On Architecture and the Dancing Body:  
Changing Visuality

by

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Foreword

I believe that improving the quality of movement in our cities can be a strong step towards improving the quality of life. As we carve cities out of the wilderness, we manufacture a new landscape, molded in the form of sidewalks, highways, bus stations, and urban parks. Whether at the foot of a skyscraper or from the window of an elevated train, these designs choreograph the movement of the human body—both as viewer and dancer—through the city. The choices made to determine the speed limit on the road, the route of pedestrian and bike paths, or the elevation of the infrastructure, are choices that directly affect the way the built environment is seen and felt by the human body.¹

My brother Daniel has continuously asked me how my undergraduate studies are going to help me change the world. He challenges me to answer, “How are you going to help people with math and dance?” As a scientist and one who cares deeply for the wellness of those around him, Daniel has given me insight into energetic wellness on a chemical and cellular level. With these thoughts in mind, I peered over my dad’s shoulder observing an Orbital Decompression at the Sarasota Memorial Hospital Operating Room. He nodded for me to look at the image on the television monitor as he opened the sinuses into the center of the patient’s head. He asked me, “Do you know what we are looking at?” Through the arched windows he had surgically sculpted, I could catch a glimpse of the brain. “That’s right,” he said, “we are entering Tiger Country.”

Back at Wesleyan, Professor Susan Lourie demonstrated on a life-sized skeleton the bony architecture on which we stood. We are built on arches: the arch of our shoulder girdle is supported by the arch of our pelvis, which is supported by the arches of our feet. In our conversations about my thesis topic, Professor Pedro

¹ From my professional statement for graduate study in City Planning.
Alejandro has encouraged me to consider the wellness of architecture. I saw an example of the practice of promoting wellness in architecture in the work of architect Erik Gunnar Asplund. In his designs, Asplund used structure to affect the desired quality of movement through buildings to produce a psychological effect. He used shallow rising, wide steps to slow down movement and create an ascent that was calm and contemplative.

I had the lucky experience as a sophomore at Wesleyan to enroll simultaneously in Modern Dance I and Architecture I. Through the mutual curiosity of these disciplines, my awareness of “space” heightened. In the architecture studio taught by Professor Elijah Huge, we troubled the classification of space as universally continuous or locally defined by an architectural envelope. In the dance studio led by Professor Pedro Alejandro, we explored the possibilities of changing the energetic qualities of space through movement. These studios opened their doors to the larger campus and the larger world as a classroom.

As a junior, I began studying West African dance with Artist-in-Residence Iddi Saaka. I became very interested in the geometry of the movement, posture, and spatial organization of Ghanian dance and curious about the restaging of traditional dances from the setting of everyday architecture to a proscenium theater space. I studied the architectural histories of West Africa with Professor Peter Mark and the United States with Professor Joseph M. Siry and also pursued an anthropological perspective on architecture taking the Anthropology of Cities with Professor Danielle Gandolfo. In a final performance project for Improvisational Forms with Professor Susan Lourie in the spring of my junior year, I had the opportunity to dance in several
outdoor and indoor environments across the Wesleyan campus. In Perspectives in Dance as Culture with Professor Rachel Boggia, I researched the choreographic impact of restaging two examples of ritual dance.

Through senior year, I continued to study the history of world architecture, and to practice Modern, West African, and Bharatanatyam dance forms, questioning the link between dance and the built environment. I learned lighting design with Professor Jack Carr who helped me think about the potentials of flexible framing for movement in a fixed built environment. I wondered about the treatment of the dance studio as a tabula rasa for the creation of dance and the translation of choreography from the studio to the stage.

I started my research by investigating the relationship between the dancing body and the various studio and performance spaces in which that body creates, rehearses, learns, and conveys movement. The psycho-physical process of my research has been largely influenced by my physical experiences and observations in the dance studio, theater, and all the other environments through which I move every day. A large part of my research has been in the reflections and interpretations in my field journal comparing the practices of Modern, Bharatanatyam, and West African dance as well as other relevant experiences from my personal work as a dancer, choreographer and lighting designer.

From four years of questioning, exploring, and connecting my broad interests in mathematics, dance, architecture, anthropology, and lighting design, one of the largest struggles in the creative process of this thesis was in narrowing the scope of my research. My sister Hanna, who is gifted in all of the arts, reminds me that the
theater is more than a place for entertainment, because no matter how realistic or abstract the dance or play is, the audience sees a reflection of the real world and themselves. I use the analysis of the performative potential of a theater space as a microcosmic study of the fundamental relationship I want to understand. The works cited in the last couple of pages of this document can only begin to tell the story of this body of research. I wanted to seek out the fundamental relationship between the moving body and the everyday built environment through which it moves. I still desire a deeper and broader understanding of my topic than the scope of an undergraduate thesis can allow. This study is neither the beginning nor the end.
Introduction

The abridged history of dance and performance architecture that will be considered within this paper will start with the court ballets of France and progress to classical ballet in Europe, including European Russia, and the United States. I will follow the traditions that evolved henceforth from classical ballet in the United States and Europe to modern, postmodern, and finally to contemporary traditions in the United States. In Part I, I will cover a brief history of the performance architecture of the court ballet and early classical ballet. In this section, I will also discuss the major philosophies and precedents that these two aesthetic traditions have critically considered. In Part II, I will consider in depth, three case studies through which I will analyze my claim that changing choreography has been supported and to a degree, affected by the changing architecture of performance spaces, and further, that a changing relationship between the audience and performer has also been influenced.

The first case study I will consider is the Imperial Mariinsky Theater in Saint Petersburg, Russia. This work of neoclassical architecture was designed by Alberto Cavos, who was also the architect of Moscow’s Bolshoi Theater. The Mariinsky opened in 1860 and was the home of the Imperial Ballet under the choreography of Marius Petipa, from 1886 until the end of his career in 1903. The second case I will delve into is the Judson Memorial Church in New York City, designed and constructed by McKim, Mead, and White from 1888 to 1893. The Judson Memorial Church Building offered an alternative performance space (initially in the gymnasium, then in the sanctuary) for a group of dancers who would be known as the Judson Dance Theater collective, becoming a symbol of the postmodern dance
movement in the United States in 1962. The third case I will examine is the Institute of Contemporary Art in Boston that opened in 2006. The flexible design of the Barbara Lee Family Foundation Theater by Diller Scofidio + Renfro enables an adjustable set-up for contemporary dance companies.

For the purposes of this study, I would like to distinguish between new creations and recreations of choreography to examine these categories as separate subject matters. New creations are what I will call new dances, and what I will define as dances that are being imagined, formed, and executed for the first time, granted these may develop over time. My purpose for establishing this subcategory is to examine the relationship between the built space and the creative process of dance. The definition of new dances ignores the genre of movement and the time period in which they are created, although these specific details may serve as tools establish a methodology within this examination that enhances and promotes a sense of wellness and reception for both dancers and their audience. I want to examine the process of creation of new dances with particular reference to the physical spaces of creation. I will be looking to find what effect a built environment has on the artistic process of the creation of new dances and their product social meanings.

In a separate vein, I will be examining the restaging of dances from one space to another, looking at what is lost, gained, or changed in the transition. I will call the dances examined in this subcategory restaged dances. Essential to both of these investigations are the questions of how the dancing body is responding to the various factors of the built environment and how the audience sees and experiences the dancing body in a given built environment. In other words, what are the limiting and
enabling aspects of architecture as they affect movement and the experience of that movement?

Implicit in architecture is information about movement that tells the pedestrian where to walk, where to pause, how large to stride, where to sit, congregate, crouch, and look up. Material, form, and ornamentation also hold social and cultural meaning that may be implicit or explicit to the viewer. Through the language of these elements of the architecture, the entrance to a performance space sets up expectations about what will be seen. While it is true that a single stage may support any number of different genres of performance, the architecture that houses a performance cannot be removed from the wholistic experience of a performance. I argue that a piece of choreography that ideally maintains the integrity of its movement and performers, when restaged will be experienced differently. I argue that the converse is also true: a stage will be experienced differently when it houses different choreography.
Part I: Precedents and Theory

A History of Perceptions of Space and the Body in Architecture

To start to understand the relationship between dance and architecture, we might first consider the space between the moving body and architecture. In his essay, “Body Movement,” Robert J. Yudell writes, “Space is typically thought of as a void or as the absence of solid, and movement thought of as a domain separate from its existence in space.” In the terms used by Gilles Deleuze and Felix Guattari in *A Thousand Plateaus*, we will call this visual perception of space the *optic* sense of space. Although their writing focuses on what they call the “primordial duality between the smooth and the striated” spaces, Deleuze and Guattari use the dichotomies of “haptic” and “optic,” “close vision” and “distant vision” as subordinate terms to describe the experience of smooth and striated spaces. Deleuze and Guattari write:

The haptic function and close vision presuppose the smooth, which has no background, plane or contour, but rather changes in direction and local linkages between parts. Conversely, the developed optical function is not content to take striation to a new level of perfection, endowing it with an imaginary universal value and scope; it is also capable of reinstating the smooth, liberating light and modulating color, restoring a kind of aerial haptic space that constitutes the unlimited site of intersection of the planes.

So the *haptic* sense feels the vector field of movement, while the *optic* sense sees the contours of figures and background in space. In simpler terms, Yudell describes the *haptic* experience of space as “feeling” space and attributes the ability to sense space

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3 Ibid.
in this way to dancers. Yudell writes that “This ether through which most of us look, focusing on solid objects, becomes real ‘stuff’ to the dancers.”\(^5\) We can define the *dancing body* for the purposes of this study as a moving human body keen to the *haptic* experience of space.

Yudell offers the example of Martha Graham, one of the mothers of Modern Dance in the United States, as one such *dancing body*. He writes that she “would regularly base a set of exercises on the haptic experience of space; her students were asked to hold, push, pull, and touch pieces of space and places in space.”\(^6\) Yudell says that the outcome of this practice is to sensitize the body to articulately feel an “interaction with the positive stuff of space” to the extent that “The dancer and the space animate one another as partners.”\(^7\)

The haptic and optic experiences of space also relate to two distinct spatial concepts in architecture. The treatment of space as continuous in the way that architect Ludwig Mies van der Rohe uses reflective materials and glass to create visual continuity through a building and to blur the separation from inside to outside. Mies uses walls, not to contain space, but to simply to imply different programatic areas while maintaining a physical continuity of space. Deleuze and Guattari call this space “striated” and therefore defined by the *optic* experience. They write, “Striated space, [...] is canopied by the sky as measure and by the measurable visual qualities

\(^5\) Yudell, 58.
\(^6\) Ibid.
\(^7\) Ibid.
deriving from it.”8 The continuous space created for vision and movement is, in other words as extensive as the sky, both physically and visually.

The treatment of built space as punctuated by portals, and contained and segregated by solid dividers is, on the other hand, “smooth” space and therefore more haptic than optic. Deleuze and Guattari write, “Smooth space is filled by events or haecceities, far more than by formed or perceived things. It is a space of affects, more than one of properties. It is haptic rather than optical perception. It is an intensive rather than an extensive space, one of distances, not measures.”9

It is useful to think about the evolution of current perceptions of space, both haptic and optic, by beginning with a discussion of Classical Greek thought. Western rules of optic perspective and composition are born of the European Renaissance, whose ideas are likewise born of the revival of Classical thought. Furthermore, much of our modern mathematics, of note, among other academic fields, is derived from Classical Greek philosophy.

In *Art and Geometry: A Study in Space Intuitions*, William M. Ivins Jr. traces the differences between metrical and perspective geometry to their origins in two different approaches to examining space: “tactile-muscular” and “visual” intuitions of space. By “intuition,” Ivins means the awareness and information largely gathered by the senses of the body part indicated.10 The Greeks, he claims, were instinctively tactile-minded and produced a metrical approach to geometry as a result. Ivins writes:

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8 Deleuze, 479.  
9 Ibid.  
The Greek idea of a primary substance, or matter, having extension and located in an independently existing space, but set off against a lot of mirage-like secondary, attributable, qualities, may be regarded as the reduction of the tactile-muscular intuitions to a sort of basic philosophical principle.\textsuperscript{11}

Ivins’s concept of the tactile-muscular intuition of space is akin to the modern concept of the \textit{haptic} sense as understood by Deleuze, Guattari, and Yudell. The distinction that arises from my reading of these terms is that the term \textit{tactile-muscular} implicates a duality between feeling with the hands and moving the body. The term \textit{haptic} indicates, on the contrary, that feeling and moving are part and process of the same sense. So, while the \textit{tactile-muscular} sense succeeds where the visual sense falls short of understanding the size, shape, and texture of objects at the human scale, it offers no understanding of the field outside the immediate space around the body.

People who work with their hands are sensitized to a different understanding of objects and space than people who engage with space using the whole body. John Sharwood Smith, Head of the Classics Department at London University’s Institute of Education, offers an example that enlightens the \textit{tactile-muscular} duality in Classic Greek thought. He writes from the perspective of fifth-century Greece that “neither sculptor nor architect will ever be considered a gentleman,” since sculpture and architecture—both works of the hands—are trades and “no gentleman works at a trade. Trades do not allow those who work at them the leisure to cultivate their bodies and minds with athletics, dancing, singing and poetry.”\textsuperscript{12}

\textsuperscript{11} Ivins, 6.
Ivins draws his conclusions about the tactile-muscular-mindedness of the Greeks from his study of the representation of the human body in Greek painting and sculpture, as well as their analogous use of the human body in architecture. Through his examples, it becomes clear that the Greek application of the tactile-muscular intuition, despite the duality implicated in the origins of the term, produces a haptic result for the modern day viewer. Ivins offers the following example of the Greek representation of the human body:

The Greeks represented Jim making a single gesture such as he might use in a fight, and somewhere they represented Jack making another such gesture, but they never represented the fight between Jim and Jack or the way in which the gestures of the two fighters coalesced in a single continuous rhythmical movement, such that each gesture of the one had meaning through the series of related gestures of the other.13

The painting suggests a strong haptic understanding of the scene. To make sense of the poses of the two figures, the viewer must understand in their body the movement that is about to happen. The figures contain imminent movement although they fail to be coordinated in an optically sensible design.

Greek sculpture shows a firm understanding and skill in both replication and representation of the exterior anatomy of the human body as a visual image. Ivins sites the famous example of the discus thrower. He claims that while physically in an active stance, the discus thrower still appears emotionally static and aloof.14 The thrower is haptically engaged as a visual image and energetically disengaged with the space around him as a three-dimensional object.

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13 Ivins, 15.
14 Ibid., 18-19.
The writings of Deleuze and Guattari demonstrate that *haptic* and *optical* space were both demonstrated in Greek art. Although, their argument troubles Ivins’s claim that the Greeks were entirely *tactile-muscular* in their intuitions of space, it also supports his claim that the figural representations of the human body are distinctly *haptic*, by contrasting them to the background, which is distinctly *optic*. They write:

[Riegl, Worringer, and Maldiney] show how in Greek art (then in Byzantine art, and up to the Renaissance), an optical space was differentiated from haptic space, one merging background with form, setting up an interference between the planes, conquering depth, working with cubic or voluminous extension, organizing the very beginning they encounter the haptic at a point of mutation, in conditions under which it already serves to striate space. The optical makes that striation tighter and more perfect, or rather tight and perfect in a different way (it is not associated with the same ‘artistic will’).\(^{15}\)

Examining the link between dance and Greek art furthers the idea of the *haptic* intelligence in the Greek representation of the human body. For example, Greek art and architecture inspired Isadora Duncan, one of the most influential pioneers of Modern Dance, to move. In her essay, “The Dance of the Future,” Duncan writes, “I might make an example of each pose and gesture in the thousands of figures we have left to us on the Greek vases and bas-reliefs; there is not one which in its movement does not presuppose another movement.”\(^{16}\) Duncan was keen to the *muscular* intuition of the Greeks, which she saw represented on Greek vases as a series of still-framed bodies, each one pregnant with movement. As Ivins points out, this type of representation does not coordinate a collection of simultaneous

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\(^{15}\) Deleuze, 495.

movements such that the eye could gather by looking at a scene, but rather organizes a sequence of movements such that the muscular intuition would pick up.

