

Time, Speed and Perception: Intervals in the Representation of Architectural Space

by

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Bachelor of Architecture
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ROTCH

Submitted to the Department of Architecture
in Partial Fulfillment of the Requirements for the Degree of
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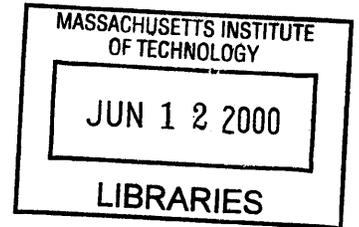
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ABSTRACT

Although the notion of "space" in architecture is a relatively contemporary one, this research looks at the difference between the conception and representation of space and the actual material reality. With contemporary thought brought about by the modern measure*, as architects formalize their ideas in representations, this paper argues that there arises a tendency to quantify and objectify the represented space and discount the experiential nature of the space. This research was initiated in reaction to this tendency to conceive of space as a given, formal static container in search of a wider notion of space as a product of interactions between various dynamics. Using small time based representational design experiments as well as specific precedents of conceptions and representations of space as running parallel points of reference; this investigation explores the element of time as one of the possible components of the various dynamics that produce space. Specifically, a non-chronological look at the modern, contemporary and pre-modern notion of time was taken to explore possible alternative conceptions and representations of space and time, contending that space is neither static or exclusive of time, nor is it a stage set for speed. In other words, this paper concludes that space and time are first and foremost products of experience.

Thesis Supervisor: Takehiko Nagakura
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*the measure created by the technological advances and the subsequent tendencies for scientific investigation and explanation that brought about the advancement.

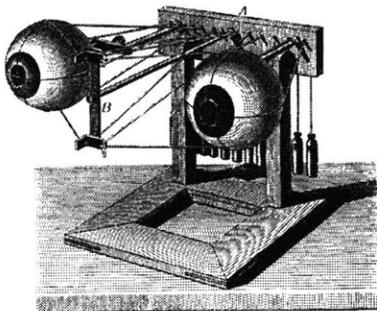
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00 INTRODUCTION

Perhaps I should start with a question: what is space? Although the idea of space as a primary architectural concern is a relative, contemporary notion, the conception of architecture's bond with space has evolved throughout history. The German Philosopher Friedrich W. J. von Schelling (1775-1854) in his *Philosophie der Kunst* likened architecture to spatial music where he contrasted the interval in music as an interval of time, to the interval in architecture as an interval in space.¹ Auguste Schmarzow in his early twentieth century writings on aesthetics argued that architecture's *raison d'être* was the artistic manipulation of space.² As Louis Kahn once said, "architecture is the thoughtful making of spaces;"³ the list goes on.

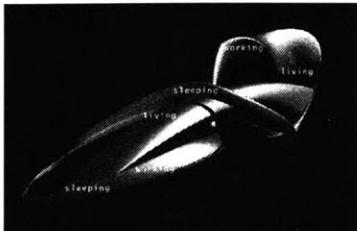
Today, we hear and see from the descriptive language of architects that space can be fluid, folded, delayed, layered, collapsed, positive or negative. But, how did we come to think of space as some abstract material that can be manipulated in so many 'wonderful' ways? As if through some instrumental process or methodology, it can be quantified, manipulated, represented and in the end shaped to our will. What happens when we move from conception to material reality? Within this translation, "the word 'space' has to cover a whole variety of conditions, and it is here that a confusion arises between concept and reality."⁴ Does this conception of space, influence the way we make space? Perceive space? And if so, what about the influence of the tools of representation that aid in this translation? At a time of rapid transformation and acceleration brought about by our technological culture, can architects operate without discounting the experiential and time based conception of space, avoiding the aesthetic and technological reduction of architecture into some quantifiable commodity to be part of the global flows of capital?



The Ophthalmotrop, as published by Helmholtz in 1857, illustrates stereoscopic vision. Studying the movement of the eyes, however, was still insufficient for completely explaining the experience of space.

Bettina Kohler
Architecture History as the History of Spatial Experience.

