. Negative Feelings**

Among other researchers in his field, Lazarus alone (1980) emphasized that emotions can be "positive" as well as "negative," and focused on affect generated by muscle *expansions* that generate such feelings as triumph, love, exhilaration, hopefulness, relief, peacefulness and joy. Such positive feelings, Lazarus argued, serve evolutionary functions as important to the organism as the negative emotions that withdraw the organism from danger. Positive emotions serve as mobilizers for survival. They are activated when the organism explores, plays or displays curiosity. (204). Positively-toned emotion, Lazarus argued, enhances subsequent efforts required by long-range commitments and goals; it can stimulate or inspire the effort necessary to turn toward another task, and eases coping with stressful situations. It is likely, therefore, that positively-toned emotions evolved alongside avoidance emotions, forming one end of the spectrum of bi-modal response

Landscape art intends mostly such positive feeling as it aims at pleasurable experience, the sort that will inspire in the walker feelings of affection and care for the surrounding world. To that end bodily postures and movements that expand, rather than contract, muscles in the neck, chest and respiratory system predominate over "negative" emotions. These latter are generated in landscape most often to create punctuation or rhythm by alternating downcast, "contractive" feelings with open-body optimistic, exhilarating ones.

**Narrative vs. Non-Narrative Art Forms**

Clynes noted in the course of his research that not all emotions are what he called "contagious." (1980, 272-74) Some emotions can be accurately conveyed by way of expressive body movement and posture to other organisms that are similarly constructed; other emotions cannot. Conversely, Clynes found, the reversibility he discovered in contagious emotions—their ability to generate feeling when experienced in a generalized or "detached" state—does *not* obtain for non-contagious emotions. Only

felt qualities inherently linked with the motor system can be communicated reflexively. The feelings landscape art can induce in the walker fall into a distinct subset of emotional response, "contagious" emotion.

Clynes found that the non-contagious emotions, those that cannot be communicated by body language and also cannot be generated by posture and movement, are those involving detailed cognitive content. Emotions generated by a cognitive state—responses to evaluation of a context—therefore, cannot ordinarily be expressed in dance or music, nor can they be generated by landscape art.

Clynes thus resolved the dispute between the biological evolutionists, like James, and the cognitivists, like Cannon, as to whether emotion is reflexive or cognitive as follows: Some emotions are reflexive body responses to a purely sensed situation and others involve, as well, evaluations that include verbal, conceptual, information. Although unconscious internal movement is the way overt behavior gets started, not all initial movement is displayed overtly. It turns out, Clynes discovered, that kinesthetic responses arising from cognitive input are more easily "kept to oneself." It follows that such responses cannot be contagious, cannot be conveyed automatically to others.

The distinction between contagious and non-contagious emotions parallels a familiar aesthetic distinction between the narrative and the non-narrative arts. We have seen that emotion is a complex affair that may include 1)an intentional object--an idea or belief about the external world, 2) an impulse to take action with respect to it, and 3) a linked feeling or tone--*all* of which may occur together *after* an initial reflexive body response. Narrative art, which provides a context--a cognitive belief about some fact--and suggests an action or inaction that is appropriate in that context can generate a full-fledged emotion, a felt response to a recognized and evaluated context. Non-narrative, non-representational art, on the other hand, lacks an object or context and so is limited in what it can convey.

Music and other non-narrative art forms, can convey feelings of sadness or dejection, buoyant joy or elation, triumph, anxiety, yearning, anger or even rage, but, unless there is also a concrete narrative reference—as there is in the sung text of an opera—non-narrative forms cannot express hope, jealousy or envy-- emotions that are

responses to some belief about the circumstances at hand. A distinction should be made, therefore, between what non-narrative art can convey or embody-- felt tone or mood—and the cognitive component of some emotions that can be supplied by narrative. Non-narrative art relies entirely on the felt quality of pure kinesthesia.

> You wake up feeling sad or depressed without knowing why… Later, if you remember that you are sad because of the loss of a friend, the vague mood is replaced by a more precise emotion of grief. It is the mood that is expressible in the abstract arts, not the emotion. (Osborne 1982, 25)

The attenuated, "detached" feelings created by landscape art's direct manipulation of the walker's body can, at best, create those vague, formless states of being that some, like Osborne, prefer to term "mood." The sense of buoyancy or serenity we experience in an open savannah, and the sense of melancholy, dread or anxiety we experience in a darkened ravine, the exhilaration or sense of triumph we experience when emerging from a narrow, dark space into an open, brightly lit one, are without context but do, as Clynes noted, attract to themselves fantasies and memories that are locked into similar feelings or moods.

However, the landscape artist can create a sense of Nature as reflective of the most intimate human feelings, a state we understand as "communing with Nature." As Marc Treib put it:

> We cannot make (a) place mean, but we can… instigate reactions to the place that will fall within the desired confines of happiness, gloom, joy, contemplation or delight. (1995, 64)

Landscape art is, for the reasons described here, limited in what it can express. Direct manipulation of the walker's body allows the landscape artist to reliably generate feeling, but attenuated feeling, the "feel" of an emotion detached from its real-life context. The felt tone of what landscape can produce is limited to feelings that can arise without narrative context, feelings generated as sheer bodily kinesthesia.

As these mood qualities lack narrative context, it is easy for the walker to attribute them to the landscape itself as their source. The walker may come to

understand the surroundings through which he travels as the cause of his buoyancy, his melancholy, the excitement of pulsating, alternating feelings of bodily expansion and contraction. Landscape art may thus acquire a significant ethical function: One who experiences Nature as the source of human feeling may come to understand Nature as a friend, something to be concerned
about and tenderly cared for.

## Landscape Art Is Fully An Expressive Art Form

Arguments that are made about architecture—that it depends too much upon engineering considerations to be a fully expressive art form, for example—have also been raised about landscape art. It is also contended, particularly by the Environmental Aestheticians, that landscape lacks "an art history," or that it lacks the reasoned critical narrative of "an artworld." For these reasons, landscape is often considered solely a matter of design or ornament, a creation aimed at a sense of rightness, but one that lacks the characteristics of a truly expressive art form.

I have demonstrated that landscape not only conveys feeling, but that an artist in possession of an understanding of how landscape functions can, in fact, create significantly expressive landscapes. In this section, I rebut some of the arguments made to the effect that landscape, by its very nature, lacks the capacity to function expressively as other, truly "fine," arts do.

### Arguments Concerning Landscape Art's Materials

The argument has been made that landscape art, like architecture, can not function as an expressive or fine art because, like architecture, it is too bulky and ponderous to yield to artistic intention. (See, e.g. Scruton, 1979) Engineering problems abound; drainage, climate, soil conditions all impede artistic expression. Plants have demands of their own that have nothing to do with art. Finally, there are external

demands imposed by the locality, rules governing setbacks, water use, paving materials, lighting, and tree clearance. Given such restrictions, it is claimed, a landscape artist, like an architect, is lucky to find a design that merely looks "right."

Scruton argued, as well, that architecture lacks any true artistic autonomy because it is burdened by the enormous cost of building; what is built must be built to last. Architecture aesthetics, Scruton concludes, is "simply one application of that sense of what 'fits'"(17); in practice it is a series of exercises in problem-solving to arrive at solutions that efficiently adapt form to function (25). The most architecture can hope to express under such restrictive conditions is an abstract "sense of appropriateness." (33).

This view of architecture as expressively restricted by the ponderousness of its own materials goes back to Hegel's view that architecture is an essentially primitive art form, suitable only for expressing the most abstract iteration of the Idea. Like architecture, landscape art is large, and requires the skills of many to bring its forms to life.

No one doubts that landscape is fraught with restrictions that reside both in the nature of land itself and in external constraints on the use of land, but landscape certainly presents fewer engineering concerns than architecture, and allows a much freer play of imagination. Land itself is often far more malleable than the materials of architecture, more malleable, even, than some of the materials employed by sculptors. A dance choreographer, too, must contend with the natural limitations of the human body and with the effects of gravity on it; yet dance, surely, functions expressively.

Another argument Scruton makes in support of his position on architecture is that a building is

> … a public object, to be looked at, lived in, and walked past at all times, in all conditions and in all humors. The observer is not normally putting himself in a special frame of mind when he passes or even when he enters a building, nor does he regard it, as he might a book, a painting or a sculpture, as an object of private and personal attention. (189)

Architecture must be more reserved and less 'in your face" (189) than expressive art, Scruton claims, because we are so unavoidably and overwhelmingly exposed to it.

Buildings are both so publicly placed and so large that they "button-hole" (189) us in the public moments of our lives. This point is less about public life, however, than about restrictions on the way we experience architecture; we always enter a building the same way, from the same aspect, viewing it usually from the same set of perspectives so that its emotional feel can soon become tedious. Yet, Scruton would surely not want to say that we do not ever view architecture as art, and enjoy it for the pure pleasure of attending to it.