“The Dance of the Future,” is Duncan’s unapologetic argument for her rebellion against the restraints of the corset and the rules of the ballet. She claims that the structures of ballet, imposed by an arbitrary aesthetic, are unnatural and alienating to the natural female body. Duncan writes, “If we seek the real source of the dance, if we go to nature, we find that the dance of the future is the dance of the past, the dance of eternity, and has been and will always be the same.”¹⁷ She supports her claim by stating that the Greeks too harnessed nature as their source of movement material for dance. “The Greeks were the greatest students of the laws of nature,”¹⁸ Duncan states. “Therefore dancing naked upon the earth I naturally fall into Greek positions, for Greek positions are only earth positions,”¹⁹ she writes.

Although Duncan’s descriptions of Greek dance are more observational than scholarly, the reconstructions of Greek dance have been made from the close study of the depiction of dance in Greek sculpture, paintings, and bas-reliefs by archeologists and academics coincide with her descriptions. Maurice Emmanuel of the Paris Conservatoire wrote The Antique Greek Dance from his study, with the help of the most famous archeologists of France in his era, of thousands of figures of Greek painting and sculpture, reconstructing the ancient Greek dance and comparing it to late nineteenth century French ballet. At the time of the French publication of this book, French ballet was classified by “precision and rhythm, with the mimetic almost

¹⁷ Duncan, 123.
¹⁸ Ibid., 126.
¹⁹ Ibid., 127.
entirely absent.”20 The author classifies Greek dance, by comparison, as having a strong sense of mimetic value, “joined to perfect rhythm, but somewhat lacking in precision.”21 Agreeing with Duncan’s assertion of the naturalness of Greek dance, the English translator to *The Antique Greek Dance*, Harriet Jean Beauley, writes, “The gymnastics of the Greek dance were founded on natural movements, like the walk, the run, and the leap, movements upon which was built the superstructure of the dance.”22

Maurice Emmanuel began his research classifying thousands of Greek artifacts in chronological order beginning with those made in the fifteenth century B.C.E. He proceeded by then distinguishing the different kinds of dances within each period. Human figures are not introduced in Greek art until they appeared on the vases of Dipylon. Contrasting to the straight-lined, geometrical decoration on these vases, the human figures appear depicted in a curvilinear geometry resembling the aesthetic style of the flowers and shells depicted on the earlier Mycenean style of vases. In this first period of human representation, there are images of funeral dances and the characteristic dances by warriors and those by the citizens. By the seventh century B.C.E., the representations of human figures became more flexible and the geometric stiffness seen in earlier designs began to disappear.23

Vase paintings in the sixth century B.C.E. represent funeral dances and merry dances. Dances in honor of the gods and game-dances were introduced for the first

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21 Ibid., x.
22 Ibid., xv.
23 Ibid., xi.
time in this period. The exercises of running, leaping, and throwing the discus were
done to a musical accompaniment and thus considered dance “in the Greek meaning
of the word.”24 Beauley writes that “The freer movements of the dancers may bear
some relation to the change in the manner of decorating the vases; the ceramists
painted the background black, leaving the figure in the natural red clay.”25 By
contrast, the human figures performing funeral dances and merry dances were painted
in black paint and touched up in white on the red background of the naturally colored
clay. Beauley writes of the fourth century B.C.E. as the period where human figures
finally emerged depicted in greater detail and more “scientifically correct.” Beauley
writes, “The movements become more complicated and varied; the dances more
fantastic. This period marks the high tide, as far as representations of the dance are
concerned.”26 The third century B.C.E., the dances are depicted in Bacchanalian
scenes and appear freer and less rhythmic than in earlier periods. Beauley calls these
vase designs “stiff, clumsy, and over-ornamented.”27

While the bias in Duncan’s essay is clear, her observations coupled with the
scholarly support of Maurice Emmanuel are useful in applying historic
representations of the human body to the modern concept of the haptic experience of
space. In the preface to their book, Body, Memory, Architecture, authors Kent
Bloomer and Charles Moore write, “We believe that the most essential and
memorable sense of three-dimensionality originates in the body experience and that
this sense may constitute a basis for understanding spatial feeling in our experience of

24 Beauley, xi.
25 Ibid.
26 Ibid., xii.
27 Ibid.
buildings.” They argue that we embody the history of our physical experiences, that is our movement and tactile experiences, in the built environment. For the dancing body, this argument implies a connection between the memory of haptic experiences in architecture.

Bloomer and Moore say that our perceptions of space are measured first by the unit of our own bodies. From the start, the center of our body is the point of origin, from which we measure directions forward, backward, up down, left, right. Bloomer and Moore claim that directionality based on this awareness of ourselves leads to qualitative distinctions, such that we prefer the front to the back, the right to the left, and up to down. Although this particular set of qualitative distinctions is relevant within Western European cultures, the assertion is not universally valid. A counterexample is sited in Odette Blum’s writings in the Dance Perspectives Foundation publication of Dance in Ghana. Blum points out that “The stylistic elements of African dance are totally different from those of the dance that has its roots in Europe.” The aesthetic of African dance emphasizes an easy spine and bent knees, allowing the body to go with gravity. Blum writes, “The feeling is down rather than up, probably reflecting the close relationship that an agricultural people have to the earth.”

From her observations, Blum formulates the important conclusion that “Concepts of movement reflect the traits that are considered positive or good in our

29 Ibid., 1.
31 Ibid.
society.”32 The downward body posture in Ghanian dance reflects modesty, humility, and deference to others, which are considered the most desirable traits in Ghanian culture. An upright posture in African dance is considered haughty. Referring to a dancer as one who “continuously holds himself as tall as a stalk of plantain,”33 is considered a negative criticism. On the other hand, “‘standing tall’ and being ‘upright’ are bodily attitudes that are admired and trusted in the West.”34 Blum observes, “In both folk and art dance, there is a feeling of lifting upwards, a sense of verticality, a desire to overcome the pull of gravity.”35

From the place of our own body awareness of space, Bloomer and Moore write that our perceptions of space and the built environment are next impacted by the formal systems we learn to describe space. For their study, they write about the formation of perceptions based on the Cartesian grid and coordinate system that describes points in space along three orthogonal axes.36 Bloomer and Moore write, “Descartes was so skeptical about the reliability of the senses that he trusted only the act of thinking itself. Cartesian ‘rationalism’ called for the assignment of objective meanings to things, and these meanings were to be deduced, not sensed.”37 The many contemporary cities of rectilinear buildings literally addressed by their coordinates on the grid of the city plan will attest to the translation of this mathematical framework to how we come to view, measure, and shape our world.

32 Blum, 21.
33 Ibid., 23.
34 Ibid., 21.
35 Ibid.
36 Bloomer, 1.
37 Ibid., 23.
One attempt to perceive the body in a formalized mathematical framework is exemplified in Immanuel Kant’s essay, “On the First Ground of the Distinction of Regions in Space and What Is Orientation in Thinking?” Kant writes:

In physical space, on account of its three dimensions, we can conceive three planes which intersect one another at right angles. Since through the senses we know what is outside us only insofar as it stands in relation to ourselves, it is not surprising that we find in the relation of these intersecting planes to our body the first ground from which to derive the concept of regions in space.\(^{38}\)

Kant conceives of a horizontal plane that distinguishes the regions of above and below the body and a vertical plane that makes the regions in front and behind the body distinct. Another vertical plane would separate the left and right regions of the body. The Hungarian-born, influential choreographer and theorist, Rudolf Laban also described movement in terms of “vertical,” “sagittal,” and “horizontal” planes, creating a triaxial structure quite similar to the one that Kant describes (Fig. 1).\(^{39}\)

Kant concludes that although the most obvious experience of space is from the body itself, spatial relations are ultimately grounded in their relationship to absolute, primary space and that this relationship can be understood only through comparison with other bodies.\(^{40}\) In other words, while the *haptic* experience of space can be described in terms of actions in the planes, this relationship does not imply the relatability of the body to rectilinear geometry in the larger landscape outside of the

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\(^{40}\) Kant, 95-6.
body. The body understands this larger space best by relating to other bodies with both *haptic* and *optic* engagement.

The following musing on the conflicted relationship of the moving body to the city environment built upon the Cartesian grid reflects the *haptic* alienation of the body to such an environment.

Why are we not moved by our neighborhood shopping mall or city center office tower? Take, for example, a typical curtain-wall skyscraper. Its potential for pulling us into the realm (of movement) is almost nil. We can neither measure ourselves against it nor imagine a bodily participation. Our bodily response is reduced to little more than a craned head, wide eyes, and perhaps an open jaw in appreciation of some magnificent height or of some elegantly prescribed mullion detailing.\[1\]

A built environment (i.e., of curtain-wall skyscrapers) that is constructed in the language of Cartesian space is eliminating the human body as unit of measure, both in scale and in geometry. We visually size-up space through eye saccades from edge to edge, which makes the sort of environment described engaging to the *optic* sense. The *haptic* sense, on the other hand, is left out of the architectural planning of this environment. The lessons of formal mathematical thought in Euclidean geometry train our *optic* sensibilities to identify location on the Cartesian grid. Yet, the human body cannot see itself in any part of this environment that does not reflect the size, curvilinear geometry, or movement of the human body as it exists in and uses space, and thus finds it difficult to relate. This is the problem with basing our awareness of space entirely on the coordinate system of the Cartesian grid. Despite a long history of architecture that refers to the human body through the symbolism of its parts in

\[1\] Bloomer, 61.
both form and function, these traditions also establish a trend of ignoring the haptic experience of the moving body within those built environments.

In the book *Urban Spaces*, David Kenneth Specter compares the images of two spaces, both large open courtyards. “These two spaces have similar area and similar use.” Specter writes, “One is barren, uncrossable; the other somehow urban, live, human. The pattern of lines and geometric shapes and the changes of color as well as the texture provide a scale against which the pedestrian measures his movement.”

Specter refers to the space that is filled with people and activity—here the ground is patterned in colored brick making a rhythmic geometric surface to walk across. In the other space, which is sparsely populated by a few pedestrians and bikes cutting across, not milling as the people are in the other space, the ground is monochrome. “By visually breaking down large areas into more manageable bits, paving patterns help to ‘occupy’ an area and render it more approachable.”

The Greek column, Bloomer and Moore write, symbolizes the unique stature of the human body. Notwithstanding, the column is used as a static, emotionless, structural tool. The Greek structure never developed beyond its simple elements. Ivins suggests a comparison of these structural elements to their basic geometric forms that are the triangle, rectangle, and circle. In mathematical terms, Ivins says “Greek building construction remained in the realm of simple addition.” Ivins predicts that the lack of innovation in temple architecture may correspond with the

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44 Bloomer, 3.
45 Ivins, 17.
fact that “the function of the temple in the cult never changed.” An interesting implication of this comment is that the architectural form of the temple was intrinsically linked to the practices, particularly movement rituals, of the religion.

Ivins writes:

Adding more columns and lengthening walls, they remained within the tight limitations of the lintel construction. I have failed to find reference to any Greek voussoirs of ribs. They never used great vaults or domes so as to get large open interior spaces and vistas of light and shadow. The discovery of the principles of vaulting was eventually to reduce the Greek architectural forms to the status of mere decorative motives devoid of structural implication.

The architecture of the Greeks reflects the optically static quality that is perhaps a product of the metrical perspective of space. The structural methodology of the Greeks yielded built spaces that are well understood by the tactile-muscular sensibility, although they are less organized to the optic sense.

In another perspective of the Greek philosophy of architecture, John Onians argues in the article “Greek Temple and Greek Brain” that when the Greeks began building temples for their protective deities, they looked to the protective formation of the military phalanx as a constructive model. Onians writes:

For the citizens of the valley towns of Greece, to whom the need for military training was increasingly apparent, it would have been easy to see a rectangular house as having a similar configuration to a rectangular phalanx and a post of column a similar configuration to a standing warrior.

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46 Ivins, 17.
47 Ibid.
In line with Ivins’s description, Onians explains that lengthening the temple by adding more columns to the formation perpetuated the analogy to the phalanx by mimicking its simple additive construction. Onians writes, “The more the temple was lengthened and the more it was surrounded by aligned identical supports, the more of a positive phalanx-like reassurance it would have produced.”

The architecture of the Greek temple firmly fixed the analogy between the column and the human form, in particular, the ideal human form that is strong, ceremonious, upright as a citizen of the country and upstanding in the eyes of religion. This analogy between body and architecture is highly influential for the relationship between body and architecture in the successive history of Western architecture and dance.

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49 Onians, 51.
Renaissance and Baroque Dancing Body: Court and Theater Ballets

The circular arena for Greek dance and theater was mirrored in the design of the private dance halls of the late Renaissance and early Baroque periods in France and Italy. This womb-like space implies a physical intimacy between the dancer and the performer. The court ballets were performed in the central space of large halls with the audience seated above the dancers in raised galleries that wrapped around three sides of the dance area (Fig. 2 and 3). The audience, who was mostly comprised of dancing bodies, could feel haptically engaged with the dancers. The proximity of the seating to the stage and multiple sides of seating around the stage supported choreography that was social, largely improvised, and emphasized complex floor patterns. As Mark Franko writes in *The Dancing Body in Renaissance Choreography*:

One of the reasons often given for creating a ballet in court was to surpass all others in every aspect of invention, including the invention of new steps. One cannot stress enough the extent to which known steps of the social dance repertory were improvised upon and transformed in ballet de cour.

The ballet de cour of sixteenth and seventeenth century comprised of pantomime, declamation, scenery, costumes, and dance. At the time, the less spectacular social dancing was performed impromptu in both public and private spaces. Dance historians and reconstructors of Renaissance dance have used, among other sources, sixteenth century social dance instruction manuals. The chief text of this kind is the *Orchesographie* written by Thoinot Arbeau in 1588. The manual

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contains instruction for the steps of the ballet de cour and the comédie-ballet. Franko writes, “While certain social dances were used in ballets, their employment was subsidiary to a new form: the geometrical dance.” Descriptions of mid-sixteenth century masquerades include social dances such as pavanes, courantes, and branles, which were adapted or choreographed for particular dramatic functions. For example, the pravane was used to “herald the entrance of gods and goddesses.”

Choreographed fighting (from cabrioles and gaillardes), mimesis, and stylized walks (which may have been a form of the bourée) are other examples of social dance type movement found in the ballet de cour repertoire.

Since the first court ballet librettos were collected by Paul Lacroix in 1868, predominantly British scholars from and in the wake of the Warburg school have examined the social, political, and aesthetic impacts of the court ballet, but none have found that dance or choreography was remarkably influential on the social political setting. Building on the scholarly works of Lacroix, as well as that of Henry Prunieres and Frances A. Yates, Margaret M. McGrowan established a clear periodization of court ballets that classifies the dances from 1581 to 1610 as mainly allegorical and political, those from 1610 to 1620 as melodramatic, and those from 1620 to 1636 as burlesque.