This thesis is not an instrumental investigation. It is a reflective inquiry, which attempts to gain a small but not altogether insignificant understanding of the complex link between conception, representation and perception of space and their difference to the material reality. With the explosion of digital technology and the growing proliferation of new tools of representation and design, I argue that architects are faced with an increasingly difficult balancing act between the creative potential afforded by representations “to suspend reality or question and explore their inherent fiction,”⁵ and the representational tendencies of instrumental and reductive objectification to discount the experiential conception of space. This research was initiated in reaction to what is argued as a growing tendency to conceive of space as a given, formal static container in search of a wider more open notion of space. Using small time based design experiments and precedents of Japanese conception and representations of space as a point of reference, this research explores the notion of time as one of the possible keys in this search. Specifically, a non-chronological look at the pre-modern, modern and contemporary notions of time was taken to explore possible alternative conceptions of space and time as products of experience.



Möbius House Diagram - Project 1993
UN-Studio

This research is not a nostalgic cry for the past, nor an attempt to establish yet another new praxis, methodology, ideology or rhetoric. The goal of this research is to step back and gain a better awareness of where we are in and outside our field of architecture and to take a critical look at where we may be going. It is a personal search for a path in investigating space not as a pre-disposed static container but a complex product of the interactions between various dynamics, thus initiating a richer more open discourse in engaging the changing social conditions of an increasing global technological culture.

01 PRE-MODERN PRECEDENTS

*Art is the science of discovering new kinds of representations.
Science is the art of finding good representations of real things.*

Yoichiro Kawaguchi

In the complex creative process of design, architects are armed with many tools of representation in the endeavor of synthesizing and conveying their ideas. From initial exploratory sketches that set the process in motion, to study drawings and models that document the process of inquiry, to the construction documents and models that become “[instruments] to answer questions rather than to pose them,”⁶ representations convey the architect’s thoughts and aspirations and communicate their intentions of the building *to be*. In most cases the representations are not the physical end all, they are in essence just what they are re-presentations, they describe in another form, material and method, the character and nature and spirit of the architecture they represent.⁷ As Thomas Fisher states in his essay *Communicating Ideas Artfully*: “how and why we make a drawing or model . . . are directly related to our philosophy of architecture. Is design a process or product, an image or an idea, an art or a service? The answers to such fundamental questions relate strongly to the way in which a design is presented.”⁸

A close dialectic relation between the techniques of representation and the philosophy of architecture/space can be traced through the development of the conception of “space” and its representation in different cultures throughout history. In fact, precedents in the development of the representation of space not only reflected the development of the culture’s conception of space but their existential view of themselves as well. In other

words, representations not only become the agents for a particular culture's conception of space, they also became agents for their existential ideas of self and the world.

In this chapter, the development of the Renaissance conception and representation of space and the traditional Japanese conception and representation of space were chosen for investigation for the following reasons. First, I believe that culture in the broadest sense is an important element in the dynamics of conception, I chose these two precedents from the two historical cultures that I feel a part of because they gave me an additional lens in my investigation of the conception of space. More importantly though, as I will illustrate in the following, I specifically chose these two pre-modern precedents because, pertinent to my argument, the factors in the development of the Renaissance perspective leads through into the modern notion of time and the factors in the conception and representation of the traditional Japanese notion of space or *Ma*, leads through into a more contemporary notion of time.

THE DEVELOPMENT OF THE RENAISSANCE CONCEPTION AND REPRESENTATION OF SPACE

Yet they gain nothing if they believe that just because the finger is pointing at the moon that finger is the moon itself.

Yoka Daishi, Shodoka



*Christ Carrying the Cross, Simone Martini
c. 1340*

In his seminal book *Perspective as Symbolic Form*, Erwin Panofsky illustrates the development of the perspective parallel to the development of the different symbolic, determinate conceptions of the world. In his own words, he argues that it is not enough to distinguish “different periods and spheres of art, not only whether they have perspective, but also what kind of perspective they have.”⁹ In Western classical antiquity, Panofsky argues, art had been “. . . exclusively a figural art, which only recognized as artistic reality what could be not merely seen but also grasped.” Thus, spatial unity was secondary to a structural or group composition where the three dimensional separate elements were not spatially uniform but were, as he states, “separate objects to the extent that space is not experienced as something that transcends and reconciles the opposition between bodies and non-bodies, but only as what is left as it were between bodies.” So the artist, Panofsky concludes, creates a perspective by putting one thing on top of each other or behind another in order to control distance, where the space that is depicted is a spatial aggregate, not yet a continuum of a higher order system as we see developed in the unified world of Renaissance perspective.