This argument, however, does not extend to landscape art. We can choose different paths each time we move through a landscape; landscape surrounds us, so we can discover different expressive content simply by turning our heads, and landscape contains such variety that it can appear to be constantly saying something new. Nor are we ever forced to experience a landscape work the way Scruton seems to think we are compelled to experience architecture in our daily lives. Gardens and parks are distinct situations we choose to experience in moments of leisure; we expect to find them fit for leisurely contemplation. A park, though public, is chosen as a visit to an art gallery is, for the relief it affords from the tempo of our workaday lives. The public-ness of a park does not restrict it to expressing a mere sense of appropriateness, nor does it demand reserved, muted abstraction that is intentionally devoid of emotional expression.

It is also sometimes argued against landscape's capacity for expressiveness that the materials—plants, soil, rocks, fences—employed in landscape are too impermanent and changeable to permit reliable expression. Landscape's materials are, on this view, out of the control of the artist and this prevents a landscape from reliably expressing the artist's intent (Rose, 1938). Yet, anyone who has walked through Central Park in every season over many decades knows that it has retained its expressive character. The changeableness of landscape materials is simply another challenge of the art form. A particular performance of a musical work is certainly not entirely under the control of the composer; a choreographed work differs as it is danced by first one dancer, then another, and this is not only a difference of interpretation but also a difference due to the different body sizes, shapes and capabilities of the dancers.

Landscape can remain the expressive work of the artist if the artist draws up specific enough plans and if those plans are adhered to in construction and referred to over the life of the work by those responsible for maintaining it. Landscapes that are permitted to revert to their unformed natural state lose their expressive form just as paintings do when they are allowed to oxidize over time. Art is one thing, art maintenance another. Neither the nature of landscape's materials nor the complexity of its circumstances need prevent a landscape from retaining its intended expressiveness.

**Landscape Art Possesses "An Artworld" and "An Art History"**

Since Arthur Danto's curiosity was first aroused by Andy Warhol's *Brillo Box* in 1964, aestheticians have considered art as requiring what Danto terms 'an artworld' (Danto 1964). If we are to accept landscape as art, then, landscape should be understandable within the context of its own artworld, an historical tradition to which and within which it constitutes an intentional response. Further, it has been argued by the Environmental Aestheticians, (See, e.g., Bourassa 1991), that landscape is not art in Jerome Stolnitz's sense of "the Art of Art History" (1960) because they wanted to extend aesthetics to the wild natural landscape. However, when consideration is restricted, as it is here, to deliberately-structured, *expressive,* landscape, landscape art can certainly be found to possess both the sort of artworld Danto described, as well as an historical narrative that creates that artworld.

Upon first viewing *Brillo Box* at the Stable Gallery in New York, Danto, who was not then a member of the "artworld," was struck with the philosophical significance of what Warhol had done; he believed that *Brillo Box* signaled the moment when the long history of Western art terminated and turned, as Hegel had predicted, to philosophy. Amid the uproar over whether Warhol was defrauding the art public, Danto believed he understood why Warhol's work was art.

> To see something as art requires something the eye cannot descry—an atmosphere of artistic theory, a knowledge of the history of art: an art world. (1992, 38)

Danto's essays, "The Art World" (1964) and "The Art World Revisited" (1992) provide an argument for according landscape art the status of art along with the sort of works Danto was considering.

Not everything a recognized elite of historians and critics calls art is, for that reason alone, art. Members of the artworld, Danto insisted, must adduce *reasons* for what they say. The historical discourse that preceded *Brillo Box* was, Danto claimed, a discourse of reasons, and the work supplied a logical next step in it. As Danto put it, "…the discourse of reasons is what confers the status of art on what would otherwise be mere things …" (1992, 40) The critic sees something *as* art and, by way of interpreting it, gives his reasons why. A critical interpretation thus places a work within an ongoing historical narrative that provides the critic with objective grounds; his determination is not mere subjective opinion.

> To be an artist in this art world is in effect to take a position on the past, and inevitably on one's contemporaries whose position on the past differs from one's own. One's work is therefore tacitly a criticism of what went before and what comes after. … (T)o understand a work requires reconstruction of the historical and critical perception which motivated it. (1992, 46-47)

Landscape art possesses just such a reasoned critical history. To interpret the English Landscape Garden, the critic must see it as the critique—and rejection—it most certainly was of all that had preceded it on the Continent. To one not so informed, the relatively unstructured landscape might suggest an absence of artistic intent analogous to a grocery store Brillo box. To pronounce the English Landscape Garden *a* landscape is to interpret it within the ongoing discourse of reasons adduced at the historical moment it emerged, which is to admit it to the landscape artworld.

One conversant with the contemporaneous debate about man's relationship with nature, and with the larger, underlying debate about the nature of man--the debate between English Empiricism and Continental Rationalism--will grasp what was being expressed by the English Landscape Garden and so will interpret it as art. But the question here is not which examples of landscape qualify as art, but rather the prior

question of whether there exists a coherent continuing historical narrative, an artworld that provides a context for interpreting and critiquing landscape works.

Until Giorgio Vasari published his book on the lives of the artists, it is reasonable to say that there was no art (Danto 1984). No notion of expression figured in the production of devotional images which played a very different role in human lives than did the art that emerged in the 15th century. The history of Western Art, then, is a narrative that begins around 1400 A.D., a story with a beginning and a middle and, to hear Hans Belting and Arthur Danto tell it, an end that occurred in the 1960's (Danto 1984 and 1997). As the narrative is related in histories and museums of Western art, it is a story of progress in man's efforts accurately to represent the natural world. In this narrative, Alberti's invention of the rules of perspective, the advent of technical refinements in materials and in perceptual aids such as the projector, the lens, and, finally, the photograph are all momentous events. As the narrative nears its end, it takes a series of wild, almost irresponsible, swerves and turns in which artists attempt to represent first a subjective view of the natural world, recording their mere impressions of it, and then, abandoning all obligation to the natural world, turn to representing the quirky hallucinations and aspirations of the inner world itself. Just when the audience to this narrative begins to despair of ever again finding the natural world in artistic representations, artists insist there is no objective reality. At this point, Danto argues, we know that the narrative has finally reached an end; painters no longer care to participate in the narrative, have abandoned any wish to be part of history, and prefer to work in an a-historical world in which the narrative of art—and so, art itself—has ended (1984).

The long history of landscape art is an even older narrative. It is the story of Man's efforts, not to *represent* the natural world, but to *order and dominate* it, to impose upon the wild, obstinate natural landscape a structure that symbolizes the human capacity to bend nature to serve Man's moral and aesthetic needs. Norman Newton (1971) opened his historical narrative of landscape art by announcing his intention to focus on "works whose actual form suggests their having influenced the landscape architecture of succeeding centuries…." (1)

His starting point was  the landscape surrounding the mortuary temple of Queen Hatshepsut at Deir-el-Bahri (Figure 14) in Egypt where, 1500 years before the Common Era, it is evident that the primary concern is to bind off the endless sweep of imponderable desert, utilizing a linear arrangement that seems almost viscerally to demand that the funeral processional pass through the midpoint between the two sides to create the bilateral symmetry that characterized Western landscape for millennia to follow.

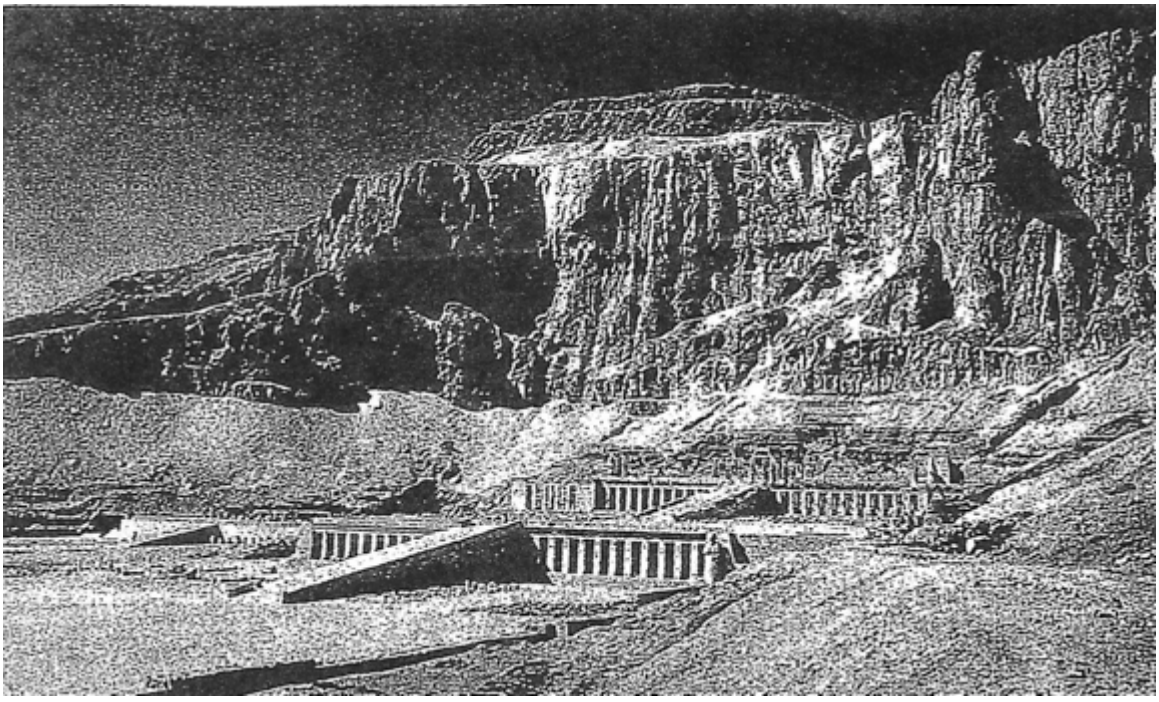

Figure 14: Temple of Queen Hatshepsut at Deir-el-Bahri. Norman T. Newton, *Design on the land: the development of landscape architecture,* Cambridge, 1971, 2.