In line with McGrowan’s classification of the earliest period, the research of Yates and Mark Franko’s writing in Dance as Text: Ideologies of the Baroque Body stress the use of the court ballet in the Valois period (1515-1598) as a political

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52 The Dancing Body, 2.
53 Ibid.
mediator for Protestant and Catholic extremist groups.\textsuperscript{55} Furthering the idea of the court ballet as a political arena, the research of Rudolf zur Lippe goes so far as to demonstrate that the French court ballet essentially legitimizes the corporeal duality of the monarch as “real and ideal body.”\textsuperscript{56}

In \textit{The Dancing Body in Renaissance Choreography} Franko discusses the relationship between the audience and the social dancer in the Italian and French Renaissance (1416-1589). In particular, he deconstructs the choreography of the slow \textit{bassadanze}, the livelier \textit{balli}, and the protodramatic \textit{balletti}. Franko quotes \textit{Orcheographie}:

\begin{quote}
Our attitude should be upright, our feet level and a slight distance apart, or the left may be very slightly advanced. The knees should be upright, but not stiff, the shoulders relaxed, the face stern, but not sad, expressionless or languid: the arms should be held slightly apart from the side … \textsuperscript{57}
\end{quote}

This is the posture of a Renaissance dancer. The upright posture refers to the decorum of the court. The aesthetic ideal of verticality and the resistance to gravity that Blum contributes to Western dance out of Europe is consistent with this example. The upward deportment of the Renaissance dancer nearly describes the posture of a dancer in the Imperial Russian Ballet as well. The vertical posture in dance in the Renaissance and Baroque periods represents the spatial culture of the court ballet, and through its associations, sovereignty and military spatial organization. The revival of the Greek column in Neoclassical architecture, as we will see in the case study of the

\begin{flushleft}
\textsuperscript{55} \textit{Dance as Text}, 3.  \\
\textsuperscript{56} Ibid., 4.  \\
\textsuperscript{57} \textit{The Dancing Body}, 14.
\end{flushleft}
Imperial Mariinsky Theater in Part II, holds imperial conceptions of verticality and monumentality that map onto Classical architecture for Western theater.

In the section of *Orchesographie*, “The Art of Dancing: Of the Stage, Room, or School” (John Weaver’s English translation), the “stage or dancing room” is represented as a rectangle and the “upper end” and “lower end,” which are both the short ends of the rectangle, as well as the left and right side, the long ends, are indicated according to the figure drawn (Fig. 4). Further notation is given to represent the four body postures, each of which refers to one of the four sides of the stage: “the face or fore-part of the body up,” “the face down,” “the face to the right side,” “the face to the left side.” Although the notation aligns each of the four postures with one of the four directions (up, down, left, and right), the description of the postures makes a clear that up and down mean up and down according to the upright body (“face or forepart of the body up,” “the face down”), rather than facing upstage and downstage. It is also clear that left and right facings do refer to facing the left and right sides of the stage, but most likely mean that the face, not the whole body, should be turned to those directions.

The author goes on to describe the four possible “tracts” along which “steps and positions” are to be described. The “right line” is a straight line that traverses the stage parallel to the long side of the room. The “diametrical line” is a straight line parallel to the short sides. The “circular line is that which goes round the room” and

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59 Ibid.
60 Ibid., 4.
is demonstrated by the image of an ampersand. The “oblique line” is a straight line drawn from corner to corner diagonally across the stage.\textsuperscript{61} The author notes that “Every one of these lines, or tracts, may jointly or separately form the Figure of the Dance, on which may be described the Positions and Steps.”\textsuperscript{62} The tract of the dance is combined with the notation for body posture, indicating where the dance starts on the stage, what direction the dancer should be facing and the path the dancer should move along from the starting position.

Louis XIV founded an academy for professional ballet in 1670 when he retired from performing. The Paris Opéra opened the same year and its directors were able to hire these trained dancers for their corps de ballet.\textsuperscript{63} The style of the theater evolved out of the intimate court setting. The gentlemen of the court became patrons of professional ballet. While the private court dance halls were structured like the theaters of Greece, the references to Classical architecture in this period of theater architecture are to institutional architecture like temples, and formalized system of proportions and mathematical principles of geometry. Professional ballet choreographed for the proscenium stage emphasized the frontal qualities of technique. The science of perspective was perfected to frame a layered vision of foreground, figure, and background. The performance space created is more optically than haptically engaging to its audience. The audience itself is physically more removed from the dancing body on stage and less likely to be composed of dancing bodies themselves.

\textsuperscript{61} Feuillet, 4-5.
\textsuperscript{62} Ibid., 5.
\textsuperscript{63} Cohen, 38.
From illustrated books on architecture and perspective printed in Italy between 1672 and 1785, the authors of the articles in *The Italian Baroque Stage* have compiled documents that describe period theatrical techniques. Flat-wing scene design was first implemented by Giovanni Battista Aleotti in the theater of the Accademia degli Intrepidi at Ferrara in 1606 and later became the widely employed style in the Italian Baroque period. The scenery was painted on large, flat canvasses, stretched over the wings that slid in grooves or runners on the floor into place facing the audience. Two rows of flat wings ended at a painted backcloth or with two more wings that met at the center of the stage and a border was hung that extended down to the top of each wing pair. The scene design was entirely painted onto this series of planes. Perspectivists in that period delved into the study of the relationship between “the simulated architecture of the set and the real, physical space.”

The set designer Giulio Troili, one of the pioneers in the science and art of flat-wing scene designs in perspective, writes in *Paradossi per Praticare la Prospettiva* in 1672, “Here in Bologna I find that the height of the front of the stage is more than that of about a 5-foot man, and its incline in the deepest part is one-ninth of its whole length.” Troili offers systematical instructions for determining the vanishing point the horizon line, but also suggests, “There is no other rule than the satisfaction of the eye because of the greater depth given to scenes in these times.”

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65 Ibid., 1.
66 Ibid., 9.
67 Ibid.
Further, the eye is only guaranteed to be satisfied if the painter paints by the rules of Renaissance perspective drawing.

Between 1693 and 1700, Andrea Pozzo wrote two volumes of *Prospettiva de’ pittori architetti* on stage and scenery design. Volume I includes an illustrated design for a theater of the following dimensions:

The distance from the back of the auditorium to the back of the stage [...] is 120 Roman palms; the front edge of the stage divides this space exactly in half, making the stage area and the auditorium area both square—60 X 60 palms. Five rows of boxes are positioned in a semicircle around the ground floor. In front of the stage is the ‘place for the musicians,’ ca. 6.7 palms wide. The proscenium is made from two pairs of winglike structures that assist in the depth effect of the stage. The proscenium opening of the 60 X 60 palm stage area is ca. 37 palms wide and seems to be about as high. The front edge of the stage is ca. 5.3 palms high with an incline of ca. 1:10.⁶⁸

Pozzo continues to describe the stage dimensions, including the placement of the wings. We can compare the use of the body as a unit of measure in Baroque architecture to the analogous Classical use of the body as a structural tool for architecture—the column. The direct analogy of the body to the built form is lost as Classical architecture is synthesized into formalized mathematics. The built environment created favors the *optic* sense over the *haptic* by removing the viewer from the physical experience of the dance.

Rouben Ter-Arutunian writes in his article, “Décor for Dance,” that set design must be considered as part of the overall visual composition of a piece of dance because it, “when combined with movement, stimulates a higher visual experience.”⁶⁹

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⁶⁸ Ogden, 15-6.
He categorizes the genres of set design for ballet into four types: classic, romantic, sculptural, and decorative. He describes the visual impact on the dance space for each type. While he clearly references the works of set designers for ballets, his analysis may naturally be applied to other dance genres that use comparable décor.

In following periods of theater architecture, culminating in the prolific period of opera houses in the late nineteenth century, the trend is towards monumentality. The styles become progressively more optic in their sensibility of ornament, material, and form. The formal system of classical proportions continues to be used, while the human body as a unit of measure is forgotten. The human body is alienated by the monumental scale and domination of the optic sense.
Man as Architecture and Architecture that Dances

Walter Gropius founded the Bauhaus (bau, building; haus, house) in Weimar in 1919 as an institution for the experimentation, collaboration, and instruction of and among the visual arts, including architecture, sculpture, painting, industrial design, planning and stage work.70 Here the working community of teachers and students, was dedicated to the examination of what Gropius called “based on the study of the biological facts of human perception, the phenomena of form and space.”71 Gropius felt that the modern stage, whose architecture would do justice to these discoveries and interpretations of theatrical space, was yet to be created. In 1926, the opportunity arose to build such a theater for the performance of Erwin Piscator in Berlin.

Motivated by the havoc of World War I, Erwin Piscator had turned to theater as an outlet for political revolution. As a theater director, he viewed himself more as a revolutionary than an artist.72 “Less art, more politics,”73 is the philosophy Piscator promotes in his 1929 book *The Political Theatre*. He developed a style of stage work that used spatial contrasts and theatrical contradictions to create a multiplicity of perspectives. With the evolution of these experimental theater methods, Piscator required a performance space more flexible than could be offered by the traditional static set.74 He had the opportunity to direct in the technologically advanced

74 Mitter, 43.
Volkesbuhne’s Theater am Bulowplatz, which was a large arena with a cyclorama, a revolving stage, and adjustable rostra, but he aspired to work in the so-called Total Theater that he had imagined, but lacked the means to realize.75

Although Gropius offers no artistic credit to Piscator in The Theater of the Bauhaus, wherein Gropius explains in great detail that largely coincides with Piscator’s description76 of the Total Theater, the facts are evident that the design was originally Piscator’s, but Gropius may have taken authorship while trying to realize the project. The connection is not clearly stated in Gropius’ writings nor in Piscator’s biography, but it seems likely that the title of this project would have been influenced by the writings of Richard Wagner on his concept of Gesamtkunstwerk—German for “collected,” “united,” “whole,” or “total artwork”—the origin of the term “total theater.” Wagner also substitutes this term to mean “theater of the future,” which further aligns his expression “total theater” with the title used by Gropius. The philosophy of the “total theater” as it is written by Wagner is an integration or intersection of all the arts (music, movement, lighting, voice, and so on) to the fullest extent that has yet to be realized.77

Under mounting pressures from the Nazi party, the Bauhaus school, then in Berlin, closed its doors on August 10, 1933. Gropius had already resigned as director of the school in 1928, both to pursue his own architecture and because there were already tensions with the Nazi party. Still affected by the continued harassment as

75 Mitter, 44.
76 “This so-called Total Theater would have had ‘variable performance areas and a series of seventeen slide or cine-projection booths, nine around the single-tiered auditorium, seven behind the cyclorama, and one in the turret that could be lowered from the roof.’” (Ibid.)
the Nazi party gained strength in Germany, Gropius abandoned the Total Theater project. Nevertheless, the design contributed to an important new concept, one that is familiar today as the black box or experimental theater.

In 1935, Gropius writes that he had the opportunity to present the Total Theater to an international gathering of writers and theater producers at the Volta Congress in Rome. Documentation on the Vth Volta Congress that occurred in Rome from September 30 to October 6, 1935 states that the international conference was devoted to the subject of “High Speeds in Aviation,” the three sections of speakers presented papers on achievements in aerodynamics and thermodynamics, and while the general focus of the conference on the future of technology, the progress of man, and human possibilities were certainly topics of broad interest to Walter Gropius, there is no record of him presenting a paper at this conference. The Volta Congresses were established in 1930 by the Fondazione Alessandro Volta at the Accademia d’Italia in honor of that great Italian physicist.

Regardless of the actual details of the conference, the presentation that Gropius recounts having given at the Volta Congress is still a valuable source of information about the design of the Total Theater. An excerpt from this presentation follows:

The contemporary theater architect should set himself the aim to create a great keyboard for light and space, so objective and adaptable in character that it would respond to any imaginable vision of a stage director; a flexible building, capable of transforming and refreshing the mind by its spatial impact alone.

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78 Gropius, 10-12.
80 Gropius, 12.
The keystone of his argument is that it was not only the scenery, the set, costumes, or props of the performance, but the actual built structure of the theater that made an impact on how the vision of a choreographer or director was realized and consequently how it would be not only seen, but also experienced by an audience.

Gropius thought that there were only three basic stage forms in existence. These are the central arena or center stage that is surrounded by the audience concentrically, the “Greek proscenium”\(^{81}\) theater or thrust stage, around which the audience is seated in concentric half circles, and the back stage or deep stage, on which the action is receded back behind the line of the curtain and does not thrust into the audience. To Gropius, the deep stage, which he says “dominates our present theater,”\(^{82}\) has the highest degree of separation between the performers and the audience. Through this spatial separation, Gropius claimed the theater was “robbed of one of its strongest means to make the spectator participate in the drama.”\(^{83}\) In other words, the audience is robbed of the *haptic* experience of the performance through this separation.

The central arena, while it maintains the “spatial separation of the two different worlds, the auditorium and the stage,”\(^{84}\) otherwise offers the audience the greatest *haptic* intimacy with the action, since they can experience the unfolding of such action three-dimensionally. The thrust stage, on the other hand, creates the

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\(^{81}\) Gropius’s use of the term “proscenium” is misleading. Izenour suggests that he meant the Greek word “proskenion,” meaning the raised platform on which actors performed in a Hellenistic theater. (Izenour, George C. *Theater Design.* New York: McGraw-Hill Book Company, 1977. pp. 95.)

\(^{82}\) Gropius, 12.

\(^{83}\) Ibid.

\(^{84}\) Ibid.
illusion of three-dimensionality without fully revealing it. Gropius observes that the illusion created is much like a bas relief image. The action, which can be seen from the front and to a limited extent from the sides, is set up against a fixed background in much the same way that figure and ground is represented in a relief, which likewise gives its viewer the suggestion of three-dimensionality through a shallow depth without ever revealing the backside of the image. This space is more *haptic*, but sent against a predominantly *optic* background.

At the other extreme, the deep stage offers a fully frontal view of the action. The audience certainly still sees the moving figures on stage as three-dimensional and notices the depth of the scene, but the audience, in this set-up is as far removed from the action as it is from that on a cinema screen—all the spatial complexity of the movement on the deep stage is visually flattened onto the two-dimensional plane created by the frame of the curtain and trim. This performance space is the most *optic*; the viewer is most removed from the *haptic* sense of the dance.

Gropius’s design (Fig. 5) is for a theater that offers all three stage set-ups interchangeably through the use of mechanically complex, but user-friendly mechanisms. Gropius writes, “I have tried to create an instrument so flexible that a director can employ any one of the three stage forms by the use of simple ingenious mechanisms.”

He imagined that such a versatile space would be well-worth the financial investment required since the building would naturally lend itself to all events from dance, film, drama, and music to sports events and assemblies. He claimed that “Conventional plays could be just as easily accommodated as the most

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85 Gropius, 12.
fantastic experimental creations of a stage director of the future.”

Further, Gropius exclaimed:

An audience will shake off its inertia when it experiences the surprise effect of space transformed. By shifting the scene of action during the performance from one stage position to another and by using a system of spotlights and film projectors, transforming walls and ceilings into moving scenes, the whole house would be animated by three-dimensional means instead of by the ‘flat’ picture effect of the customary stage.

The Total Theater space, Gropius suggests, would itself haptically engage the audience.

Although Gropius did not venture in his design of the Total Theater to implement a wholly new spatial configuration for the theater, his proposed mechanism would enable a transformable stage that could actually mutate from proscenium to center stage or allow the action to retreat into the deep stage during a performance, so challenging the firm notion of stage architecture as a static structure that can only be changed superficially. Had circumstances been better, as George C. Izenour, theater and acoustical consultant and author of *Theater Design*, notes the inevitable acoustical problems in the design of such a large domed space, especially for the stage configurations in the round and three-quarter round. Additionally, Gropius’s proposal lacks the plan for the “problems of structural and mechanical design, electro-electronic control, and the detailed engineering problems of the space-converting structures and mechanisms, particularly at this scale.” Gropius’s success is in the imaginative possibility rather than the actuality.