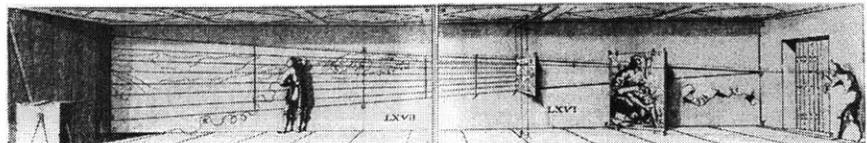
In contrast, Renaissance perspective, based on Euclidean geometry, is a mathematical objectification of space and “the gathering of strength of modern anthropocracy” ceasing the view of the universe as theological. It is a product of an age of great thinkers, artists and tremendous advances in

knowledge, marking a watershed in the rise of modern science and the beginning of the objectifying tendencies characterized by the modern measure. As Panofsky states, it is a "triumph of the human struggle for power, denying distance; it may be understood equally well as a fixing and systematizing of the external world, [where space becomes a continuous quantity consisting of three physical dimensions] and as an extension of the ego's sphere."¹⁰ Interestingly, Panofsky illustrates two fundamental problems with the Renaissance perspective that resonates with this paper's argument against a representational tendency for technical ordering and objective quantification of subjective space. An argument I will detail further in this paper. In his words Panofsky states, that the perspective in order ". . . that it may insure the formation of a fully rational - that is, an infinite, unchanging, and homogenous space, tacitly makes two very important assumptions: first, that we see with a single motionless eye: second that the plane section through the cone of sight is an adequate reproduction of our visual image. The fact is, however, that these assumptions involve an extremely bold abstraction from reality (if we may call "reality" in this case the actual subjective visual impression). For the structure of an infinite, unchanging, and homogenous -in short, purely mathematical- space is directly opposed to that of psycho-physiological space."¹¹



Above: *Flagellation of Christ*,
Piero della Francesca 1452

Right: *Niceron's Door, Perspective*



MA – SPACE/TIME

Ma: "the natural distance between two or more things existing in a continuity" or "the space delineated by posts and screens (rooms)" or "the natural pause or interval between two or more phenomena occurring continuously" Iwanami's Dictionary of terms

Thus the word MA does not describe the West's recognition of time and space as different serializations. Rather, in Japan, both time and space have been measured in terms of intervals.

According to Western notions, space is three-dimensional and a four-dimensional world results from the addition of the time element to the spatial dimensions. In Japanese thought, however, space is composed of strictly two-dimensional facets. Depth is created by a combination of two-dimensional facets. Time-scales (flows) measure the spaces between these facets. In other words, in Japan four-dimensional space is visualized as the result of combining two two-dimensional facets and two time-measurements. The basic reason for the use of the word MA to express both time and space seems to be that the Japanese have understood spaces as an element formed by the interaction of facets and time.

-Arata Isozaki

Originally, the ideogram for ma consisted of the pictorial sign for "moon" - not the present day "sun" - under the sign for "gate."

For a Chinese or Japanese using language consciously, this ideogram, depicting a delicate moment of moonlight streaming through a chink in the entrance way, fully expresses the two simultaneous components of a sense of place: the objective, given aspect and the subjective, felt aspect.

-Gunter Nitschke

門 gate

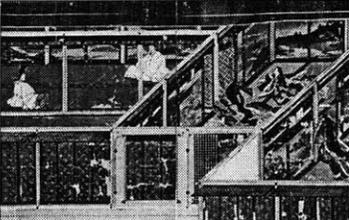
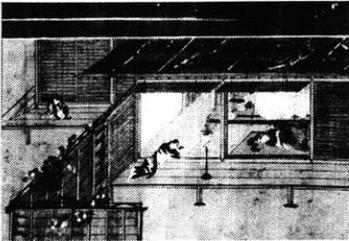
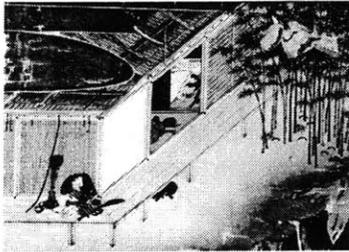
日 sun

月 moon

In contrast to the western development of a modern, mathematically determinate conception of an absolute, regulated and quantifiable space, as introduced in the Renaissance and then by Cartesian geometry, the traditional Japanese conceptions of space or *Ma* (literally, space/time) gives rise to both spatial and temporal formulations. Departing from the modern and strangely similar to contemporary theories of time and space,* in Japan