The powerfully organizing effect of rectilinear boundaries and of a central sightline set a course in which human reason was placed in a dominant, mastering, position to order an endless, inchoate universe that had to be confronted without benefit of compass, clock or map. There can be no more powerful symbol of man's conquering ambitions than the imposition of this particular form on the land, reflecting, as it does

the bi-lateral symmetry topped by a "head" that is the form of a human body. So it is not surprising to find this plan repeated in the layouts of cities and towns, and even homes, throughout Ancient Greece and Rome (Figure 15).

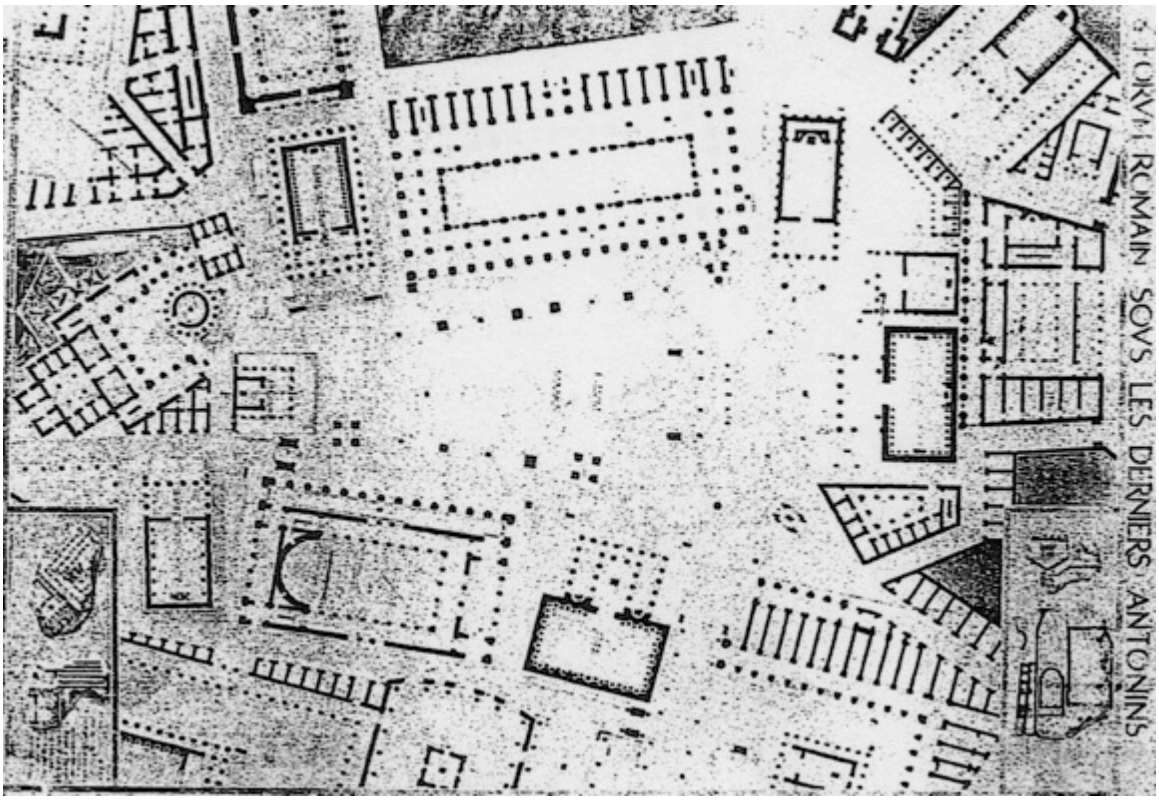


Figure 15: Site plan of the Forum Romanum: A restoration. Norman T. Newton, *Design On The Land: The Development of Landscape Architecture,* Cambridge, 1971, 14.

While Europe confined itself to indoor living through most of the Middle Ages, Moorish Spain and the rest of the Islamic world enjoyed outdoor gardens that were also rigidly squared off and organized bi-laterally along severely prominent central axes. In these landscapes, this structuring creates a sense of security and peaceful harmony in the relationship between Man and Nature. (Figure 16)

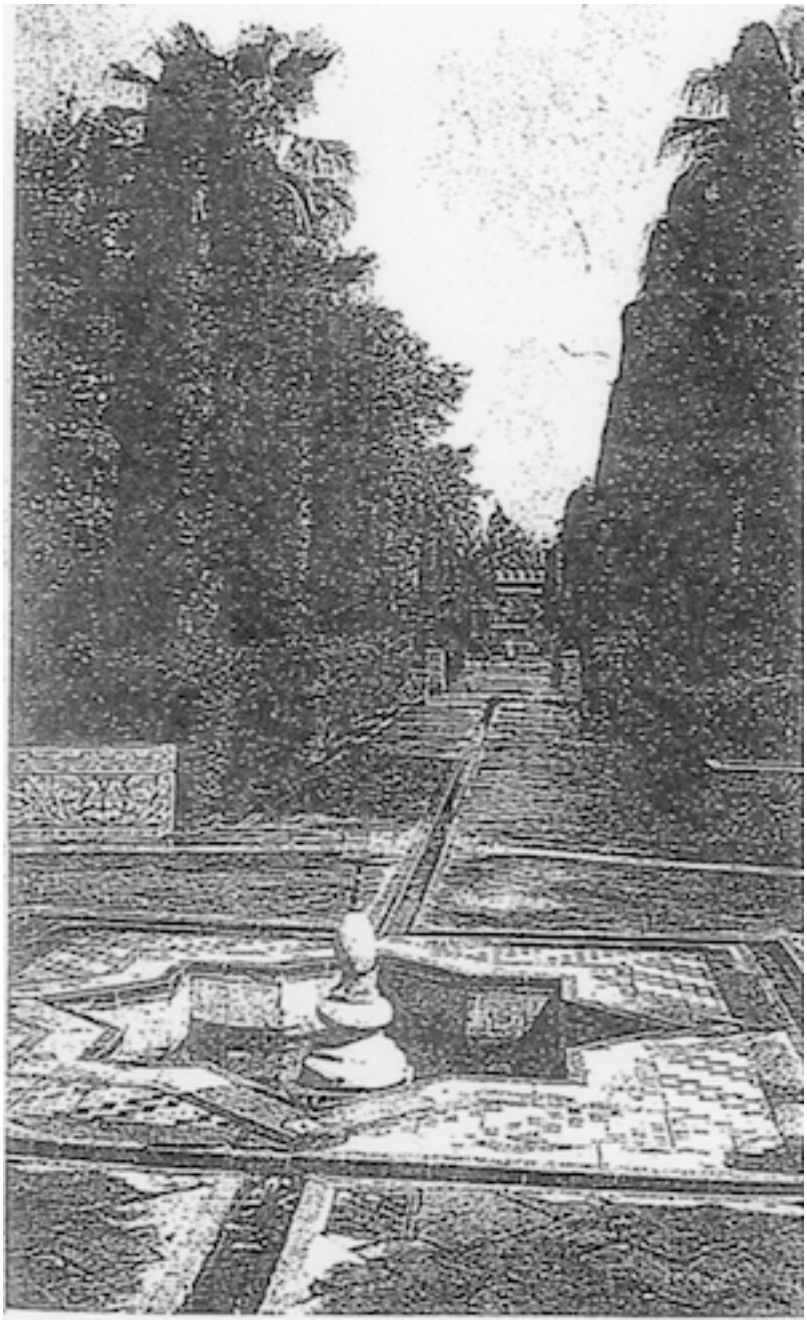

Figure 16: Alcazar gardens. Norman T. Newton, *Design On The Land: The Development of Landscape Architecture,* Cambridge, 1971, 39.