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86 Gropius, 12.
87 Ibid., 12-14.
88 Izenour, 96.
In part, Gropius’s proposal grew out of the popular belief that the new technology of film was soon to eclipse live theater. He felt that theater needed to evolve and that the evolution of the architecture of the theater itself would have a large part in enabling that. Although these technologies are not elements emphasized in his drawings or models, it is quite possible that Gropius included descriptions of the use of spotlight and film projectors in his presentation at the Volta Congress to suggest that the Total Theater would effectively combat the overshadowing of theater by new media. Yet, these optic elements seem to distract from the full haptic potential of a mechanized performance space.

The haptic experience of a performance space is key to understanding the interplay between the dancing body and the architecture of the theater space. Not all members of an audience are as keen to the haptic sense unless they themselves are dancers. Nevertheless, all living bodies are moving bodies. As the scholar and architect, Kent Bloomer observes, “[Architects] make places that are an expression of our haptic experiences even as these experiences are generated by the places we have already created. Whether we are conscious or innocent of this process, our bodies and our movements are in constant dialogue with our buildings.”89 Since the ballet historically moved out of the intimate court setting onto the vast proscenium stage, the audience has been physically removed from the haptic experience of the dancing body—made used to sitting still while only the eyes move. The haptic experience has become exclusive to the dancing body. The architect of a theater space, therefore, in most cases would, as Gropius did, build a space more optically engaging than haptic.

89 Bloomer, 57.
Another influential teacher at the Bauhaus, Oskar Schlemmer, exemplified in his work the possibilities of architectural engagement with *dancing body*. Schlemmer came to the Bauhaus in 1920 as head of the workshop in wall treatment and related sculpture. Gropius recognized that the most distinctive quality of Schlemmer’s work is in his interpretation of space. Gropius writes, “From his paintings as well as from his stage work for ballet and theater, it is apparent that he experienced space not only through mere vision but with the whole body, with the sense of touch of the dancer and actor.” Schlemmer recognized that the human body not only occupied space, but also defined it. His work focused on merging the two.

Marcia F. Feuerstein, author of the article “Body and Building inside the Bauhaus’s Darker Side: On Oskar Schlemmer,” writes that “Architectural space for Schlemmer was less a container for the body than an aspect of the body transformed. The entirety of Schlemmer’s oeuvre speaks of space filled with, through, and as a body.” Such a claim is supported by Gropius, as he recalls, “My own great impression of Schlemmer’s stage work was to see and experience his magic of transforming dancers and actors into moving architecture.” Schlemmer’s method of transformation was through his construction of costumes and masks to either

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90 Scheyer, 31.
91 Gropius, 8.
93 Ibid., 229.
94 Gropius, 9.
“emphasize the body’s identity,” or “change it,” stressing the conformity or invalidation of organic and mechanical laws.95

In the design of the costume, “Ambulant Architecture,” Schlemmer relates the human form to rectilinear architecture by transforming the curvilinear body into “spatial-cubical constructions”96 (Fig. 6). This is a representation of the body under the “laws of the surrounding cubical space.”97 Another costume design, titled “A Technical Organism,” physically represents “the laws of motion of the human body in space”98 (Fig. 7). By contrast to the literal cubism overlaid on the human figure in the Ambulant Architecture costume, the curvilinear geometry superimposed on the human figure in A Technical Organism costume, abstracts and accentuates the geometry of the human figure underneath. This costume signifies the possibilities of the body’s “rotation, direction, and intersection of space.”99 These costumes suggest that the curvilinear geometry of the body naturally moves in space with an accentuated curvilinear geometry, yet, the structure of the body can still reference the rectilinear geometry of architectural structure.

Recalling the theories of Kant and Laban discussed earlier, as well as the analogous structural use of the human form in architecture as the Greek column, Schlemmer highlights a duality in the relationship between the human body and architecture that these other concepts support. One relationship is between static architecture and the human structure. From an optical perspective, the standing

96 Ibid., 26.
97 Ibid.
98 Ibid., 27.
99 Ibid.
human body is analogous to vertical structural elements like columns, while a horizontal row of bricks might refer to the reclining body. The second relationship is between static architecture and the human body in motion. From the haptic perspective from which Kant and Laban write, the human body in motion may conform to or reject static architecture. Although the human body is haptically more easily engaged with other bodies, the geometrical theories of human movement on the vertical, horizontal, and sagittal planes certainly imply the relatability of human movement to a static, geometrical built environment.

Schlemmer focused on relating the haptically engaged dancing body to the static architecture of the stage space. The “Man as Dancer” (Tänzermensch), or dancing body, Schlemmer says, “obeys the law of the body as well as the law of space; he follows his sense of himself as well as his sense of embracing space.”

An example of his work in this theory is the Triadic Ballet, which he actually began choreographing as a soldier during World War I and finished during his time at Gropius’s Bauhaus. The first performance of the full ballet occurred in September, 1922 in the Stuttgart Landestheater. Schlemmer constructed transformative costumes out of padded cloth and stiff papier-mâché coated with metallic or colored paint, creating human forms that showed different relationships to space. Besides Ambulent Architecture and A Technical Organism, he also designed “The Marionette” and “Dematerialization,” which represented “the functional laws of the

100 Schlemmer, 25.
101 Scheyer, 31.
102 Schlemmer, 34.
human body in their relationship to space,” and “the metaphysical forms of expression,” respectively.\textsuperscript{103}

The following is a segment written by T. Lux Feininger, one of Schlemmer’s pupils at the Bauhaus, of his observation of another exemplary piece from Schlemmer’s \textit{Dances for the Experimental Stage}:

The stage, with jet-black back-drop and wings, contained magically spotlighted, geometrical furniture: a cube, a white sphere, steps; the actors paced, strode, slunk, trotted, dashed, stopped short, turned slowly and majestically; arms with colored arms were extended in a beckoning gesture; the copper and gold and silver heads…were laid together, flew apart; the silence was broken by a whirring sound, ending in a small thump; a crescendo of buzzing noises culminated in a crash followed by portentous and dismayed silence. Another phase of the dance had all the formal and contained violence of a chorus of cats, down to the meowing and bass growls, which were marvelously accentuated by the resonant mask-heads. Pace and gesture, figure and prop, color and sound, all had quality of elementary form, demonstrating anew the problem of the theatre of Schlemmer’s concept: man in space.\textsuperscript{104}

Feininger was most impressed by the section of the dance titled \textit{Stick Dance}. In his diary, he wrote, “Phosphorized sticks hovered as light-lines in space, forming always new amazing combinations of geometric figures. Behind them operated in black leotards, dimly perceived, man the dancer.”\textsuperscript{105} In \textit{Stick Dance}, Schlemmer used the costume of sticks fastened to the dancer’s body to physicalize the energetic, geometric connection of man with space. Schlemmer writes in “Man and Art Figure” that the “laws of organic man” reside in his “invisible functions in his inner self,” that is, all the biological systems of the human body.\textsuperscript{106} Schlemmer writes:

\textsuperscript{103} Schlemmer, 26-27.
\textsuperscript{104} Scheyer, 41.
\textsuperscript{105} Ibid., 43.
\textsuperscript{106} Schlemmer, 25.
If these [laws of organic man] are to be the determining factors, then their center is the human being, whose movements and emanations create imaginary space (Fig. 8). Cubical-abstract space is then only the horizontal and vertical framework for this flow.\textsuperscript{107}

By “imaginary space,” Schlemmer seems to mean that through man’s movement and energies, he creates a sort of vector space or \textit{haptic} space. Schlemmer says that “the cubical, abstract stage” creates its own “invisible linear network of planimetric and stereometric relationships” (Fig. 9).\textsuperscript{108} When man moves on this sort of stage, his \textit{haptic} engagement with the space is a play between his own organic laws of movement and the mathematical relationships inherent in the geometry of the space. Schlemmer claims that “this mathematic corresponds to the inherent mathematic of the human body and creates its balance by means of movements, which by their very nature are determined mechanically and rationally.”\textsuperscript{109} He suggests that calisthenics, gymnastics, and eurhythmics are supported by the geometry of the space.

Doris Humphrey, a student of Louis Horst and collaborator with Ruth St. Denis at Denishawn and one of the influential figures of Modern Dance in the United States, was not trained in architecture, but keenly aware of the dynamics created by the geometry of the deep stage. In \textit{The Art of Making Dances}, she writes, “A stage is a highly specialized kind of space—not like a studio, bounded by four walls, windows, mirrors, chairs, and whatnot; nor is it wide open like a meadow or a beach; nor is it, for the most part, in the round, as are some modern stages for plays.”\textsuperscript{110} Humphrey argues the converse to Schlemmer’s claim that the geometry of the deep stage

\textsuperscript{107} Schlemmer, 25.
\textsuperscript{108} Ibid., 23.
\textsuperscript{109} Ibid.
stage supports certain dance forms. She says that dance is a special type of movement that cannot “be placed just anywhere that is convenient.”¹¹¹ She says that the spatial attributes of the stage “can be made to help choreography or injure it, according to the understanding of the composer.”¹¹² When preparing the choreography of a dance in a studio space with the intention of restaging the dance on the stage, the spatial elements of the stage must be kept in mind at all times.

Humphrey offers these instructions to a composer of dance on the deep stage:

First, consider the four corners. These are architecturally supported by powerful verticals. Those in the back, made by a leg and the edge of the backdrop, will symmetrically frame an emerging figure; down front, the proscenium vertical and the leg directly behind it have a great effect on the figure. Stand a dancer in any of the four corners and note what happens. The upper two make the figure seem important with a remoteness which suggests, if there is no other specific mood, a heroic beginning. The powerful verticals energize the body; it seems to be upheld by walls of both physical and spiritual strength. To sense this more completely, imagine the same figure standing at one side of a field of clover with an immense sky above; the figure might be the focus of the scene, but would be weakened rather than strengthened by the environment. The two upper corners, far more than the downstage two, convey a strong impression of significant beginnings because they have not only the two verticals, but lines racing to them from various parts of the stage to form right angles—always makers of conflict and power.¹¹³

The power dynamics of the stage described by Humphrey (Fig. 10) match the vector field of mathematical relationships described by Schlemmer. Although the geometrical relationships described by Humphrey are much simplified from those described by Schlemmer, she is able to apply the theoretical *haptic* relationship between the *dancing body* and the stage space to practical instruction for creating

¹¹¹ Humphrey, 72.
¹¹² Ibid., 73.
¹¹³ Ibid., 74.
dynamic choreography. Humphrey also contradicts Schlemmer’s claim that “there is no conscious awareness of spatial relationships [on the stage].”\(^{114}\)

As a pair—if they had ever had the opportunity to collaborate—Humphrey and Schlemmer would have had an incredible set of theory, constructive, and choreographic skills with which to master the haptic potential of performance spaces. Similarly, Gropius was an architect who designed a haptically engaging performance space without the engineering abilities to make it a reality and without the haptic awareness to realize the possibilities of creating such a space. Had he had the opportunity to collaborate with an architect, choreographer, or engineer who excelled in the areas he lacked, one can imagine the creative potential of the theater spaces that may have been created. One such architect who has both a deep understanding of the haptic experience of space and has the skills in art and engineering to realize the designs that he dreams is Santiago Calatrava.

Calatrava was commissioned to both engineer and design an enlargement of the heavily trafficked Stadelhofen Railroad Station in Zurich in 1983. Despite the complicated technical issues of building on a narrow site of a busy station whose service at no point could be interrupted for construction, and additionally, being under the nervous pressure of being in charge of both the engineering and the architecture of the project (a fairly new double responsibility), there was no damper on Calatrava’s creativity. In a 1997 workshop lecture at Massachusetts Institute of Technology, Calatrava shared with the students and professors in attendance:

In addition to relating the station to the functioning of the complex and to the urban context, I began for the first time to

\(^{114}\) Schlemmer, 23.
experiment with the ideas of the body and anatomy. I thought about gesture. I started with my hand and the idea of the open hand, which signifies sincerity and openness. From the open hand tuned palm-side-down, I chose the area between the thumb and index finger as the shape of the column, which you then see repeated several times throughout the project.\textsuperscript{115}

This quote alone encapsulates the complex nature of Calatrava’s process and practice. Without losing sight of the requirements of engineering and architecture, his work is inspired by the form and movement of nature, translated and related through symbology, analogy, metamorphosis, and metaphor.

Le Corbusier too was interested in the form and symbolic gesture of the open hand. Mary Patricia May Sekler in “Ruskin, the Tree, and the Open Hand” writes that “Le Corbusier’s drawings and paintings had long shown a preoccupation with hands and with gesture. Hands appear singly, in interacting pairs, in groups.”\textsuperscript{116} The Open Hand for Chandigarh, the new capital city of the Punjab in India, was symbolic of “the era of harmony” that was to begin in India.\textsuperscript{117} The open hand was a visual symbol for Le Corbusier in his work before and after Chandigarh that could be sensuous, spiritual, or representative of the many social implications of hand gestures. Calatrava is inspired by the movement of the gesture as much as the shape of the gesture itself.

In Calatrava’s work that we find the rare merger of the choreography of life that is natural movement and the built structure. He makes an unprecedented break away from the long tradition of engineers, architects, and artists alike who have


\textsuperscript{117} Ibid., 70.
sought to build solid, stable, and secure structures to enclose the activities of everyday life. Calatrava’s notebooks are filled with studies of human bodies and dancers as well as animals, plants and innumerable other objects whose movement together compose the complex choreography of the natural world. His drawings make analogous comparisons between static forms, but also between the movements carried out by different objects. Calatrava’s system of comparing organic structures and the ways that they move serves him as a heuristic device in his creative process. In other words, he is accessing the familiar movements of daily life to create the unknown in architecture.

It is important to note that Calatrava’s works do not imitate the movements of organic life, but rather are inspired by or take cues from nature, especially the human body. His creative process, as demonstrated in his voluminous sketchbook work, seeks to develop a “morphology of movement.” Alexander Tzonis, who has researched Calatrava’s creative process extensively through the analysis of his sketchbooks, writes that he “draws dramatic significance from the body’s acrobatic action—the dancer’s gravity-defying gestures—to capture the shape of change and immerse it in a world in flux.”

In much the same way that a choreographer of dance may be credited with the ability to create an imaginative world through the creation of different kinds of movement, Calatrava also invites the audience of his works to experience “dream-

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121 *The Poetics of Movement*, 12.
work,” as they watch elements of the built environment break free from the static world “through a different kind of movement—one that generates possible worlds and fulfills a wish, a desire.”

It is possible to draw the comparison between the finished works of Santiago Calatrava and the unrealized concept work of Walter Gropius’s Total Theater. What Gropius had imagined for the theater of the future is an architecture that would figuratively move the audience by making the house come alive with mechanized and illusionary movement. As Gropius described the Total Theater:

The playhouse itself, made to dissolve into the shifting, illusionary space of imagination, would become the scene of action itself. Such a theater would stimulate the conception and fantasy of playwright and stage director alike; for if it is true that the mind can transform the body, it is equally true that structure can transform the mind.

Such a description speaks truly of the works of Calatrava. The key difference is in the real shape, construction, and mechanization of Calatrava’s work, his buildings become the shifting architectural organisms that Gropius sought to create only through the illusion of theater.