*I argue that the Renaissance conception of space can be thought of as reflecting the start of the modern conception of time as the Japanese conception reflects the present contemporary notion of information-time characterized by instantaneity, flux and duration. "

space and time were never fully separated but were conceived as correlative and omnipresent.¹² In other words, the Japanese conception of space could not be perceived independently of the element of time and time was believed to exist only in relation to movements or events. This notion is reflected in the traditional Japanese system of building where space could be thought of as an open field in nature where an array of structure on an abstract three-dimensional modular grid, sets up a potential of use based upon the manipulation of the sliding plane enclosures. These planes, made up of varying opacities and textures, would be manipulated to define visual and spatial relations, configurations, and enclosures depending on its potential use, creating a spatial dialogue of interaction with the inhabitants.** Much like the temporal qualities of the season, the space, which may be reset for interaction, becomes a phenomenon in time where the events and experience become the important products of the non-absolute space. Thus it becomes possible to expand or compress experiential time through the reduction or acceleration of speed and the obstruction or enhancement of visual and physical movement. In other words "the size of experiential space [in Japanese architecture] is not so much determined by its physical dimensions, but by [the] concrete experience of the quantity and quality of the events contained in it."¹³

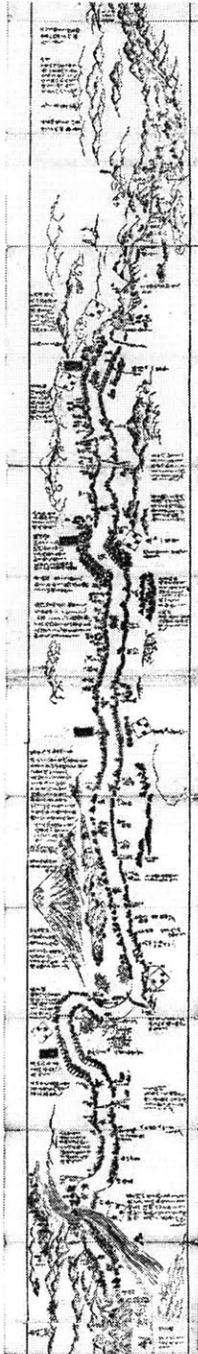


Scenes from the Kasuga Gongen Reigen Ki, Emaki 1309

**It should be noted that in the Japanese conception of space, the basic building module (one *tatami*, or one *ma*) of the space was already given. The entire structure of traditional Japanese architecture was based on this unit, which is a 2:1 ratio approximately the dimensions of a man's body. The floor area was described in the number of *tatami* mats or *ma* and the transformable enclosures were of the same dimensions. It wasn't necessary to depict space as a quantifiable object since it already was set up that way from the beginning, yet as stated before, the range and the number of layers of transformable delineating enclosures acknowledges the temporal nature of Japanese space. A space, which is always being redefined by the interaction of the physical space, the inhabitants and the events occurring inside and outside of it.

Bottom: A section of an Eighteenth-century tourist map of the Tokaido, the main eastern seaboard route between the old capital, Kyoto to the west, and the new capital Edo (Tokyo) to the east. The scroll is an example of the Japanese Emaki (picture scroll) representational form of a linear time structured sequence. The user is to literally scroll or "move the space" as his or her eyes follow the graphic events as displayed between the narrative descriptions and the plan of the route. Instead of a straight orthographic representation of the space between Kyoto and Edo, many Emaki examples of this famous route would depict Mount Fuji as seen from each of the over fifty outposts along the route.

Source: Gunter Nitschke From *Shinto to Ando*



In understanding this conception of space, it is interesting to note that, unlike the perspectival depiction of Renaissance space, traditional Japanese depictions of space were exclusively in the isometric, a representational form ideal in depicting the Japanese building system and spatial conception.* Furthermore, as "space was perceived as identical with the events or phenomena occurring in it,"¹⁴ it is interesting to note the development of representational techniques that depict a sequential transformation of the space in relation to its time flow. One such popular technique was the *Emaki* (literally picture scrolls), a linear representational technique combining the viewer's physical manipulation of a scroll, and his or her construction of the sequential narrative through the visual reading of a series of isometric (object centered) drawings and text. Typically, different isometric views of the same physical space may be re-presented several times, depicting different spatial organizations by the transformation of the variable partitions depending on the time and events they supported. The key to the *Emaki* form of representation is that each episode would be seen separately as the viewer would literally scroll and view only portions of the entire scroll, thus creating his or her own spatial and temporal sequence.