Although the builders of Tuscan villas had a far more challenging natural terrain to contend with, they, too expressed a sense of Man's dominion with rectilinear, centrally bisected, landscapes. From the Quattrocento Villa Medici at Fiesole (Figure 17), to Bramante's Belvedere at the Vatican that began the Cinquecento (Figure 18), to the Villas of the mid-Cinquecento, a bilateral, rectilinear arrangement prevailed.

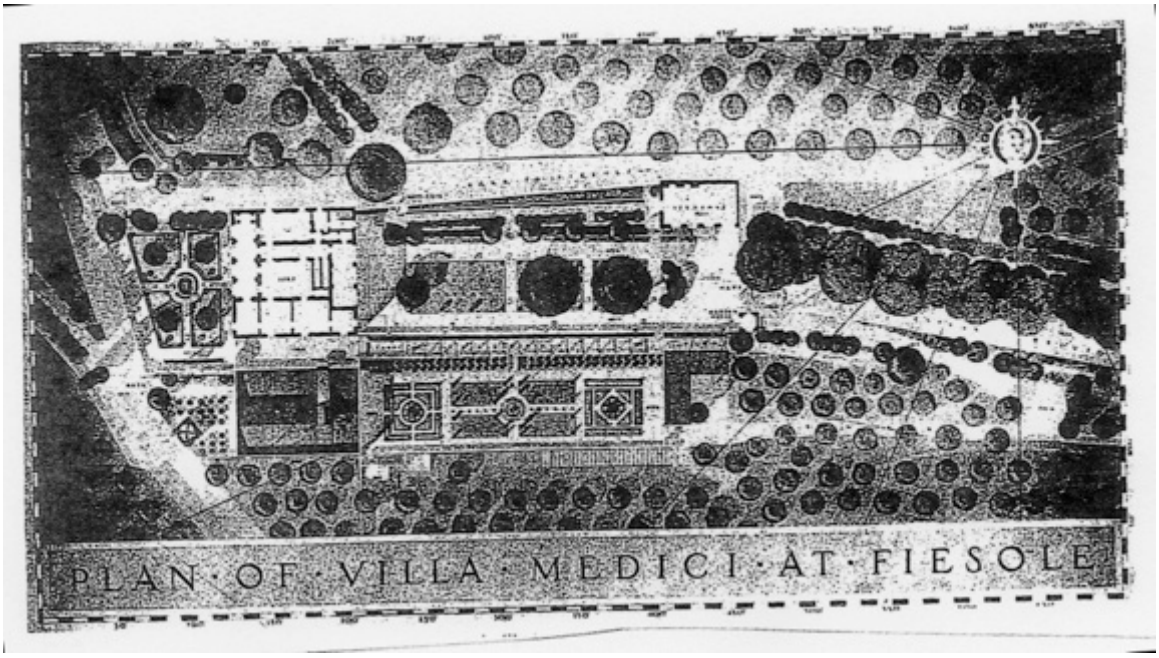


Figure 17: Plan of Villa Medici at Fiesole. Norman T. Newton, *Design On The Land: The Development of Landscape Architecture,* Cambridge, 1971, 60

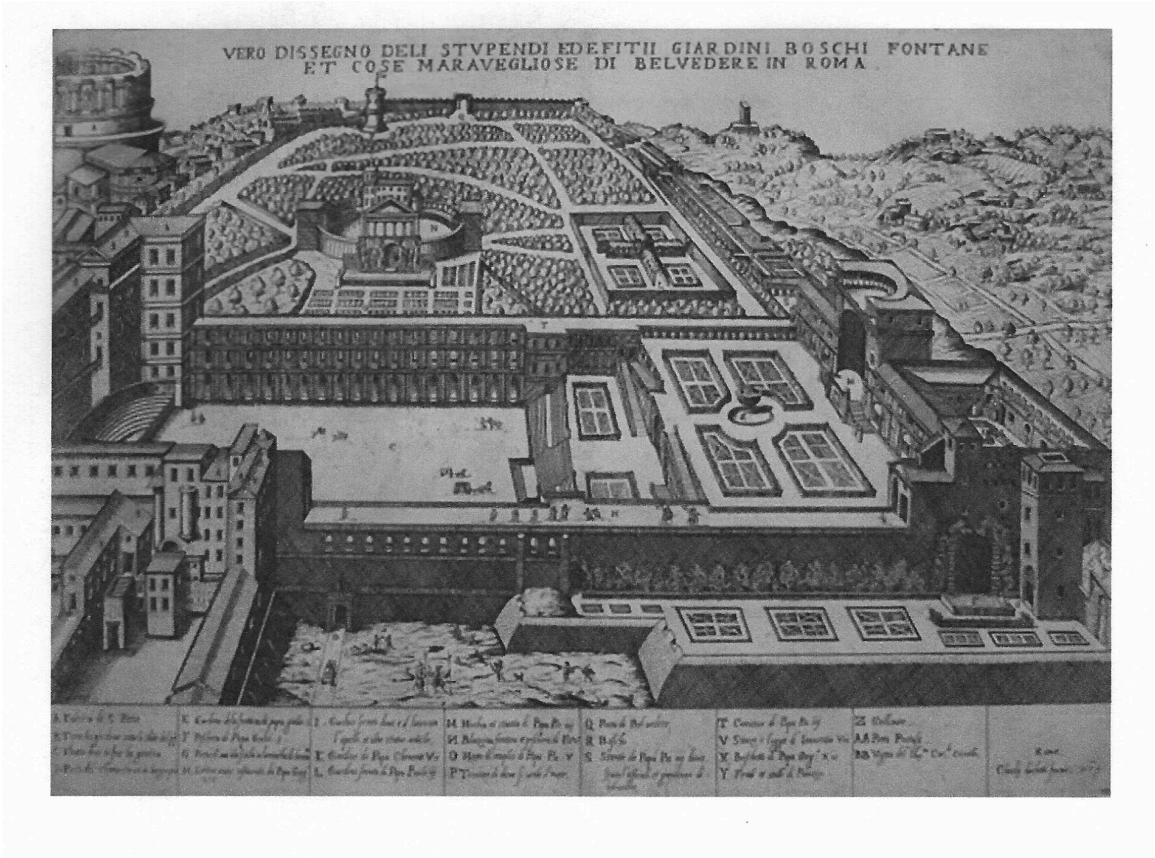


Figure 18: Plan of Bramante's extension of garden landscape from the Vatican to the Belvedere. Norman T. Newton, *Design On The Land: The Development of Landscape Architecture,* Cambridge, 1971, 68.

The Western narrative continued in the seventeenth century with the ascendancy of France as the center of landscape innovation. In the works of LeNotre at Vaux-le-Vicomte and Versailles, the French insistence on strong geometry reached its apogee. LeNotre's work evidences not only the taming of nature, but the glorious triumph of Reason over the natural world. Descartes' elevation of geometry to the position it held in Ancient Greece as the paradigm of Reason played out not only in the arrangement of paths through the landscapes but, on a smaller scale, in the complex *broderies* that provided characteristic color to the French ideal. (See, Casey, 1993, 158-161) The French fascination with the way geometry developed into quantitative physics, especially optics, is worked into the landscape with playful optical illusions (Hazlehurst, 1980). The sense of power with which mathematical science endowed seventeenth

century Europe reached almost comic exaggeration in Versailles (Figure 19) and suggested that this style of landscape art, along with the delirious sense of triumph that engendered it, might be about to deflate.