122 The Poetics of Movement, 13.
123 Gropius, 14.
Collaborative Works: Dancers and Architects

In a collaborative summer course taught by architect Ronit Eisenbach and choreographers Dana Reitz and Bebe Miller at the University Maryland, undergraduate and graduate students in the dance and architecture departments “explored the integration of architectural space and human movement at full scale and in real time.”124 The initiating idea for the workshop was that in the design process of most architectural projects, “there is little opportunity to study the construction of space from a movement point of view, while in many performance projects, there is little time to contemplate the influence of the physical environment”125 in the compositional experience. In this section, we will look at two collaborations between architects and choreographers.

Elizabeth Diller and Ricardo Scofidio established their architectural practice, Diller + Scofidio, in the late seventies when there were limited building opportunities and those available were dominated by a few notable architects. The more radical and avant-garde practices stood no chance for regular commissions. During the first decade and a half of their practice, Diller + Scofidio focused instead on live performances, collaborations with choreographers, directors, and writers, and architectural installations in the art circuit.

Roselee Goldberg, author of “Dancing about Architecture,” writes, “Between 1983 and 1998, the architects staged nine performances, each of which allowed them to explore a number of their obsessions; how to increase the felt experience of

125 Ibid.
architecture, for example, or how to build structures that mediate how the viewer sees them.”¹²⁶ These opportunities to, as Diller says, “construct ideas in real space,”¹²⁷ and have audiences respond to those ideas laid fertile grounds for the highly analytical and creative architectural theories that would distinguish their architectural practice. Diller says about this early phase of their work as a firm, “We were interested in making problems in space, not solving them—especially challenging inherited spatial conventions. Each project had its logic and appropriate medium, whether it was physical materials, or video, or performance, or print. It was simply about finding the right tool for the job.”¹²⁸

Of the nine performances, three were dance collaborations. The multimedia dance work Moving Target was produced in collaboration with choreographer Frédéric Flamand of Charleroi/ Danses—Plan K premiered at the Palais des Beaux-Arts in Brussels, Belgium, in 1996. The work was loosely based on the personal diaries of Vaslav Nijinsky, the famous dancer of the Imperial Ballet and later choreographer for the Ballets Russes, whose career ended tragically as his mind descended into schizophrenia while he was in his thirties. Moving Target seeks to investigate how Nijinsky’s “normal” and “pathological” mental and emotional states were manifested in his movement vocabulary. The following is a description of the installation to this project by Diller + Scofidio along with the effects of the optical tracking system developed for the dance by Kirk Woolford:

¹²⁷ Ibid.
Diller + Scofidio designed an ‘interscenedium’ as a counterpoint to the traditional proscenium, to indicate these different perceptual conditions; a mirror/projection screen suspended at a 45 degree angle over the stage splintered the view of the audience into ‘plan view’ (actions seen in the mirror) and ‘elevation’ (movement seen from the front). When combined with video projection, the mirror synthesized the reflected and virtual dancers in a cross between the space of the stage and the space of the screen. In addition, an optical tracking system triggered by receivers on the dancers’ bodies generated a crosshair that tracked the lead dancer and a ‘virtual cage’ that was drawn around him, based on the other performers’ locations; all of this was visible in the mirror. Thus the stage was made up of layers of real, mirrored, virtual, and graphically rendered figures. The work was interrupted periodically by a film of brief commercial spots for a fictional pharmaceutical company called ‘Normal,’ whose products treat ‘the pathologies of a post-psychoanalytical culture.’

The audience perspective was designed for a raked auditorium seating much like that of the Institute of Contemporary Art, Boston, 2006 theater design that the firm would create a decade later.

In 1998, Diller and Scofidio worked again with choreographer Frédéric Flamand and the Ballet de l’Opéra national de Lyon on two more multimedia dance projects—EMJ 1 Man Walking at Ordinary Speed and EMJ 2 Inertia. These pieces are inspired by Eadweard Muybridge and Étienne-Jules Marey’s early experiments with motion photography. The dances “examined imaging media as instruments of both truth and deception.” A description of the project follows:

The stage is transformed into a production studio; a large video screen displays images from a live camera suspended on a roving boom arm and controlled by an operator on stage. Video and live action are in fluid exchange duplicating, contradicting, or complementing one another. The screen travels up- and downstage on an inclined gantry. As it moves downstage, it compresses the performance space, ultimately sweeping the stage clean of performers, transforming the entire space into a large backstage while continuing to broadcast the

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129 Goldberg, 56.
130 Ibid., 54-5.
dancers ‘off stage’ activities. Other elements of the work include video partnering with prerecorded dancers, trace dancers (in which live movements are drawn in space through video feedback), computer-animated dance instructions, and LED-text dances.  

The movement choreography in the other six live performances, although they were largely focused as theater pieces, was still markedly affected by the architectural installations contributed by Diller + Scofidio. Diller says, “With Moving Target, […] we were experimenting with real-time computing intersecting stage action. But how would the public discern between responsiveness and pre-programmed stage effects? How could the computer be a provocateur, another character on stage? Could it carry the same liveness that an actual performer carried?” Scofidio adds, “We did over ten theater and dance works. We had a growing tendency in the stage work to replace live performers with virtual ones.”

“Live and pre-recorded dancers can enjoy two types of hypervirtuosity: live dancers are freed from the confines of gravity as the mirror reorients everything by ninety degrees; the pre-recorded dancers are freed from the confines of bodily physics as their actions are produced through morphing technologies. In addition, an optical tracking system follows pre-determined stimuli and draws real-time figures that are projected onto the mirror.” This description of Moving Target was compiled by Diller + Scofidio.


131 Goldberg, 55.
132 Incerti, 53.
133 Ibid.
134 Ibid., 98.
asks, “There appear to be a series of issues that you are preoccupied with that define your interpretation of space. For example, a certain conceptualization of the body and how it relates to space appears to be important in your work, also a particular interest in the normative conditions of domestic space. How do you interpret space differently from predominant models (e.g. modernist ones) that exist?”

Diller responds, “We see space as scripted, not a tabula rasa. Space is inherited and is always attached to geographies, histories, and policies. So when we think about an intervention in space like an act of architecture, we always think of ourselves as visitors to a problem that existed before us, and therefore it’s up to us to think backwards and forwards through contemporary filters.”

“The drawings tried to approximate the complexity of real experience in space. At the same time, we were also trying to abstract physical space through techniques borrowed from 2-D drawing. […] In the performances Delay in Glass and later Moving Target, we suspended a large mirror at 45 degrees over the area of the stage. The split focus turned the traditional proscenium into an ‘interscenium’ in which vision was divided into two registers: the narrative space of perspective and the omniscient plan view. We were trying to introduce a ‘thinking’ vision free of subjectivity, one that is normally privileged to paper.” Diller adds.

Scofidio says, “The mirror in the stage works forced a struggle between illusion and knowledge. A performer lies prone on the floor obscured by a screen and

\[135\] Incerti, 51.
revealed only in the mirror. The audience sees him standing upright or floating in space, defying gravity. You know it’s an illusion, but your eyes fight your brain.”

While Diller and Scofidio brought an architectural viewpoint to the choreography of dance, architect Abdelhalim Ibrahim Abdelhalim collaborates with dancers to bring the perspective of the dancing body to the construction of architecture.

The Cultural Park for Children in Cairo, Egypt, is a drastic contrast from the Cartesian aesthetic of the modern cityscape. The floor plan is a patchwork of spirals and elaborately intertwining circles of different sizes and other geometric figures. The architecture is playfully evocative, inviting its audience to move, touch, and climb its walls, steps, and open windows. The design is intended to “encourage exploration and empirical learning through architectural form,” which invites both visual and physical engagement.

The genesis of this work of landscape and architecture was a shared effort of the architect, Abdelhalim and the community of the Abu al-Dahab neighborhood. In order to gain support for the project from the community, Abdelhalim approached the Minister of Culture to propose that a festival or building ceremony be held. Rather than presenting blueprints and models that were bound to be meaningless and uninspiring to the community, local artists, musicians, and dancers were invited to choreograph a piece that could be performed by local school children to describe the scheme for the design and construction. The architect writes that “The building

137 Baume, 182.
ceremony was thus not simply an empty ritual but a dynamic process where the static order of the original blueprint became flexible.”  

The resulting architectural landscape is one that reflects the movement that inspired its creation. Its forms are built to the human scale and made accessible to human movement through their curvilinear geometry and the rhythmic pacing of their organization. The review of the project in *Architecture for a Changing World* claims:

> An important lesson of the Cultural Park for Children is that is the unsaid in architecture, which is often the most important thing. Rhythm is a basic theme that unites all the disparate parts of the project, and gives it strength.\(^{140}\)

The “unsaid” in this project is the sense of movement, or kinesthesia, exuded by it. The space is a perfect environment for children to engage *haptically* and *optically* in their experience of space and the geometry of form.

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\(^{140}\) Steele, 123
## Part II: Case Studies

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Changing Visuality

The material of Part I deals primarily with the changing visuality of self perception and the perceived relationship of the body to the built environment. In Part II, I will look at the changing visuality of dance performance and the relationship of the audience to the dance that is constructed by the architecture of the performance venue. The visual experience of a dance performance, debatably, begins with the first visual engagement with images of a dance—say, a poster advertisement, or pictures of the dance online or in the newspaper. In Reading Dancing: Bodies and Subjects in Contemporary American Dance, Susan Leigh Foster writes that the viewer’s interpretation of a dance event begins with the announcement of the upcoming event. She claims that the verbal descriptions of the event help establish the distinctiveness of the dance through references to generic types such as ballet, modern, or contemporary. The use of expressive adjectives, the style of the graphics or images used, and typography evoke visual expectations as well as ideas about the theme, mood, narrative, and abstract qualities of the performance.\(^\text{141}\)

Foster also states that information about the location and price of the dance event influence the viewer’s expectations. She writes, “Loft or studio concerts offered for a donation or a small fee signify the experimental, the marginal, or the familial. The five-thousand-seat auditorium with ticket prices ranging from twenty to forty dollars implies a more traditional, professional production.”\(^\text{142}\) While considering the physical and visual experience of the viewer before and during the


\(^{142}\) Ibid., 60.
dance event, it is important to keep in mind these factors that may influence the viewer’s expectations for the event and interpretation of the dance work itself.

The visual experience with which I am concerned begins with the first visual engagement with the physical site of the performance. During the visual approach to the site, the viewer takes in the surrounding context. As the site comes into view, the viewer may compare the site to its adjacent buildings, the street, the sidewalk, the natural environment—all that affect the visual reading of the performance site. If the site of the performance is an interior space, as are the three case studies examined in Part II, then the viewer will first confront the exterior architecture. The language of the materials, the ornament, and the form of the architecture seen in conjunction with the surrounding built or natural landscape set up the visual expectations for the interior space.

The interior architecture establishes the visual framing of the performance and also determines the physical and visual experience of the dance from the audience. As the viewer enters the building, the entrance itself produces a visual and physical experience that steeps the anticipation of the performance site. If the performance site is not visible in the first space that the viewer encounters, then the progression of spaces leading to it also influences the visual and physical expectations of the site.

The site of performance is framed by all elements of the architecture—the language of the materials, the structural form, the use of ornament—as well as secondary elements of the architecture—acoustics, lighting, including fixed and movable instruments and access to daylight—become a part of the wholistic visual and physical experience of the performance. How the performance is seen is set up
by the physical arrangement of the audience in relation to the performance space. The seating establishes the actual sight lines from the audience, but also establishes the social and political environment of the performance space. As Foster writes, “In addition to the sense of intimacy or extensiveness, the feelings of familiarity or majesty that a space may convey, the physical arrangement of seating and performing affects the meaning of the event.”143

As we will see in the first case study, the stage in the Imperial Mariinsky Theater is a proscenium configuration. The structure of the house is hierarchical with the best seats for the tsar and royal family. The best seats are the private boxes, which are physically closest to the stage. From the boxes, the viewers look down at the stage. This positioning of the audience quotes the architecture of the Renaissance court theater, in which the audience sat above the performance space on raked bleachers. The boxes gave its royal occupants visibility, prominence, the religious implication of “upness,” while also allowing them the privacy to watch the dance in an exclusive audience, physically separated from the rest of the house. Again, exclusivity of this viewing experience, and the duality of privacy and visibility, refer to the social and visual experience of the earlier performance space.

The rest of the auditorium is also hierarchical. The best seats are the stalls that are elevated seats closest to the private boxes. The worst seats are in the pit and furthest away from the stage. The key to the hierarchical structure is the visuality of the space—seeing and being seen. This hierarchy is mirrored in the choreography of Marius Petipa that was designed for and performed in that space.

143 Foster, 60.
The Judson Memorial Church, being a non-traditional and non-permanent performance space, does not have a traditional stage or theater auditorium. Dance performances take place on the floor level with the audience. The audience seating is flexible. Viewers may sit on three sides of the performance space, on the floor, standing, or sitting on moveable pews. Some members of the audience may have better views than others, but there is no formally established hierarchy of seating since the architecture of the space gives every viewer an equal opportunity to try to get a good view of the performance, or to move to a better vantage point. Having no fixed stage and no fixed audience seating, the architecture of the performance space in the Judson Memorial Church enables a visuality that is fluid and chaotic.

The level floor and lack of a formal structural division between the audience and the dancers democratizes the relationship between them, creating a degree of competition to dominate the visuality in the space. The auditorium has no barrier to prevent the dancers from entering it, nor does the performance area have any protection from the disruption of an audience member cutting across the performance space. The audience is physically close to the performance and on the same eye level. The Judson Dance Theater forces choreographers to think critically about the visual interaction with the audience. Not only were these artists rebelling against the hierarchical visuality of classical ballet and the visuality of modern dance performance, but the confines and flexibility of the performance space also forced them to enact a critical choreographic response to visuality.

The Barbara Lee Theater at the Institute of Contemporary Art in Boston has a fixed stage and auditorium, but the interior look of the theater is not fixed. The stage
is surrounded on two sides by clear glass walls and a metal wall on a third side, revealing the Boston skyline and the dark blue waters of the Boston Harbor through the glass. The glass walls can be made more or less transparent to adjust the light coming in and to reveal or obscure the view outside.

The audience is raked above the stage in straight rows and is democratic in the sight lines from any given seat. The raking of the audience enhances the visibility of choreography that takes place on the floor and of floor patterns while maintaining visibility of the frontal view. The size of the performance space and lack of fly space leaves no room to rig curtains or masking to cover the light grid. Even the light and sound board are operated from an exposed area stage right of the top audience row. Although wings can be hung on both sides of the performance space, dancers waiting in the wings hardly escape the sight lines of the audience. The architecture accomplishes a changeable visuality while maintaining the fixed structural elements that establish the visual and physical relationship between the viewer and the dance.

The choreography that is performed at the Institute of Contemporary Art is supported by architecture that makes a modern departure from the hierarchical visuality of the neoclassical opera house, although it is ordered compared to the chaotic and confrontational visuality at Judson. Although the Judson Memorial Church and the Imperial Mariinsky Theater are contemporaneous in their construction and the design of the Institute of Contemporary Art in Boston, built more than a century later, does not derive directly from either of these earlier buildings, these three cases still mark distinct shifts in the visuality of dance practice and patronage in their respective periods. The analysis in the following case studies will mark through
the choreographic changes affected by the constructed visuality at each of these performance sites.
The Imperial Mariinsky Theater

The 2003 competition design by Mario Botta, for the New Mariinsky Theater in Saint Petersburg, Russia (Fig. 11) “uses the neoclassical presence of the old theater as an element of dialogue and contrast to convey to citizens the new reality represented by this extraordinary opportunity of hope and enrichment for the city.”144 The elliptical volume that is the base of the new building is clad with vertical blocks of golden sandstone set at different angles so that they seem to pick-up different variations in lightness and color from the sun. The historic theater connects to this elliptical sandstone-clad volume, above which a broad horizontal, rectilinear volume two stories high juts out via truss work cantilevered over the plaza with the new entrance to the theater and over the street. The new building design “expresses the concept of the city block through the alteration of stone cladding and vertical transparency.”145 By contrast to the old building that stands on top of the site, the new design seeks to complement its environment.