*Unlike the perspective where the viewpoint of the representation coincides with the viewer, the axonometric or isometric projection relates the viewer to the object's actual dimensions while removing him/her from the viewing angle; thus removing the correspondence between representation and perception. It is a difference between a subject centered and object centered representation where unlike the perspective showing what we see of an object, we are not influenced by our way of perceiving the axonometric and isometric projections. In fact, as Bernhard Schneider writes in his essay *Perspective Refers to the Viewer, Axonometry Refers to the Object*, "axonometric and [isometric] representations typically involve a number of optical illusions; i.e., there is more than one way of reconstructing a visual image from the drawing while the drawing is true to the actual object it depicts, it leaves room for several different 'visualizations.' Thus the 'abstract' character of the representation arises merely out of a certain 'undescriptiveness,' in other words: the difficulty in reconstructing from the axonometric and [isometric] representation a definite, unequivocal concept of the represented object."¹⁵ This abstractness or ambiguity as I will argue, is a potential component source of creativity, creativity that is too often being lost in the way we use and perceive the digital representations within the design process.

02 THE PARADOX OF THE MODERN MEASURE (OBJECTIFIED SPACE, OBJECTIFIED TIME)

Systems of representation, which enable us to describe the world (including the worlds of the past and, possibly, of the future), is the stuff of theory or, to use the medieval and Renaissance term, of science. Through these descriptions, we acquire knowledge of how worlds work, were made to work or might be made to work, and subsequently, of how worlds ought to be made if we would like them to work in a manner we desire.

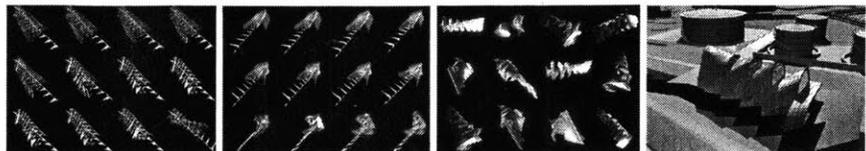
Alexander Tzonis

Contemporary thought is endangered by the picture of nature drawn by science. This danger lies in the fact that the picture is now regarded as an exhaustive account of nature itself so that science forgets that in its study of nature it is merely studying its own picture.

W. Heisenberg

As the different cultural conceptions of space are reflected in the different representations throughout a culture's history, the inverse maybe argued that with the increasing ability to depict more "real" representations, the representations themselves are beginning to affect the conception of space. Today, where new paradigms of communication are being created by the growing influence of media brought about by our technological advances; the powerful digital tools of representation are evolving ever more rapidly to display ever more "virtual" representations of space. They have become powerful visualization and simulation tools for those who strive to create "realistic" representations to convey their intentions. We have seen the

H2 House - Project 1993
Greg Lynn



many powerful uses these visualization techniques have afforded, yet in the early creative stages of the design process, one may argue that these often beautiful and captivating representations, in their tendency to objectify, endangers the generative and creative potential of the designer. Similar to the Renaissance's mathematical perfection of the perspective, this is a problem reflected in our modern measure as instrumental and methodological advancements in science and technology allows us to represent more "real" depictions of our world. The technological "realism" of the still and moving representation traps us into believing that we are actually depicting reality, instead of realizing that it is an instrumental representation of reality and experience.

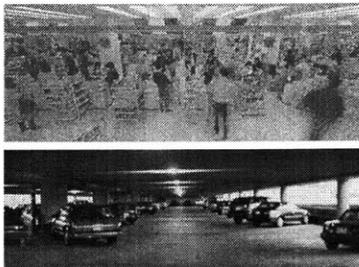
In the complex endeavor of architectural design, the difficult transition between the conception of space to its material and experiential reality can never be fully controlled or anticipated, much less by one person or one profession. The architect, in order to operate, inevitably rationalizes and limits a set of criteria and methods in order to manipulate the elusive matter of space. To help bridge the limits to our mental capacity, we externalize our thoughts and intentions in representations, suspending reality in order for us to creatively explore their inherent fiction, actively framing and reframing the design problem. Paradoxically, contemporary thought brought about by the modern measure tends to instrumentalize and quantify space through the same scientific process that has brought us technological advances and the rapid evolution of new tools and countless positive advances in our lives. Thus architectural language such as folding, fluid or positive and negative that objectify the space become the means to which we conceive, represent and perceive of space. Yet do we actually experience these spaces as folded, fluid, or positive and negative? Although one can never fully represent the experiential nature of the space,

are we becoming trapped in limiting ourselves to a formal or aesthetic criteria, reifying space and forgetting or banishing the element of time?*