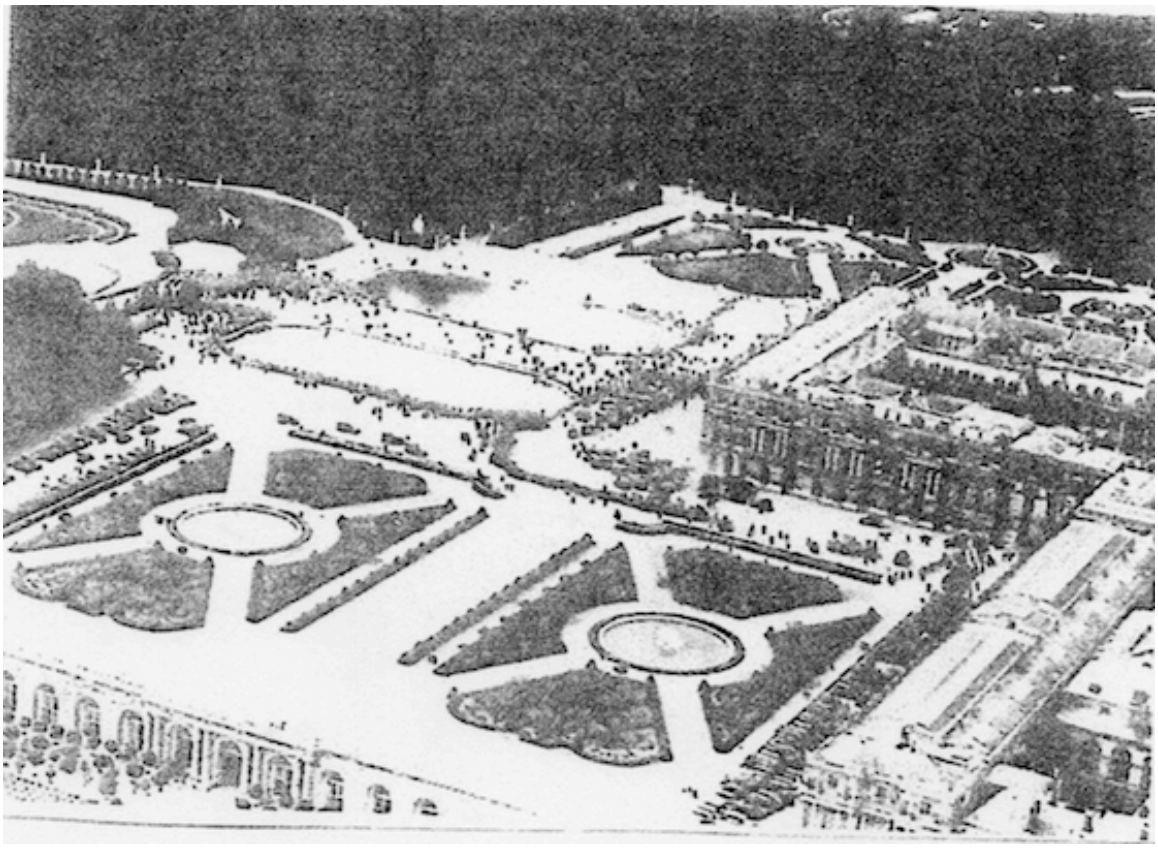

Figure 19: The Parterre du Midi, Parterre d'Eau and Parterre du Nord at Versailles. Norman T. Newton, *Design On The Land: The Development of Landscape Architecture,* Cambridge, 1971, 176.

The narrative did, in fact, turn with a dramatic reversal: the utter rejection of geometry and optics by the English, and the emergence of a wholly new landscape art form that restored natural-looking lines and natural, indigenous plants to the garden. (Figure 20).

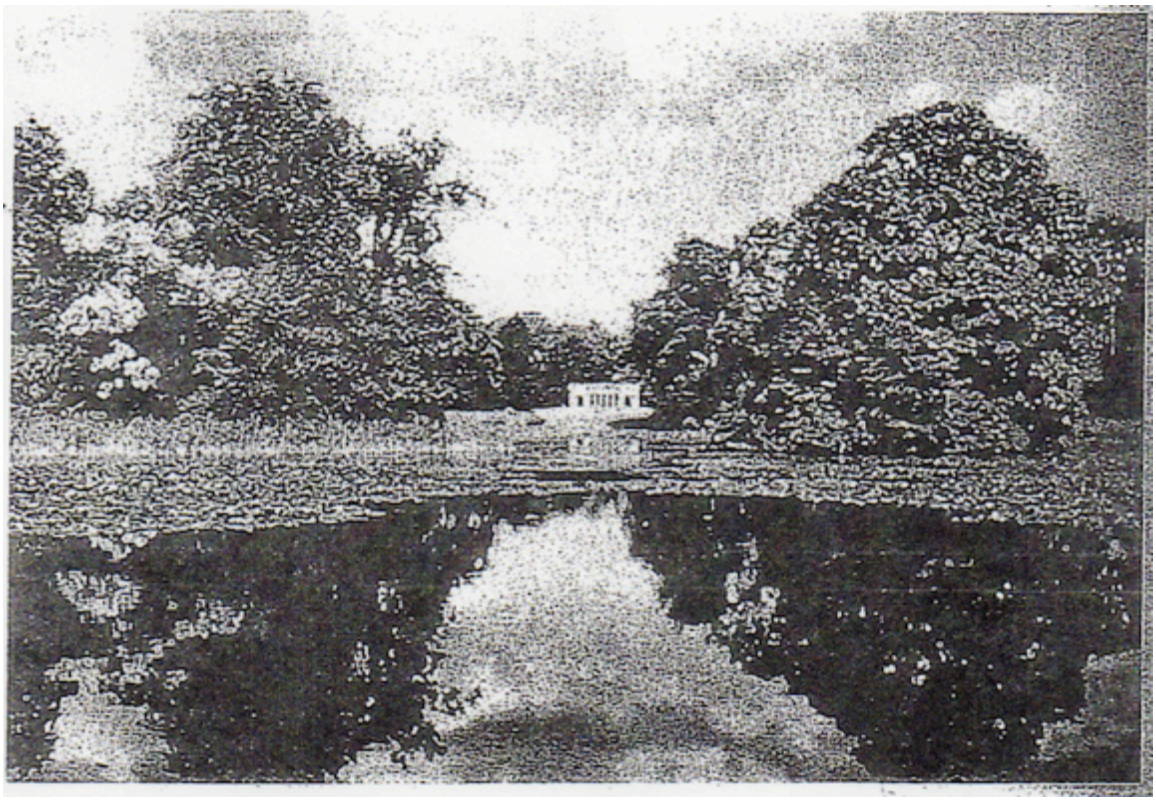

Figure 20: Waterside scene at Stowe. Norman T. Newton, *Design On The Land: The Development of Landscape Architecture,* Cambridge, 1971, 212.

That this was a fully-conscious, deliberate artistic development on a par with the emergence of Impressionism out of classical representational painting is evident in the storm of vitriolic debate that surrounded the advent of this new style, and the welter of instructional manuals produced in furtherance of the new Landscape Gardening idea. If ever there was a "movement" in art, it was the English Landscape Gardening movement which equaled anything known in the world of painting or sculpture for its fervor, and which engulfed an entire nation, from royalty to the smallest cottage tenant. What was at stake in the English rejection of the continental style was nothing less than a concept of the nature of Man and of Man's relationship with wild, disorderly Nature. English landscape deliberately relinquished the notion of a dominating, mastering human Reason by which Man opposed and subdued Nature, in favor of a reverence for a "reality" that exists independent of Man and often in powerful opposition to him.

In the twentieth century, Modernism in architecture brought about another reversal in landscape art which moved it back, dialectically, toward Rationalist geometries as the relationship between Man and Nature resumed favoring Man's dominance, this time in partnership with technology, the forms of which were echoed in the rigid patterns that landscape artists employed. (Figures 21 and 22).

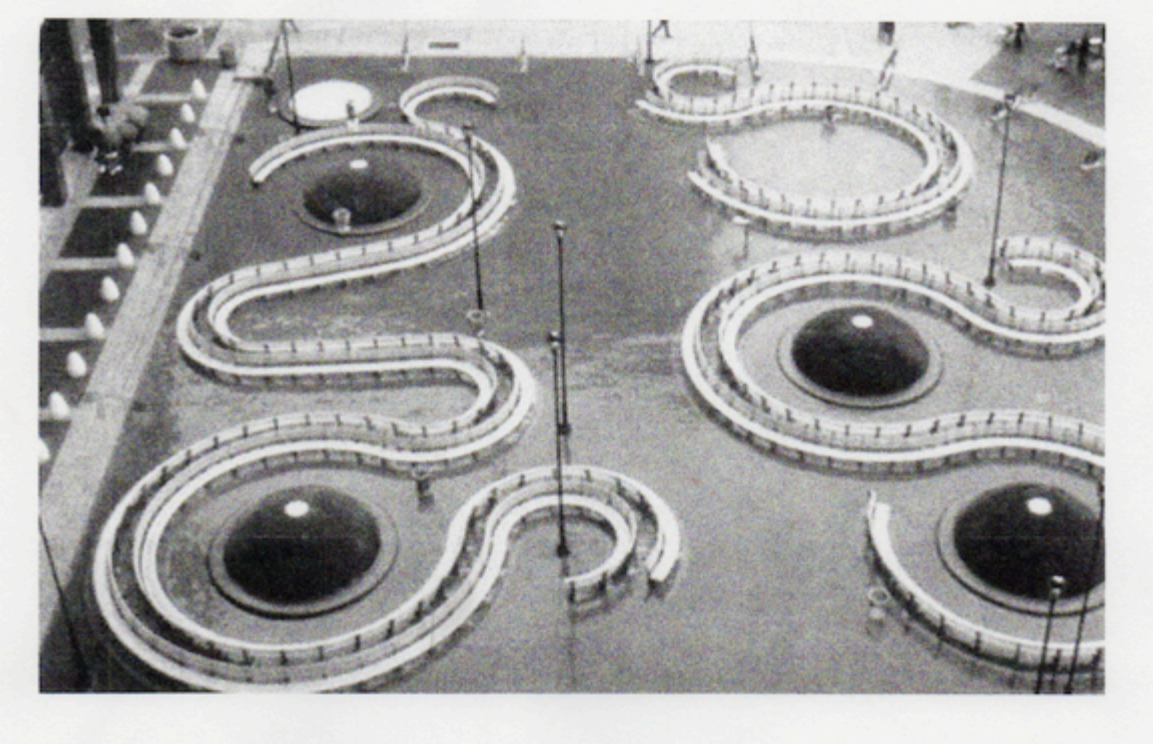

Figure 21. Jacob Javits Plaza, New York City, design by Martha Schwartz. http://www.lamar.colostate.edu/-bradleyg/student120.html

The sleek, powerful-looking buildings made possible by newly developed materials and new construction technologies forced landscape into a subservient position as embellishment, ornament that must enhance the central architectural object, taking its stylistic cues from the aesthetic decisions of the architect. These modernist landscapes followed modern architecture all over the globe, driving out regional indigenous styles and reinforcing the notion of a master discourse initially set up by modernist architecture.