Although Botta’s design was never built, the modern design serves as a historical point of reference for the architecture of the original theater. If the dialogue of the new design with the old building conveys the new reality represented by the old design, then the old reality of the original Imperial architecture should also be revealed in this comparison. The use of materials and the use of geometric volumes—the sandstone-clad elliptical volume of the base and metal and glass

145 Ibid.
rectilinear volumes that extend above and out from it—contrast starkly to the material language of the original theater but also refer to it.

Like the New Mariinsky Theater design, the old Imperial Mariinsky Theater is also composed of distinct geometric volumes. As with the new building, the performance space is contained in the central volume of the building, which is also elliptical. The other volumes are rectilinear, but rather than hovering above and extending out from the central elliptical volume, they surround it. The central elliptical volume is visible over the top of the rectilinear volumes that extend symmetrically from the sides, but is dominated in the front by the main entrance to the theater. Unlike the entrance to the new theater, which does not stand out, but allows the geometric volumes of the building to stand out as the key elements, the entrance to the original building is the principal feature its Imperial presence and command of the site.

Overlooking Theater Square, the approach to the entrance of the Imperial Mariinsky Theater (Fig. 12) by foot, carriage, or now, by car, is ceremonious. The clear resemblance of the original theater to the Winter Palace (Fig. 13), the official residence of the Russian tsars from 1732 to 1917, gives it the connotation of palace architecture, as if to say that one who is entering the Imperial Mariinsky Theater is entering the palace of the tsar. The cupola of the theater building is even crowned with Apollo’s lyre and the Imperial crown. The symbol of Apollo’s lyre also appears crowning the cupola of the Paris Opéra. While the design for the new theater “uses different forms to evoke the bond between the theatre and its city,”¹⁴⁶ the original

¹⁴⁶ Botta, 236.
theater simply dominates the site. Rather than its volumes reaching out, the volumes of the Imperial Mariinsky Theater extend straight up.

Although the language of the materials and the use of ornament are in most ways consistent throughout the exterior of the Imperial Mariinsky Theater, there is a clear difference in the corporeality, or visual weight of the structure. On the lower corners of the building on either side of the entrance and also, on either side, the far corners of the wings, the use of horizontal rows of brick is visibly heavy, solid, or corporeal. By contrast, the vertical columns and open arches that rise above these heavy corners seem light. This pattern of corporeality and lightness is quoted in the design for the New Mariinsky Theater. The sandstone cladding on the elliptical base, like the layers of brick on the corners of the original theater, wrap around the building in solid horizontal layers. The horizontal top volume on the new theater design quotes the open arches and vertical columns with visually open glass windows and vertical bands of metal. For the new design, lighter materials take the place of lighter forms in the original theater.

From the main entrance, the viewer enters the booking office (Fig. 14). The space is long and narrow with medium height ceilings, like a hallway, with light beige walls trimmed in simple white painted wood that contrast with the decoratively patterned light and dark wood floor. Brass sconces and a simple crystal chandelier light the space. The modest hallway leads to a broad stairway (Fig. 15). Here the walls and columns supporting the entryways are embossed with fruit and floral designs that complement the floral ornament of the brass railings and the lamp that lights the top of the stairway. Higher arched ceilings and the more elaborate
ornamentation than in the preceding hallway space resonate with the grandness of the building façade and encourage anticipation of the performance site.

From the stairs, the viewer enters White Hall, designed by architect Victor Shreter. The ceilings are higher and the ornamentation still more elaborate than that of the stairway. The space is lit by two large chandeliers and a row of tall windows that extend the height from floor to ceiling. In addition to the elaborate carved wood ornament embossed on the walls and ceiling, the center of the ceiling is decorated by a colorful plafond by artist Piotr Lambin that depicts the Muse of Dances surrounded by ethereal dancers. The floor is a glossed wood pattern framed in blue carpet with two red stripes. The décor of White Hall complements that of the façade and the Main Hall more so than any of the preceding interior spaces.

While most viewers would enter the Main Hall from White Hall, royalty and their guests would proceed through small private hallways to enter their boxes. The Great Princes Hall is one such entrance. The high white walls of Great Princes Hall are punctuated with decorative columns and lined with peacock blue and gold upholstered chairs (Fig. 16). Small, but elegant, gold and crystal chandeliers light the passageway, which is met at the terminal by a wall niche holding a white statue.

The ceiling of the Main Hall is ornamented by a painted plafond by the artist Fracciolli from professor Dousie’s drafts. In the center of the plafond, a huge, three-level, bronze luster sparkles. The bronze luster and the candelabras were funded by a wealthy merchant Pleske, who was awarded with a gold medal from the tsar “for attention to an outstanding artistic deed.” The proscenium stage (Fig. 17) is framed in gilded gold. Carvings of the faces of Comedy and Tragedy mark the two high corners
and a florally framed clock marks the center. The curtain is made of elaborate fabrics colored gold, peacock blue, purple, and patterned.

Jack Anderson, the author of *Ballet and Modern Dance*, writes, “With its chandeliers and its color scheme of gold, white, and peacock blue, the Maryinsky was a handsome theatre, beloved by its patrons. In certain ways it resembled a private cub, since most of the seats were reserved for nobles, diplomats, bankers, and prominent merchants.”

One of the famous ballerinas of the Imperial Ballet, Tamara Karsavina recalls in her memoirs of *Theatre Street*:

To obtain a seat, a petition to the Chancery of the Imperial Theatres had to be filed; the chance of success was so small that big premiums were constantly offered by advertisement to the original holders of the stalls. The subscribers held tenaciously to their prerogative. No outsider could ever penetrate into their first row of stalls without a Sesame, a favour of a balletomane friend. Even then, a new face would be looked upon as an intrusion and eyed suspiciously by the neighbours. The seats were handed down from father to son, the name balletomane, once given in derision, was becoming almost a hereditary dignity.

The “stalls” to which Karsavina refers are the sections of seating in the three tiers of balcony seats (Fig. 18). The viewers from these seats would have the vantage point to see the intricate floor patterns of the corps de ballet. The position above the stage approximates the seating for the courtiers and royalty watching the private court ballets of the western European Renaissance and Baroque periods. A position in the balconies, in both a literal and figurative sense, elevated persons of wealth and status to the approximate level of the tsar and royal family, whose private boxes were

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separate and distinguished, yet built at the same height as the tiered stalls. From this position, the most important balletomanes could see from and be seen at the elevation of the royalty.

The hereditary ownership and exclusivity of the stalls demonstrates a perpetuation of the social system under Imperial power that is imitated in the architecture of the Imperial Mariinsky Theater. Karsavina remembers that the owners of the stalls found themselves in a position of power. She writes, “Artistic reputations were made and undone by casual remarks of the leaders of the stalls.”149 Since the Imperial Ballet School and the theater itself were owned by the tsar, having the power of artistic censorship over the ballet is in a way equivalent to having power in the Imperial court. Again, this social structure supported by the architecture resembles the social structure supported by the architecture of the private Renaissance court theaters.

The pit and gallery of the Main Hall lack an architectural predecessor in the Renaissance court theater. Karsavina describes the occupants of these seats as something of a howling uneducated mob of ballet enthusiasts. She writes, “Erudition and the terminology of the ballet they may have lacked, but in spontaneity of admiration, in fantastical transports of young enthusiasm they far outstripped their colleagues of the stalls. While the stalls preserved a certain decorum, the gallery spared not their throats.”150 Although the voices of these lesser balletomanes were certainly audible, their political strength was in their numbers. The individual in the pit or gallery was an invisible member of the mass. The de-elevation and the non-

149 Karsavina, 126.
150 Ibid., 127.
compartmentalization of the seating in the pit and gallery have a democratizing effect on this body of viewers.

The Tsar Box (Fig. 19), which was owned by the royal family until the communist revolution, is the largest private box, positioned at the level of the second tier at the back of the auditorium. The box is elaborately decorated with gilded gold carved designs and classical sculpture and headed with a big emperor’s crown. Pale blue drapery with gold tassels hung about the gold frame of the box cause it to resemble a small proscenium stage, perhaps indicating that the royal family is positioned there to be seen, or possibly highlighting the mirroring of the royal family on the stage (Fig. 20).

Anderson writes, “In the theater, the men in the audience always remained standing until the tsar entered his box and, out of respect, after the performance they remained in their places until he had departed. Curtain calls were arranged according to a strict pattern: first, the ballerina bowed to the tsar’s box, then to that of the theater director, and finally to the general public.”

Along with many other western European fashions, ballet was imported to Russia during its first period of Westernization. Peter the Great founded his new capital city, Saint Petersburg, looking west on the Gulf of Finland as a symbol of modern Russia and a clean break away from the old ways of Moscow. In Saint Petersburg, the first performances in 1723 took place in a wooden theater before moving to the Imperial residence. After 1737, performances were held in the Winter

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Palace built by architect Bartolommeo Rastrelli.\textsuperscript{152} Dimitri Shvidkovsky, author of “Catherine the Great’s Field of Dreams: Architecture and Landscape in the Russian Enlightenment,” writes, “The development of Russian architecture during the eighteenth century was determined to a large extent by state policy in the field of construction.”\textsuperscript{153} A series of special laws implemented through the Senate, Synod, governors, and police captains of Imperial Russia enabled the emperor in power to shape the architectural image of every new building and the shape of every formal plan for every town in Russia. With the tsar or tsarina serving as the matter-of-fact Imperial architect, the building periods during the reigns of Peter the Great, Anna I, Elizabeth I, and Catherine the Great (and to a lesser extent, the brief reigns of Peter II and Peter III) reflect the personality of the respective monarch.\textsuperscript{154}

In 1766, dance received the official patronage of Catherine II, who established the Directorate of the Imperial Theaters with jurisdiction over opera, drama, and ballet.\textsuperscript{155} Under her reign, the Saint Petersburg Bolshoi (“Big Theater”) opened in the 1780s, followed by an extravagant theater in the Hermitage next to the Winter Palace, and the Maly (“Little Theater”), which was a venue accessible to everyone. In 1832, Nicholas I dedicated the Alexandrinsky Theater designed by Rossi to the Tsarina and in 1836 he ordered the rebuilding of the Bolshoi.\textsuperscript{156}

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\textsuperscript{154} Ibid.
\textsuperscript{155} Anderson, 100.
\textsuperscript{156} Beauvert, 68.
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At the end of the nineteenth century, Tsar Paul I banned Italians from performing in Russia and dedicated the Circus, built in 1855, to Russian opera. The Circus burned down in 1859 and was rebuilt by Alberto Cavos, who had just rebuilt Moscow’s burned-down Bolshoi Theater. As the author of *Opera Houses of the World*, Thierry Beauvert describes, “The new house resembled an antique temple, complete with colonnaded portico and pediment, as well as a hipped roof. On the interior, moreover, Calvos opted for a gilded auditorium designed to enhance the theatricality of the imperial loge, surrounded by 1,600 seats distributed mainly along five tiers of boxes open at the sides in the French manner.”

The Circus, which came to be known as the Mariinsky Theater, remained loyal to the Russian repertory, while other theaters favored French and Italian works, for example.

By the mid-nineteenth century, although there were several privately run companies, the most prestigious ballet troupes in Russia were attached to state-supported theaters and the directors of these troupes were appointed by the tsar. All the dancers were, in a sense, considered Imperial servants. The male students in the state ballet academies were considered equals to young men in the military and naval academies. They wore similar uniforms and were distinguished with the insignia of Apollo’s lyre, rather than an image of an anchor or crossed sabers that were the insignia for the naval and military academies.

There were state-supported companies in both Saint Petersburg and Moscow. The two companies were rivals in the nineteenth century and continue to be, drawing partisan crowds. In Moscow, performances of the Imperial Ballet were held in the Bolshoi Theater. In Saint

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157 Beauvert, 68.
Petersburg, the Imperial Ballet performed in the Bolshoi and the Mariinsky Theaters until the Bolshoi was condemned and all performances were then confined to the Mariinsky, whose present building opened in 1860.¹⁵⁹

In the history of the Imperial Ballet, several ballet masters were invited to Russia. The most important of the foreign choreographers for the Imperial Ballet was the Marseilles-born Marius Petipa. Raised in a family of itinerant dancers who traveled to perform wherever there was work, Petipa learned early on to be resourceful as a performer and a diplomat. In 1847, Petipa was invited to be the premier danseur in Saint Petersburg.¹⁶⁰ There, in addition to dancing, he served as a choreographic assistant to both of the dance masters Perrot and Saint-Leon in succession. Petipa’s first success as an independent choreographer was The Daughter of Pharaoh, which amounted to a five-hour extravaganza produced in less than six weeks of rehearsal. Having impressed the tsar, Petipa was given full charge of the Saint Petersburg state ballet troupe after the departure of Saint-Leon in 1869.¹⁶¹

Despite a wide range of narrative subject-matter, Petipa’s choreography was largely formulaic. Even when a story could be told more concisely it was Petipa’s style to stretch a narrative out over three or four acts. Near the end of every ballet occurred a divertissement—quite literally a diversion from the plot. While it was never too difficult to find a logical pretext for the divertissement, which might represent a wedding or visitors to a castle, this fantastical suite of dances, typically involving the entire dance company, served in no way to advance the plot. Another

¹⁵⁹ Anderson, 102.
¹⁶⁰ Ibid., 101.
¹⁶¹ Ibid., 103.
structural element found near the end of each ballet was the grand pas de deux for the ballerina and the premier danseur. The grand pas de deux strictly followed a pattern of four sections, each choreographed within the prescribed style of movement per section to produce an effective display of contrasting movement types. The grand pas de deux began with the entrée—an imposing entrance that served for the ballerina and premier danseur to present themselves to the audience. Second in the sequence, the adagio was a stately formal duet that emphasized sustained, lyrical movements. Next came the male and female variations—first the solo for the premier danseur, then the solo for the ballerina. Finally, the coda reunited the duet with quick, flashing steps.162

Petipa used a variety of movement styles, including classical dancing, emphasizing the balletic vocabulary, caractère (character) dance, which derived from folk forms, and demi-caractère dance, which was classic dance embellished with elements of character dance. The pure classical dancing was reserved for the primary dancers in the ballet—the hero and heroine—and for dancers representing fairies, spirits, or other magical creatures. The character dances resembled traditional Russian dances such as the mazurka, czardas, or tarantella. These dances, performed by the corps de ballet, often represented the daily activity of particular occupations and social classes. Performed by smaller groupings or as solos, a character dance might represent personal idiosyncrasies or eccentricities. The demi-caractère dance would be used for comic or soubrette roles.163

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162 Anderson, 104-5.
163 Ibid., 105.
Another classic movement element of Petipa’s choreography was mime. One type of mime used was a heightened choreographic stylization of realistic gesture. The second type was a codified sign language that all nineteenth-century ballotomanes would have been able to read. Some of the signs were as obvious as shaking a fist to represent anger, or placing a hand over the heart to pledge one’s love. Other less obvious signs were as codified as the sign language for the deaf. For example, crossing one’s wrist above one’s head and then lowering the crossed wrists in front of the body meant that the person to whom one referred ‘must die;’ circling one’s face with one’s hand meant that the person to whom one referred was ‘beautiful;’ circling one’s hands above one’s head meant ‘let us dance.’