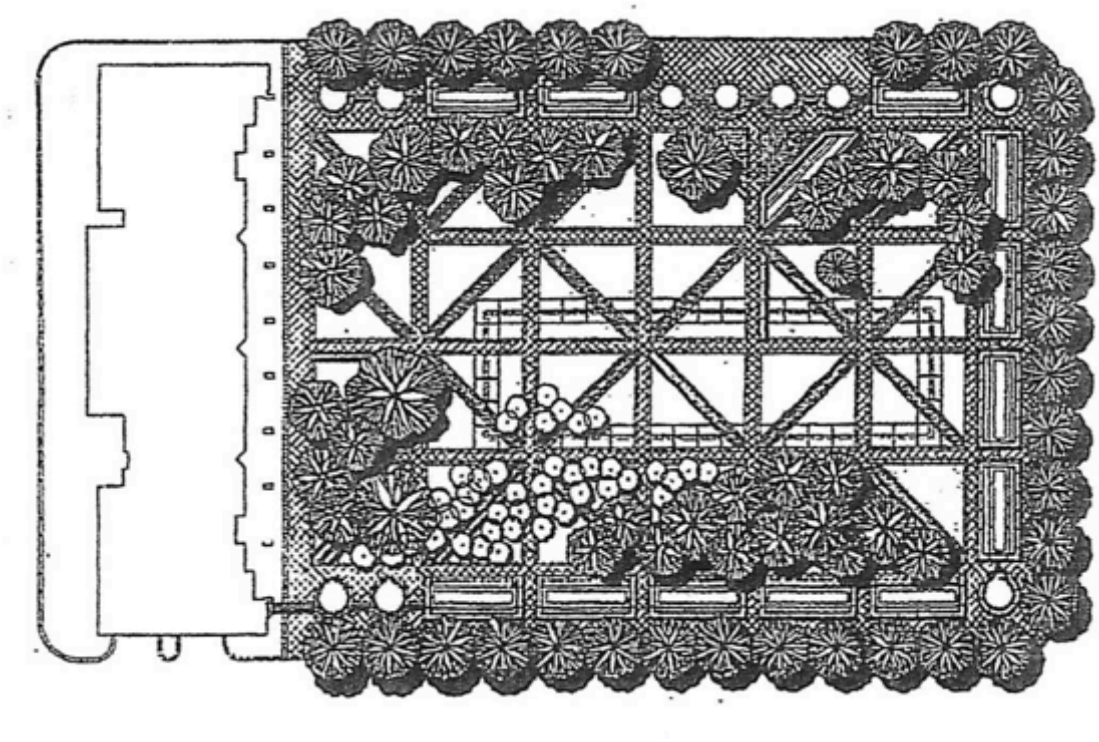

Figure 22: Modernist geometry in Burnett Park, Fort Worth, Texas, by Peter Walker/ The SWA Group. Marc Treib, *Representing Landscape Architecture,* 2008, 117.

Postmodern landscapes incorporate an eclectic mix of strongly structured and much looser, more natural, forms as landscape art embraced all previous traditions and so none at all. In this worldview, Man is quietly and respectfully present in the landscape but reveres Nature in its original forms. Postmodern landscapes take into account environmental concerns, and direct Man to accept and care for Nature. Regional, indigenous styles appear in a mix that is often so homogenous that no particular style is discernible, or so that the actual landscape work is obscured by blending in with the natural surround. (Figure 23)

Figure 23. Postmodern landscape design by Ian Mc Harg.
http://farm7.staticflickr.com/6137/5990873502_40781017fd.jpg

Clearly, landscape possesses an historical narrative in exactly the way that painting and sculpture do. Landscape art possesses, as well, an "artworld," a body of critics and scholars who, like Pope and Price in the English Gardening era, trace the ongoing discourse and locate a particular work's place within it, supplying reasons to support their interpretations of it and judgments about its aesthetic value. The history of landscape art and the history of debate about landscape art demonstrate that works of landscape, like other works of fine art, have responded to evolving values and philosophies and so constitute an artworld.

Newton's history of landscape, along with other, less ambitious, works on the subject, considers the evolution of landscape styles as *visual* representations of larger philosophical ideas; it is, one might say, a *visual* history of landscape. As landscape artists grow more at ease with the concept of landscape articulated here, as they become more acclimated to thinking of their mode of expression as essentially kinesthetic, we

can look forward to a history of *kinesthetic* responses: An account of how the "feel" of particular landscapes relate to the ideas and ideals of particular historical moments.

It is its artworld, and landscape art's evolution alongside historical developments generally, that enable ladnscape to speak sympathetically to the walker who experiences it. For the walker is, himself, of a distinct historical era and so embodies the tastes and values manifested in its style; in the case of restored, historical landscapes, the walker can grasp kinesthetically—by the feel of the work—the human values that shaped another era.

The power of landscape to reflect our moods creates in us a visceral sense of oneness with the landscape. It seems at times that landscape empathizes with us, and we are grateful as we always are for empathy. A landscape that so accurately "feels" our most private states is an intimate friend.[30]

This notion was put somewhat differently by Gaston Bachelard (1969) when he noted that in experiencing landscape, the sense of self and the sense of object, the experiences of inner and outer, lose their separate identities and merge into a single whole. Landscape becomes, for Bachelard, an extension of self. In experiencing landscape, we experience the "space" of our own inner consciousness projected outward infinitely, we experience the infinitude of our own inwardness, which is to say, our freedom.

It is in this respect that landscape can be said to acquire an ethical dimension as a prompter of moral sentiments and actions. A walk through a landscape is, then, the start of a walker's concern for the well-being, not only of a particular favorite landscape, but of the natural environment from which landscape art is created.

[30] I do not intend by such language that moods are objectively within a landscape, that it actually holds them or presents them to us as Otto Baensch argued. (See, Langer, 1958) Moods, like feelings, are the conscious representations of patterns of kinesthetic responses that occur, in every case, in the sentient recipient, the perceiver. I do not take moods as inhering in non-sentient works of art such that they may be thought to be out there independent of perceptual experience.

## BIBLIOGRAPHY


Appleton, Jay, 1975. *The Experience of Landscape*, London: John Wiley and Sons, Ltd

Appleton, Jay, 1996. *The Experience of Landscape*, London: John Wiley and Sons, Ltd

Arnheim, Rudolf, 1954. *Art and Visual Perception: A Psychology of the Creative Eye,* Berkeley: University of California Press.

Arnheim, Rudolf, 1966. *Toward a Psychology of Art,* "Order and Complexity in Landscape Design," Berkeley: University of California Press.

Bachelard, G., 1969. *The Poetics of Space,* M. Jolas, trans., Boston: Beacon Press.

Baensch, Otto, 1923. "Art and Feeling," in *Reflections On Art,* 1958, S.K. Langer, ed., Baltimore: The Johns Hopkins Press.

Bann, S., 2003. "Sensing the Stones: Bernard Lassus and the Ground of Landscape Design," in M. Conan, ed., *Colloquium On Landscape Design and The Experience of Motion,* Washington, D.C.: Dumbarton Oaks Research Library and Collection.

Bergson, Henri, 1910. *Time And Free Will: An Essay On The Immediate Data of Consciousness,* New York: The Macmillan Company.

Berleant, Arnold, 1991. *Art and Engagement*, Philadelphia: Temple University Press.

Berleant, Arnold, 2004. "The Aesthetics of Art and Nature," in *Aesthetics and The Environment: TheAppreciation of Nature, Art and Architecture,* Allen Carlson and Arnold Berleant, eds., London: Routledge.

Bernard, John Henry, trans. 1949. *Kant's Critique of Judgement.* 2nd ed. rev'd. London: Macmillan.

Bloomer, Kent C. and Moore, Charles W., 1977. *Body, Memory and Architecture,* New Haven: Yale University Press.

Boring, E.G., 1942. *Sensation and Perception in the History of Experimental Psychology*, New York: Appleton-Century-Crofts, Inc.

Bosanquet, Bernard, 1886. *Introduction to Hegel's Philosophy of fine Art,* London: Kegan Paul.

Bourassa, S.C., 1991. *The Aesthetics of Landscape*, London: Bellhaven Press.

Brady, Emily, 2004. “Imagination and the Aesthetic Appreciation of Nature,” *Aesthetics and The Environment: The Appreciation of Nature, Art and Architecture,* Allen Carlson and Arnold Berleant, eds. London: Routledge.