Petipa often worked at home, inventing groupings by arranging pieces on a chessboard. Such a compositional technique lent itself well to the audience view from the stalls and boxes. The sight lines from the pit and gallery would not have a steep enough angle to see the dance in plan the way Petipa could view the floor patterns and groupings on his chessboard.

Anderson writes that “ballet is an art of movement that comes fully alive only when it is presented on stage.” Unsaid but clearly evident in this statement is that “stage” has a particular connotation of a type of stage.

164 Anderson, 105.
165 Ibid., 103.
166 Ibid., 99.
Judson Memorial Church in the 1960s: The Sanctuary

The Judson Memorial Baptist Church (Fig. 21) was the largest church built in the so-called “American Renaissance” period of the late nineteenth century. The design by the New York firm, McKim, Mead, and White in 1892, was inspired by the classical design elements of the quattrocento churches of Florence and early churches in Rome. The church is built of Roman brick with terra cotta ornamentation. The article that appeared in the New York Times on the occasion of the first church services in the Memorial Church, called the building “extremely graceful in its architectural lines, being Romanesque in style.” The part of the building that is the church, commands the corner of Thompson Street, facing Washington Square South.

Visible from the outside, but more vibrant from the interior when lit by oblique rays of daylight, the stained glass windows of the church were designed by John La Farge (Fig. 22). The baptistry was built by Herbert Adams from the plans of Augustus St. Gaudens.

The building was constructed as “The Judson Memorial,” named for the father of the pastor at the time, the Reverend Dr. Edward Judson. His father, Adoniram Judson, had been one of the first missionaries to Burma in 1811. Believing that “a ministry in Greenwich Village could be as difficult a challenge as the conversion of

Burmesse Buddhists,” Edward Judson placed his father’s Burmese translation of the Bible in the cornerstone of the church building.

From its origins, the Judson Memorial Church was dedicated to “community service and refraining from proselytizing in a community that was primarily Italian Catholic.” One attempt to reach out to the greater Greenwich Village area was the installation of a fresh water drinking fountain to provide clean water to the poor in that area of the city. The church was also the site of activism, opening its doors to support labor union organizing in the 1930s, and for the civil rights movement, school integration and programs for drug addiction rehabilitation in the 1960s.

After World War II, the church minister from 1948 to 1955, Robert Spike, initiated an arts program that he hoped would revitalize the congregation, which had been severely depleted. The church began hosting plays, concerts, and painting exhibits. The next minister, Howard Moody, in 1956 organized the Judson Gallery, which displayed the works of contemporary Pop artists. Independent groups, such as the Judson Group and the Judson Studio Players performed theater pieces in the church during Moody’s ministry. Some plays were performed in the sanctuary itself. In 1960, Moody founded a resident theater group, the Judson Poets’ Theater, and hired Al Carmines, a recent graduate of the Union Theological Seminary, to run it.

When Carmines was first approached by dancers wanting to put on a concert in the church, he replied that “they’d have to give their first three concerts in the gymnasium, and the board of the church would have to decide whether it was proper

170 Banes, 36.
171 Ibid.
172 Ibid.
173 Ibid.
to do in the sanctuary." Carmines recalls being “scared of the kind of dance they did,” as he was only familiar with ballet and roughly familiar with Martha Graham, while he had never seen the work of Merce Cunningham.

The choreographer Robert Dunn, who sought to present his students’ dances for the first time as professional work at Judson, suggested calling the concert “A Concert of Dance.” Dunn felt that this title invoked a historical tradition of non-narrative dance, breaking away from theatrical dance, such as classical ballet and the works of modern choreographers like Martha Graham and Anna Sokolow. The title suggests musicality as a driving force and also suggests the closeness of the audience and performer. Dunn says, “It was admitted that the performers were in the same room as the spectators.”

The following passage describes the architectural environment of the first dance concert at the church:

The concert was given in the sanctuary of the church, one flight up from the street-level entrance on Washington Square. A curtain hung down from the edge of the choir loft, at the opposite end of the room from the altar, serving as a divider between the lobby-entrance and the performing space in the sanctuary proper. It also served as a backdrop for the ‘stage,’ which simply was the space in front of the curtain, and an architectural rhythm for this setting was provided by four columns supporting the loft. The audience walked into the lobby, across the bare space, and to their seats. At that time, the church still held traditional ‘high Baptist’ services. There was a pulpit and a large cross at the altar, at the south end of the sanctuary, and the congregation sat in moveable pews facing the altar. The Poets’ Theater performed in the choir loft, not on the sanctuary floor. The dancers disturbed the arrangement of the sanctuary by moving the pews around and putting

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174 Banes, 37.
175 Ibid.
176 Ibid., 38.
them against the altar, facing north, and along the sides of the room, clearing the rest of the space for the dancing.\footnote{Banes, 39.}

In \textit{Democracy's Body: Judson Dance Theater 1962-1964}, Sally Banes writes, “Even though the dances sometimes demanded technical rigor or called attention to a choice or repudiation of technique, the dances at Judson often seemed more accessible, metaphorically more free and matter-of-fact, than those of the older modern dance.”\footnote{Ibid., 133.} She explains that this pragmatism was largely circumstantial. Judson provided a space where artists without money for special lighting instruments, elaborate costumes, a professional technical crew, or the greater cost of a well-appointed theater could make do with what was available. The Judson Church was available, simple lighting was inexpensive, and the artists there worked as a collective to fill the technical roles of stage managing, costume design, musical direction, and graphic design. Banes adds that “The same aesthetic that could value the nontechnical movements of an untrained dancer could value the simplicity of clear, plain lighting and of leotards or street clothing (Fig. 23).”\footnote{Ibid.} The non-hierarchical, non-traditional “studio” and “theater” spaces provided by the church opened an avenue for dance workshops run by collective procedures and nonevaluative criticism. The dancers at Judson were able to “reject the typical hierarchy of the modern dance company and the traditional mystique that prevailed in the relations between artist and audience in the dance world.”\footnote{Ibid.}
In a 1990 interview with Yvonne Rainer and Sara Rudner for the television program, Eye on Dance, hostess Celia Ipiotis asks Yvonne Rainer about the relationship to the audience in the Judson Dance Theater performances. Rainer recalls that it was very important to Steve Paxton that the style of performance at Judson (and in the Cunningham Company) “had this glazed kind of look of separation from the audience.” Rainer’s famous solo piece from Trio A, plays on this idea of not looking out at the audience. Rainer says that one of the ploys of this choreography is not to look at the audience, and that this is a commentary on what she considers balletic “posturing”—that is, always playing to the audience. She recalls that Twyla Tharp had instigated a play on this posturing in some of the earlier group pieces at Judson. “So, whenever the body had a frontal approach, the head moved elsewhere or you closed your eyes. So, you were always looking up, or to the sides. Never confronting. Never straight at the audience.”

“For audience members, the only way out of a concert of dance at Judson Memorial Church in the 1960s was across the performance space. Yvonne Rainer told Lyn Blumenthal that, in a concert (Fig. 24) shared with Steve Paxton and David Gordon at which she first presented Trio A: ‘People trudged unhappily, disgruntled, disconsolately across the space to get out. You had to be pretty disgusted—pretty unhappy to make a spectacle of yourself in that way.’” In other words, the limitations of the space established a hierarchy that put the performers in power and subordinated the audience, but also, to a degree, blurred the physical separation

182 Ibid.
between audience and performer, since the dance space was physically accessible to the audience.

In a 1963 concert review in *The New York Times*, “Judson Dance Theater Seeks New Paths,” Allen Hughes writes, “It was Mr. Morris’s conceit to come out and stare at the audience for what seemed like hours while a tape recording of a story about corralling cows was played.” This example is a clear contrast to the “glazed look” of separation from the audience that Yvonne Rainer describes in the choreography of her own work and that of Steve Paxton and Twyla Tharp. “Mr. Morris” most likely refers to Robert Morris, who was choreographing and dancing at Judson in 1963 according to Sally Banes’s writing in *Democracy’s Body: Judson Dance Theater 1962-1964*. His dance highlights yet another choice about the visual engagement with the audience that is made possible by the flexibility and confines of the performance space.

Hughes describes the Judson Dance Theater collective as “a loose collection of people who find present stage-dance conventions stultifying and who seek to find new modes of artistic expression in the name, if not the usual form, of the dance.” Despite the fact that the Judson Dance Theater dancers, both in the traditional and the most literal sense, do not dance on a “stage,” this description still uses the term “stage-dance” to specify the historical and contemporary dance forms from which Judson Dance Theater departs. The implication is that the redefinition of dance that is being shaped by the new and experimental choreography of Judson Dance Theater

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185 Banes, 170 and 177-78.
186 Hughes, 34.
may not belong on a “stage” or perhaps that the non-traditional stage (or non-stage performance space) in the sanctuary of Judson Memorial Church enables a departure from the conventions of “stage-dance.” These implications are supported when, in closing, Hughes writes, “the Judson Dance Theater will doubtless continue its unorthodox activities in its unorthodox, but hospitable, location.”

The performance space at Judson Memorial Church has structurally remained an unorthodox performance venue lacking a permanent stage or fixed seating in the decades following the Judson Dance Theater. However, a 1999 press release in The New York Times “Classical Music and Dance Guide” for “Judson Memorial Church: ‘No Limits!’” advertises a celebration of Judson Dance Theater at which some of the “stars” of its time will return to perform reconstructions of their famous dances along side the works of new choreographers and states that the proceeds from the event will go toward “a new dance floor and more arts programs at the Judson.” A dance floor is a non-permanent structure—usually a sprung wooden platform about an inch high that is assembled from jigsaw puzzle-like pieces and then covered in a smooth rubbery material called marley. Although a dance floor would maintain the level eye contact and the physical proximity between the performers and the audience in Judson, it would also delineate a performance space that is distinct from the audience space, thereby setting certain boundaries between the two (Fig. 25).

187 Hughes, 34.
Institute of Contemporary Art, Boston:

Barbara Lee Family Foundation Theater

“This glass-and-steel cube makes looking at the water as much a part of the experience as the exhibits inside, and has transformed this formerly desolate slice of South Boston waterfront since its opening three years ago,” states a 2010 article in *The New York Times.* Featured as the number one “biggest arts stories of the decade” in *The Boston Globe,* the writer for the *Globe* claims, “For decades, Boston was seen as a buttoned-up, red-brick-and-granite city, more interested in Monets than the modern. That changed on Dec. 10, 2006, when the ICA’s new glass-walled home opened on the South Boston waterfront.”

The new Institute of Contemporary Art (ICA) was the first new museum built in Boston in a century. The 65,000-square-foot building includes 18,000 square feet of galleries, a performing arts theater, a restaurant, a bookstore, education and workshop facilities, and administrative offices. Architects Diller + Scofidio (+ Renfro) write, “The design negotiates between two competing objectives: to perform as a dynamic civic building filled with public and social activities, and as a controlled, contemplative atmosphere for individuals interacting with contemporary art.”

Driving to the ICA on Northern Avenue it is easy to miss the building. The sign reading “ICA Public Parking $12 Enter Here” is the most visual marker for the

191 Incerti, 174.
entrance. From Northern Avenue, cars must drive down an auxiliary service road (Fig. 26) and enter through one of the public parking lots (either the ICA parking lot or one of several others). The pedestrian is more likely to catch a glimpse of the building across the water next to Anthony’s Pier Restaurant from the sidewalk along Seaport Boulevard. After catching this glimpse, however, the building becomes visually obscured from the sidewalk, set off by a vast area of public parking lots. As the viewer gets closer, the building becomes visible through the tall fence along the sidewalk, securing the parking lots.

While the landlocked area of Boston may appear to be “buttoned-up” in red brick and granite, the built environment on the harbor-side is a mixture of modern glass-and-steel architecture on the land and older New England style wood-frame architecture on the piers. The ICA is built over the Boston Harbor, just set back from Anthony’s Pier 4 (Fig. 27).

In the description of the ICA published by the architects, Diller + Scofidio (+ Renfro), they explain the relationship of the Harborwalk, a wood-clad pedestrian area that runs along the Harbor and maintains an architectural continuity, becoming part of the building:

The Boston Harborwalk borders the north and west edges of the ICA site. This surface which belongs to the citizens of Boston, is metaphorically extended into the new building as a primary architectural element. The Harborwalk becomes a pliable wrapper that defines the building’s major public spaces. It folds up from the walkway into the ‘grandstand’ facing the water, it continues through the skin of the building to form a stage, then turns up to form the theater seating, then seamlessly envelopes the theater space, ultimately slipping out through the skin to produce the ceiling of the exterior
public ‘room.’ This ambiguous surface moves from exterior to interior, transforming public into semi-public space.\(^{192}\)

The pedestrian enters the building from the wooden walkway. From the entrance (Fig. 28), the viewer can see the water framed by the inclines of the outdoor and indoor theaters. The main entrance is basically through the back of the building. The front looks over the water. All views from inside the building are directed over the water. Diller + Scofidio (+ Renfro) write:

> The building distributes the view of the harbor in small doses: compressed at the lobby entry, scanned vertically by the glass elevator, choreographed in the theater performances, denied in the galleries, revealed as a panorama at the north gallery crossover, and edited to only the texture of water at the mediatheque.\(^{193}\)

The one view that looks back at the land is from the lobby (Fig. 29). A viewer entering the ICA to see a dance performance may first sit in this lobby for a pre-performance talk with a dance critic and choreographer. Folding chairs are set up facing the view of the city across the sea of parking lots. This space reminds the viewer of the journey on land to this building and sets up a contrast to the directed views of the water and the art that they are about to experience. Architect Charles Renfro says “we tried to use the building itself as a medium, transforming it into an optical instrument.”\(^{194}\)

In an interview with architects Elizabeth Diller, Ricardo Scofidio, and Charles Renfro, Nicholas Baume, Chief Curator of the Institute of Contemporary Art and editor of *Super Vision: Institute of Contemporary Art/ Boston*, comments, “A

\(^{192}\) Incerti, 174.

\(^{193}\) Ibid.

\(^{194}\) Baume, 183.
remarkable number of your past projects have activated vision in very direct ways.” He asks, “Why has this direct engagement of vision been so important to you?”

Elizabeth Diller responds, “I’ll start by saying these examples fall under a broad research into visuality which spans all our work, from architecture to performance to installation to video.”

Diller defines visuality as the difference between “the biology of human sight and its historical and cultural context.” She says that their architectural and performance works have attempted to interfere with spatial conventions in order to heighten the attention to visuality in everyday built settings. In gallery and performance spaces Diller says the architect must consider “who was looking and who was looking back.” Even before their practice together formed, Diller and Scofidio had engaged in a dialogue about vision. Scofidio says, “I grew up on books. She grew up on television. In my world, smells, sounds, and sights were on equal footing. In hers, vision dominated.”

Renfro disagrees that the visual sense has always been dominant in our culture. Regardless of the generational discrepancy between these two viewpoints, the three members of the firm agree that they are now dealing with building architecture for an ocular-centric culture. In the ICA, they tried to create “a flow of experiences that sensitize visitors to new ways of looking.”

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195 Baume, 179.
196 Ibid.
197 Ibid.
198 Ibid.
199 Ibid.
200 Ibid., 183.
Scofidio states, “We began the project with the assumption that architecture would neither compete with the art nor be a neutral backdrop. It had to be a creative partner. The first step was to reconcile the paradox: the museum wanted to turn inward; the site wanted to turn outward. The building had to have a double vision.”

In the final design, the outwardness is focused in choreographed views of the water that support the interior of the building as a backdrop and a source of visual and *haptic* rhythm that from the moving water. Scofidio goes on, saying, “Visual overstimulation has a desensitizing effect: the more stimuli before our eyes, the less we see. The single focus of a two-hour movie leaves me visually drained. But the interrupted focus of a museum visit intensifies my vision. The space between the galleries is no less stimulating than what’s in the galleries.”

Diller says, “The building is conceived as a valve to regulate the experience of the site over time, distributing it in small doses. The views of the harbor are always partial and fleeting, they follow you and hide from you.”

The materials that Diller + Scofidio (+ Renfro) use are engaging to the other senses, both *haptic* and *optic*. To get to the Barbara Lee Family Foundation Theater, the viewer either travels up the stairs from the lobby. The stair case is not even visible from the lobby. The viewer must enter the stair shaft through a marked door across from the ticket counter. This is the same stairway that a viewer would take to see the art gallery on the top floor. Unlike the ceremonious staircase in the Imperial Mariinsky Theater, the staircase leading two stories to the 3rd floor where the theater

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201 Baume, 186.
202 Ibid.
203 Ibid.
entrance is a space of efficient movement, not formal procedure. Nevertheless, the staircase is optically engaging with the use of fluorescent tubes of lighting extending vertically through the center of the coiled staircase. The rectilinear geometric pattern of the coiling staircase is dizzying and optically enticing if the viewer looks up or down while ascending. Haptically, the event of the level changes is engaging. The wooden cladding on the exterior wall reminds the viewer of their journey from the outdoor wood-clad space and creates an expectation of seeing the water again.

The other way to ascend to the theater space entrance is by the glass elevator. Renfro says, “The elevator is so large it’s unfathomable. It may be the largest glass elevator ever made. It’s conceived as a slice of the building that moves up and down. It’s unexpected, exhilarating and disorienting. It gets you ready for the art.”

On the third floor (Fig. 30), the lobby between the glass elevator, the service elevator and the top of the stair case is minimally clad with signs indicating the program of the 3rd floor: “Theater.” The viewer then enters through a door to a narrow hallway (Fig. 31) lit in blue light. The narrowness of the space and the lighting remind the viewer of the water and create an anticipation for the relief of the expansive view of the water. As Diller + Scofidio (+ Renfro) describe the Barbara Lee Family Foundation Theater:

The 300-seat multi-purpose theater (Fig. 32) is fully glazed on its north and west faces, allowing the harbor view to become the backdrop for the stage. Light and view can be controlled in accordance with performance needs, from transparency and view, to filtered light and no view, to total blackout.

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204 Baume, 190.
205 Incerti, 174.
Scofidio says, “The harbor collapses onto the theater’s glass walls as an animated scenography. While the theater could be made into anything at any time by anyone, it starts as a spectacle that can be turned on and off.”  

As a case study, the Institute of Contemporary Art in Boston is distinct from the previous two cases not only because the building was constructed so long after the other two, but also because there is no resident dance company of the Institute of Contemporary Art in the way that the Imperial Ballet of Saint Petersburg was at the Mariinsky Theater and the Judson Dance Theater collective was at the Judson Memorial Church. Nevertheless, the short period in which Institute of Contemporary Art has attracted a repertoire of dance performance serves as a timeframe to test the analysis that is supported by the histories of the first two case studies. Rather than look at the choreography that is developed and supported by the architecture of the performance site, in this case, I will look at the choreography that is drawn by the performance site and therein supported by the architecture.

Diller says that the architecture has the responsibility to “speak in the voice of the institution” and to “raise the consciousness of the public.”  

Ultimately, once the architecture is built, the architect had no control of how the building is used. “The museum selects what is important for the public to see; the architecture creates what is important for the public to experience.” A large number of performing artist are attracted to the ICA by World Music, Inc.’s CRASHarts. World Music, Inc. was established as a non-profit organization in 1990 to connect performing artists from

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206 Baume, 187.
207 Ibid., 183-86.
208 Ibid.
cultures around the world with audiences in greater Boston. CRASHarts is a division of this organization that was formed in 2002. The division changed its name to World Music/CRASHarts to better reflect its synthesis into a multi-disciplinary performing arts organization.

To understand the developing repertoire of the Institute of Contemporary Art, I will look at the first three years of programming at the Institute of Contemporary Art (2007-2009). Despite the apparent eclecticism of the list of invited artists, their common grounds reveal the distinction of the Institute of Contemporary Art as a performance venue relative to other theaters, even in the Boston area. An article in *The Boston Globe* recounting the year of dance performances in Boston the first year after the Institute of Contemporary Art opened calls the programming at the Institute of Contemporary Art “odysseys of the imagination.”

To draw a contrast to the “ICA’s new theater, with its walls of glass framing the Boston Harbor,” the more classical venues for dance in Boston are introduced by the article in the following manner: “On the other side of the Harbor—way on the

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210 Ibid.

211 Ibid.
other side—Boston Ballet was living a fantasy of its own...”212 The language of separateness and distinction between the Institute of Contemporary Art and the other performance venues in Boston draws a sharp line between the programming one would expect to see at the ICA and the theaters “on the other side of the Harbor.” A similar line of separation is drawn in the theater culture of New York City such that The New York Times had a long tradition of not allowing dance critics to write reviews from venues below 14th Street.

The Stephen Petronio Company opened the first season at the Institute of Contemporary Art with a suite of Boston premieres—BLOOM, Bud Suite, and The Rite Part (January 12th-13th, 2007). The Rite Part is an excerpt of a dance Petronio choreographed in 1992 set to Stravinsky’s score for Rite of Spring. When Vaslav Nijinsky’s choreography for Rite of Spring debuted in the program of Les Ballets Russes in 1913, audiences were startled by the heavy movement largely inspired by primitive Russian tribal and folk dance and the darkness of the subject matter (pagan sacrifice)—in both aspects, a major departure from the classical school of dance (the Imperial Ballet) in which Nijinsky had been trained.

To a Globe correspondent reporting on the upcoming performances in the Institute of Contemporary Art, Petronio said, “At the time of [Rite of Spring]’s composition, it was very radical to present the anthropological concept that a pagan sacrifice promoted agricultural bounty. But when I created my work, at the end of the 20th century, it seemed very retro to suggest you could get the corn crop going with the sacrifice of a virgin. So I wanted the women in my piece to be very sexual and

212 Singer, 1.
strong and move things forward socially. They express anger and ferocity and determination.”

For Petronio, whose provocative work “once inspired as many boos as cheers,” this tour marked a point in his career when the provocative work that he continued to pursue was finally being accepted by audiences in the United States, Europe, and Australia. Although Petronio believes that he has stayed true to a vision, his work had certainly developed in the course of his career. From the dominant subject matter of sexual politics in his company’s early works, in 2001 with City of Twist, a piece dedicated to New York City after the tragedy of Nine Eleven, Petronio began to develop “new qualities of tenderness, intimacy, and vulnerability that had never been apparent in his work before.” These elements are drawn out in the two new works presented on the program at the Institute of Contemporary Art.

Petronio says, “For Bud Suite, I was thinking about how people handle each other, emotionally and physically. I then went from that physical and erotic place to the more spiritual in BLOOM.” Bud Site is set to a preexisting piece by Rufus Wainwright, while an original score with lyrics taken from poems by Emily Dickinson and Walt Whitman was commissioned from Wainwright for BLOOM. When possible, Petronio arranges for a local youth choir to accompany the piece singing the lyrics. In the case of the performance at the Institute of Contemporary

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214 Ibid.  
215 Ibid.  
216 Ibid.
Art, a recording of Wainwright’s “angelic” voice singing the lyrics “reflects the sound of a youth choir” in stead, says Petronio.217

March 19th–21st, 2010, choreographer Stephen Petronio returned to present the Boston premier of *I Drink the Air Before Me*. In the earliest sections of the dance, the dancers move in a circular pattern composed of simple patterns of groups, repetition, translation and transformation of a fluid, curvilinear, balletic vocabulary of motion. As these rotating patterns progress, the choreography increases in complexity that creates a discrepancy for the viewer about where to focus. From the raked audience seating, the floor patterns are clearly legible. Certainly the choreography could be seen wholistically, but the subtleties of the movement and often the duets and trios that form beg to be examined more closely. To this end, the highlighting of particular sections of the choreography by the lighting design was effective in directing and focusing the viewer’s gaze. The highlighting of solos, duets, trios, or larger groups never was as extreme as a follow spot, but much more subtle. For a dance inspired by weather, this subtle highlighting could be imagined as flash lighting in a quiet sky while the storm is still far in the distance especially with the hazy view of the Boston Harbor in the background of the Barbara Lee Family Foundation Theater.

In November 2007, the Institute of Contemporary Art announced their performance program for the coming winter and spring 2008 season. On the program was the Bill T. Jones/Arnie Zane Dance Company’s Boston premier of *Chapel/Chapter*. In the fall of 2008, The Bill T. Jones/Arnie Zane Dance Company presented the Boston premier of *Another Evening: Serenade/The Proposition* (Fig.

217 Gladstone, 1.
In the winter and spring of 2009, choreographer Heidi Latsky, a longtime principal member of the Bill T. Jones/Arnie Zane Dance Company presented GIMP.

Keigwin + Company presented the Boston premier of Elements. Choreographer Larry Keigwin and his company “explore contemporary life and pop culture with works that are accessible and entertaining, while remaining innovative and intelligent.” Choreographers Zoe Schofield and Juniper Shuey presented their Boston premier of the devil you know is better than the devil you don’t. These choreographers “construct three-dimensional art that melds precise dance performance with evocative video and photographic techniques, juxtaposing restrained wildness and delicate fury.”

The French choreographer of Algerian descent, Rachid Ouramdane presented his Boston premier of Distant... In the fall of 2008, James Devine, the Guinness Book of World Records “Fastest Tap Dancer in the World” made his Boston premier of Celtic Tap at the Institute of Contemporary Art. The Philadanco, a dance company performs “joyous and adventurous works with universal appeal that blends African-American-based dance with ballet, jazz, and modern dance,” presented the Boston premiers of works choreographed by Rennie Harris, Christopher L. Huggins, Milton Myers, and Gene Hill Sagan. Chunky Move presented their Boston premier of I Want to Dance Better at Parties. On April second and third, respectively, of 2010, choreographer Xavier LeRoy presented two distinctive works at the Institute of Contemporary Art: Self-Unfinished and LeRoy’s own inspired version of Le Sacre du Printemps.
The concert program at the ICA is a diverse mix. Some of the artists, like Bill T. Jones and Stephen Petronio are more daring in their choreography and use of multimedia than dance companies like Philadanco. The architecture treats the audience like viewers in an art gallery. The first row of seats has no separation from the performance space itself. The small stage area and lack of fly-space limits the lighting grid to a small plot and even if masking is put up for in the wings, the audience is so close to the stage that there is no way to totally hide lighting instruments.

The performance space has a rawness that attracts traveling companies who must be willing to adjust their choreography to a small space. For example, Petronio originally designed *I Drink the Air Before Me* to be performed at The Joyce Theater in New York. Lighting supervisor for the piece and Visiting Instructor at Wesleyan University, Burke Wilmore told me in conversation, “In the Joyce, we had a 300 light plot to work with, so I had to cut several systems to accommodate for the smaller theater at the ICA. It’s not always an easy thing to adjust for touring.” In larger theater spaces, such as The Center for the Arts Theater at Wesleyan University, *I Drink the Air Before Me* also used a large piece of scenery that was impossible to rig at the ICA. The result in this change was the choreography was more haptically engaging and less optically dominating because there was a more intense focus on the dancers. On the proscenium stage with scenery, the dancers were removed, visual objects. In the Barbara Lee Family Foundation Theater, the audience in the first few rows could hear them breath and smell their sweat.
Conclusion

What is the fundamental relationship between architecture and the *dancing body*? This thesis explores this question by tracing an abridged history of *haptic* and *optic* perceptions of space from the body perspective and the perspective of architecture. Partnerships between dancers and architects are examined and the affect of the built performance space on *new* and *restaged* dances is considered in three case studies: The Imperial Mariinsky Theater in Saint Petersburg, Russia, The Judson Memorial Church in New York City in the 1960s, and Barbara Lee Family Foundation Theater at The Institute of Contemporary Art in Boston. In these case studies the *visuality* of performance and the social-political implications of space are discussed. Ultimately, the reader should consider the implications of these discussions for discovering how to promote physical and emotional wellness in built spaces through *haptic* empathy and non-static *visuality*.

We started with a discussion of the duality of *haptic* and *optic* experiences of space. As theater spaces historically have became more *optic* than *haptic* for the audience, the discussion of *visuality* in these spaces became important. In Part II, we see that the architecture of performance spaces focus the *visuality* of the audience on the program of viewing dance. The particular *visuality* of the performance space affects the artistic, social, and political effects of the choreography.

This body of research began with a search for a fundamental relationship between dance and architecture. In conclusion, I ask why this matters. From an artistic standpoint, the relationship between choreography and architecture can be
fodder for movement material. There are useful implications for site specific artists as well as for dancers who perform on a traditional proscenium or deep stage.

For an architect, the relationship between dance and architecture should enlighten the *haptic* engagement of any moving human body and architecture. The implication of this study should not be that all architecture should move. I am not curious about the ideal theater space or the ideal dance studio space. I am interested in creating spaces of wellness for the *dancing body* and all moving bodies in everyday architecture.
Figure 1. From Rudolf Laban’s *Choreographie*: The Octahedron, Vertical, Sagittal, and Horizontal Planes, The Cube, The Icosahedron and its inner structure
Figure 2. From P. Rameau: *Le Maître à danser*
Figure 3. From the *Ballet Comique*
The Art of Dancing.

Of the Stage, Room, or School.

The Stage or Dancing-Room, I shall represent by an Oblong, as in the Figure A B C D, of which the upper end is A B, the lower end C D, the right side B D, and the left side A C.

The Presence of the Body.

The Posture or Presence of the Body, is to have respect to that part of the Room, to which the Face or Fore-part of the Body is directed, which I describe by the Figure F G H I, of which F G shews the two Sides of the Body, H the Face or Fore-part, and I the Back or Hinder-part.

Figure 4. From John Weaver's translation of *Orchesographie*
PLANS AND MODEL OF THE SYNTHETIC
"TOTAL THEATER," 1926

This theater provides a stage in arena form, a proscenium and a back stage, the latter divided in three parts. The 2,000 seats are disposed in the form of an amphitheater. There are no boxes. By turning the big stage platform which is solidary with part of the orchestra, the small proscenium stage is placed in the center of the theater, and the usual set can be replaced by projecting scenery on twelve screens placed between the twelve main columns supporting the structure.

Plan showing the use of the deep stage.

Plan showing the use of the proscenium stage.

Plan showing the use of the center stage.

Figure 5. From The Theater of the Bauhaus: The Total Theater
The laws of the surrounding cubical space. Here the cubical forms are transferred to the human shape: head, torso, arms, legs are transformed into spatial-cubical constructions.
Result: ambulant architecture.

Figure 6. From Oscar Schlemmer’s “Man and Art Figure”: Amblulant Architecture costume

The laws of motion of the human body in space. Here we have the various aspects of rotation, direction, and intersection of space: the spinning top, snail, spiral, disk.
Result: a technical organism.

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Figure 8. From Oscar Schlemmer’s “Man and Art Figure”
Figure 9. From Oscar Schlemmer’s “Man and Art Figure”

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