Bruce, V., P. R. Green, M. A. Georgeson, 2003. *Visual Perception, Physiology, Psychology and Ecology,* New York and Hove: Psychology Press.

Burke, E., 1757. *A Philosophical Enquiry Into The Origin of Our Ideas of The Sublime and The Beautiful,* Adam Phillips, ed. 1990, New York: Oxford University Press.

Calhoun, C. and Solomon, R., 1984. *What Is An Emotion?* New York: Oxford University Press.

Carlson, Allen, 2000. “Introduction,” *Aesthetics and The Environment: The Appreciation of Nature, Art and Architecture,* Allen Carlson and Arnold Berleant, eds. London: Routledge.

Carlson, Allen and Berleant, Arnold, eds. 2004. *The Aesthetics of Natural Environments,* Toronto: The Broadview Press.

Casey, Edward S. 1993. *Getting Back Into Place,* Bloomington: University of Indiana Press.

Casey, Edward S. 2002. *Representing Place: Landscape Painting and Maps,* Minneapolis: University of Minnesota Press.

Cataldi, S., 1993. *Emotion, Depth, and Flesh: A Study of Sensitive Space: Reflections on Merleau-Ponty’s Philosophy of Embodiment*, Albany: State University of New York Press.

Churchland, Patricia, 2011. *Braintrust,* Princeton: Princeton University Press.

Collingwood, Robin George, 1938. *The Principles of Art,* London: Oxford University Press.

Conan, M., 2003. “Introduction”, in M. Conan, ed. ‘*Colloquium On Landscape Design and The Experience of Motion,* Washington, D.C.: Dumbarton Oaks Research Library and Collection.

Copeland, R. and Cohen, M.1983. *What Is Dance?* New York: Oxford University Press.

Corner, J., 1992. “Representation and Landscape,” in S. Swaffield, ed. 2002. *Theory in Landscape Architecture: A Reader,* Philadelphia: University of Pennsylvania Press.

Corner, James, 1999. " Eidetic Operations and New Landscapes," in *Recovering Landscape,* James Corner, ed. Princeton: Princeton Architectural Press.

Cosgrove, D., 1999. "Liminal Geometry and Elemental Landscape: Construction and Representation," in *Recovering Landscape,* James Corner, ed. Princeton: Princeton Architectural Press.

Cosgrove, D., 1997. *Social Formation and Symbolic Landscape*, 2nd ed., Madison: The University of Wisconsin Press.

Crease, Robert, 2002. "The Pleasure of Popular Dance," *Journal of the Philosophy of Sport,* XXIX, 106-120.

Damasio, A., 1999. *The Feeling of What Happens: Body, Emotion and the Making of Consciousness,* New York: Harcourt Brace and Company.

Danto, A.C., 1997. *After The End of Art*, Princeton: Princeton University Press.

Danto, A.C., 1992, *Beyond the Brillo Box: The Visual Arts In Post-historical Perspective*, New York: Farrar, Straus, Giroux.

De Rivera, Josheph, 1977. *A Structural Theory Of The Emotions,* New York: The International Universities Press, Inc.

Dewey, J., 1895. 'The Theory of Emotion,' *Psychological Review* 2: 3-32.

Dewey, J., 1929. *Experience and Nature,* New York: Dover Press.

Dewey, J., 1932. *Art As Experience,* New York: Dover Press.

Duclos, S.E., J. D. Laird, E. Schneider, 1989. "Emotion-specific Effects of Facial Expressions and Postures On Emotional Experience" in *Journal of Personality and Social Psychology,* Vol. 57, No.1:100-108.

Flack, W. F., Laird, J.D., Cavallaro, L.A., 1999. 'Separate and Combined Effects of Facial Expressions and Bodily Postures On Emotional Feelings' in E*uropean Journal of Social Psychology*, 29:203-217.

Foster, Cheryl, 2004. "The Narrative and the Ambient in Environmental Aesthetics," *Aesthetics and The Environment: The Appreciation of Nature, Art and Architecture,* Allen Carlson and Arnold Berleant, eds. London: Routledge.

Fung, Stanislaus, 1999. "Mutuality and the Cultures of Landscape Architecture," in James Corner, ed., *Recovering Landscape,* Princeton: Princeton Architectural Press.

Garner, Stanton B. 1994. *Bodied Spaces: Phenomenology and Performance in Contemporary Drama,* Ithaca: The Cornell University Press.

Gibson, J. J., 1950. *The Perception of The Visual World*, New York: Houghton Mifflin.

Gordon, I.E., 1997. *The Theories of Visual Perception, 2nd ed*., Chichester: J. Wiley.

Gregory, R. L., 1997. *Eye and Brain: The Psychology of Seeing, 5th ed*., Princeton: Science Library.

Godlovitch, Stan, 2004. "Icebreakers: Environmentalism and Natural Aesthetics," *Aesthetics and The Environment: The Appreciation of Nature, Art and Architecture,* Allen Carlson and Arnold Berleant, eds. London: Routledge.

Haber, R.N. and Hershenson, M., 1973. *The Psychology of Visual Perception*, New York: Holt Rinehart and Winston.

Halprin, L., 1969 'RSVP Cycles' in L. Halprin, ed., *RSVP Cycles*, Austin: University of Texas Press.

Halprin, L., 1949, "The Choreography Of Gardens," *Impulse Dance Magazine,* pp.30-4l

Halprin, L. and Burns, J, 1974. *Taking Part: A Workshop Approach to Collective Creativity,* London: The MIT Press.

Hazlehurst, F.H., 1980. *Gardens of Illusion: The Genius of Andre LeNostre,* Nashville: Vanderbilt University Press.

Hepburn, Ronald, 2004. "Contemporary Aesthetics and the Neglect of Natural Beauty," *Aesthetics and The Environment: The Appreciation of Nature, Art and Architecture,* Allen Carlson and Arnold Berleant, eds. London: Routledge.

Hershenson, M. 2000. *Visual Space: A Primer,* Cambridge: the MIT Press.

Horosko, M., 2002. *Martha Graham: The Evolution of Her Dance Theory and Training, rev'd ed.,* Gainesville: University Press of Florida.

Hunt, J. D., 2003. 'The Lordship of The Feet" in M. Conan, ed., *Colloquium On Landscape Design and The Experience of Motion,* Washington, D.C.: Dumbarton Oaks Research Library and Collection.

Hunt, J.D. 2004. *The Afterlife of Gardens,* Philadelphia: University of Pennsylvania Press.

Iacoboni, Marco et al, 1999. “Cortical Mechanisms of Human Intention,” in *Science, 286, 2526-2528.*

Inwood, Michael, ed., 1993. *Hegel: Introductory Lectures On Aesthetics,* trans. by Bernard Bosanquet, New York: Penguin Classics.

James, W., 1884. ‘What is an emotion?’, in *Mind* 9:188-204.

Kanizsa, G, 1979. *Organization in Vision: Essays On Gestalt Perception,* New York: Prager.

King, D. Brett and Michael Wertheimer, eds., 2007. *Max Wertheimer & Gestalt Theory,* New York: .

Koffka, Kurt, 1935. *Principles of Gestalt Psychology*, New York: Harcourt Brace.

Kőhler, W. 1947. *Gestalt Psychology,* New York: Liveright.

Kwon, M., 2002. *One Place After Another: Site-specific Art and Locational Identity,* Cambridge: MIT Press.

Lackner, J. R. and A. Graybiel, 1979. “Parabolic Flight: Loss of Sense of Orientation,” in *Science* 206: 1105-1108.

Langer, S. K., 1953. *Feeling and Form*, New York: Charles Scribner’s Sons.

Leatherbarrow, David, 1999. “Leveling the Land,” in James Corner, ed. *Recovering Landscape,* Princeton: Princeton Architectural Press.

Levin, David Michael, 1983. “Philosophers and the Dance,” Roger Copeland and Marshall Cohen, *What Is Dance: Readings in Theory and Criticism,* New York: Oxford University Press.

Levin, David Michael, 2003. *Modernity and The Hegemony of Vis*ion, Berkeley and Los Angeles: University of California Press.

Lynch, K., 1960. *The Image of The City,* Cambridge: MIT Press.

Malpas, J. ed., 2011, *The Place of Landscape: Concepts, Contexts, Studies.* Cambridge: MIT Press.

McDonough, T., 1994. ‘Situationist Space’ in *October,* No. 67*,* Cambridge: MIT Press.

Merleau-Ponty, M., 1945 (2002). *Phénoménologie de la Perception,* Colin Smith, trans. Oxford: Routledge & Kegan Paul Classics.

Merriman, P. 2010. “Architecture/Dance: Choreographing And Inhabiting Spaces With Anna and Lawrence Halprin,” Sage Publishing, Institute of Geography and Earth Science, Aberystwyth University, UK.

Morris, D., 2004. *The Sense of Space*, Albany: State University of New York Press.

Morris, D., 1997. “Optical Idealism and the Languages of Depth in Descartes and Berkeley,” in *The Southern Journal of Philosophy* 35.

Newton, N. T., 1971. *Design On The Land,* Cambridge: The Belknap Press of Harvard University Press.

Nietzsche, Friedrich.,1872, *The Birth of Tragedy*, W. Kaufmann, trans., New York: Vintage Books.

Nietzsche, Friedrich, 1956 trans. *The Genealogy of Morals,* New York: Doubleday Anchor.

Olin, Laurie, 2008. “Drawings At Work: Working Drawings, Construction Documents” in *Representing Landscape Architecture*, M. Treib, ed., Oxon: Taylor & Francis.

Osborne, H., 1982. ‘Expressiveness In The Arts’ in *Journal of Aesthetics and Art Criticism*, Vol. 41, Issue 1.

Pallasmaa, Juhani, 2005. *The Eyes of The Skin: Architecture and The Se*nses, Chichester: John Wiley and Sons, Ltd.

Parshall, L., 2003. ‘Motion and Emotion in C.C.L. Hirschfeld’s Theory of Garden Art’ in M.Conan, ed., *Landscape Design and The Experience of Motion,* Washington D.C.: Dumbarton Oaks Research Library and Collection.

Piaget, J., 1966. quoted in E. H. Hall, *The Hidden Dimension,* Garden City, N.Y.: Doubleday.

Piaget, J., 1967. *The Child’s Conception of Space*, F.J. Langdon and J. L. Lunser, trans. London: Routledge and Kegan Paul.

Pierce, Charles Sanders, 1932. *The Collected Papers of Charles Sanders Pierce,* Charles Hartshorne, Paul Weiss, Arthur W. Burks, eds.

Plutchik, R. and Kellerman, H, eds. 1980. *Emotion: theory, Research, and Experience,* New York: Academic Press, Inc.

Price, U., 1794. “On the Picturesque, As Compared with The Sublime and The Beautiful” in *Essays on The Picturesque, As Compared with The Sublime and The Beautiful and, on The Use Of Studying Pictures for the Purpose of Improving Real Landscape,* J. Mawman.

Prinz, Jesse J., 2004, *Gut Reactions,* New York: Oxford University Press.

Richardson, T., 2005. ‘Psychotopia’ in *Vista: The Culture and Politics of Gardens,* T. Richardson and N. Kingsbury, eds., London: Francis Lincoln Limited.

Rieder, K., 2008. ‘Modeling, Physical and Virtual’ in *Representing Landscape Architecture*, M. Treib, ed., Oxon: Taylor & Francis.

Rose, J., 1938. “Freedom In The Garden” in *Pencil Points*, October, 1938.

Santayana, G., 1896. *The Sense of Beauty: Being The Outline of Aesthetic Theory*, New York: Dover Publications, Inc.

Schachter, S. and J. Singer, 1962. “Cognitive, Social and Physiological Determinants of Emotional State” in *Psychological Review,* Vol. 69, 5: 379-399.

Schonberg, Arnold, 1967. *Fundamentals of Music Composition* London: Faber and Faber.

Scruton, R., 1979. *The Aesthetics of Architecture*, Princeton: Princeton University Press.

Sekuler, Robert, 2012. “Motion Perception: A Modern View of Wertheimer’s 1912 Monograph” in *On Perceived Motion and Figural Organization,* Lothar Spillman, ed. Cambridge, MA: The MIT Press.

Spillman, Lothar, 2012. “The Current Status of Gestalt Rules I Perceptual Research: Psychophysics and Neurophysiology,” in *On Perceived Motion and Figural Organization,* Lothar Spillman, ed. Cambridge, MA: The MIT Press

Sheets-Johnstone, M., 1966. *The Phenomenology of Dance,* Madison: The University of Wisconsin Press.

Sheets-Johnstone, M. ed., 1992. *Giving The Body Its Due,* Albany: State University of New York Press.

Sheets-Johnstone, M., 2006. “Essential Clarifications of ‘Self-Reflection’ and Husserl’s ‘Sphere of Owness’: First Steps Toward A Pure Phenomenology of (Human) Nature,” *Continental Philosophy Review,* 42, 375-400.

Sheets-Johnstone, M. ed., 2009. *The Corporeal Turn.* Charlottesville, Virginia: Imprint Academic Philosophy Documentation Center.

Sheets-Johnstone, M. 2010 a. "Kinesthetic Experience: Understanding Movement Inside and Out," *Body, Movement and Dance in Psychotherapy,* 5:2, 111-127 Online by Taylor and Francis.

Sheets-Johnstone, M. 2010 b. "Why Is Movement Therapeutic?" *American Journal of Dance Therapy.* 32(1) 2-15.

Sheets-Johnstone, M. ed. 2011a. *The Primacy of Movement.* Philadelphia: John Benjamins Publishing Company.

Sheets-Johnstone, M. 2011b. "Movement and Mirror Neurons: A Challenging and Choice Conversation," *Phenomenology and The Cognitive Sciences,* Gallegher, S. and Zahavi, D., eds. Online by Springer Science +Business Media.

Sheets-Johnstone, M. 2011c. "Steps Entailed In Foregrounding the Background: Taking The Challenge of Languaging Experience Seriously." *In Knowing Without Thinking: The Theory of the Background in Philosophy of Mind*, Radman, Z., ed., New York: Palgrave Macmillan.

Smithson, R., 1979 a. "A Sedimentation of The Mind: Earth Projects" in *Writings Of Robert Smithson,* Nancy Holt, ed., New York: New York University Press.

Smithson, R., 1979 b. "Spiral Jetty" in *Writings of Robert Smithson,* Nancy Holt, ed. New York: New York University Press.

Shepard, P. 2002. *Man In The Landscape,* Athens: University of Georgia Press.

Sparshott, Francis, 1983. "Why Philosophy Neglects The Dance," in *What Is Dance: Readings in Theory and Criticism,* Copeland, R. and Cohen, M. eds., New York: Oxford University Press.

Steenburgen, C. and Reh, W., 1996. *Architecture and Landscape: The Design Experiment of The Great European Gardens and Landscapes,* Netherlands*:*Prestel, Bussum.

Stolnitz, J., 1960. *Aesthetics and Philosophy of Art Criticism,* New York: Houghton Mifflin.

Swaffield, Simon, 2002. *Theory In Landscape Architecture: A Reader,* Philadelphia: University of Pennsylvania Press.

Thomas, Ben, 2012. "What's So Special About Mirror Neurons?" in *Scientific American,* November 6, 2012.

Treib, M., 1995. 'Must Landscapes Mean: Approaches To Significance In Recent Landscape Architecture' in *The Landscape Journal*, #14, Spring.

Treib, M. ed., 2008a. "Introduction," *Representing Landscape Architecture*, Oxon:Taylor & Francis.

Treib, M., 2008b. "On Plans" in Treib, M., ed., *Representing Landscape Architecture*, Oxon: Taylor & Francis.

Tuan, Yi-Fu, 1977. *Space and Place,* Minneapolis: University of Minnesota Press.

Veder, Robin, 2013. "Walking Through Dumbarton Oaks: Early Twentieth Century Bourgeois Bodily Techniques and Kinesthetic Experience of Landscape," Univ. of California Press, for Society of Architectural Historians, http://www.jstor.org/stable/10.1525/jsah.2013.72.1.5, March, 2013.

Waldheim, Charles, 1999. "Aerial Representation and the Recovery of Landscape," in James Corner, ed., *Recovering Landscape,* Princeton Architectural Press.

Walker, P., 2008. "Modeling The Landscape" in M. Treib, ed., *Representing Landscape Architecture,* Oxon: Taylor & Francis.

Wertheimer, Max, "Experimental Studies on Seeing Motion," Michael Wertheimer and K.W. Watkins, trans. in *On Perceived Motion and Figural Organization,* Lothar Spillman, ed. Cambridge, MA: The MIT Press.

Wertheimer, Max, "Investigations On Gestalt Principles ," Michael Wertheimer and K.W. Watkins, trans. in *On Perceived Motion and Figural Organization,* Lothar Spillman, ed. Cambridge, MA: The MIT Press.

Whateley, T., 1770. *Observations On Modern Gardening, 2nd ed.,* London: T. Payne.

Winerman, Lea, 2008. "The Mind's Mirror," in *Monitor,* American Psychological Association, http://www.apa.org/monitor/oct05/mirror.aspx

Wolfflin, H., 1886. 'Prolegomena To A Psychology of Architecture,' unpublished PhD thesis, Munich University; trans. by Florian von Buttlar and Ken Kaiser, located in H.T.C. Section of Department of Architecture, Massachusetts Institute of Technology, Cambridge.

Wolfflin, H., 1888. *Renaissance and Baroque,* trans. by Kathrin Simon, 1966,Ithaca: Cornell University Press.