The supermarket is a design for shopping that was developed by a world controlled by speed and made possible by speed. The supermarket is very much a product of speed . . . , while modern design gives consideration to speed, we still have not perfected designs that account for when the speed drops to zero.

Hiroyuki Suzuki

Just as the technological acceleration and “anthropocracy” has created a tendency to objectify space, the technological acceleration has also created a culture that has changed the conception of time. Speed is a creation of the modern measure and it drives to control time, objectifying it and thus consequently a new concept of space develops that is different than our predecessors. For example, we build faster boats, faster trains, and faster planes in order to go from point A to point B quicker and faster than before. Our global society is a society that aims at killing time and thus kill space. This is not to say that time or space is all of this one type, surely when we slow time down, we actually come into contact with designs and spaces that support and thrive in these speeds. We most likely all enjoy this, yet similar to paying money to do “nothing” and vacationing in remote locations where time “slows down,” it is becoming a luxury. Thus, time becomes very much a commodity for exchange where capital can be spent to save time enabling the buyer to spend it at some other time. Unfortunately, as theorists like Marc Augé have so pointedly illustrated in his essays on “non-places,” we are building and designing more and more physical spaces



Top: Daiei Supermarket
Image source: Hiroyuki Suzuki

Bottom: MIT Vassar Street Garage

*I argue that it is not so much the tool or technology in general, but how we perceive the product of the tool, or in this case representation, and thus the tool and technology.

that allow for and support these faster speeds, and transitions, thus we find ourselves spending more and more time at the bus stop, the supermarket, the airport, the highway, the garage etc., or in other words, “non-places.”

James Corner, in his essay *Paradoxical Measures: The American Landscape*, despite illustrating some of the positive aspects brought about by our technological advances, also points out to the consequence of our global, technology-driven society. He states, “on the other [hand], both the uniqueness and relatedness of things and places have been objectified and diminished through the work of modern measure, with the deleterious consequences of alienation, meaninglessness, and experiential homogeneity (through the application of modern design standards, for example, every place begins to look alike).”¹⁶ This is the negative affect of globalization that is manifest in our built environment. Some architects in reaction have embraced transformation and have decided to work, at times blindly, within the changing climate, others have turned away or stepped back, nostalgically reverting or romantically searching for the cozy comforts of history and tradition. I argue that there must exist a middle ground somewhere, a middle point of view that can, with critical enthusiasm, look toward the future without losing perspective of the values of things past, in order to actively use and critically shape new tools and techniques for a richer more meaningful production of architectural space. As stated before, this thesis is an attempt to re-interpret elements of the pre-modern notion of time as a possible spring board into a forward looking search for a richer and more diverse conception of space and time as a product of experience.

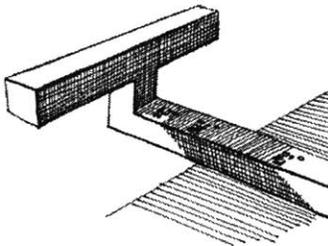
03 THE PRE-MODERN AFFINITY: PHENOMENOLOGY AND EMBODIED EXPERIENCE (AND THE MYTH OF ORIGIN)

We knew that the museum would always be full of surprise. The blues would be one thing one day; the blues would be another thing another day, depending on the character of the light. Nothing static, nothing static as an electric bulb, which can only give you one iota of the character of light. So the museum has as many moods as there are moments in time, and never as long as the museum remains as a building will there be a single day like the other.

And the cloud that passes over gives the room a feeling of association with the person that is in it, knowing that there is life outside of the room, and it reflects the life-giving that a painting does because I think a work of art is a giver of life. So light, this great maker of presences, can never be . . . brought forth by the single moment in light which the electric bulb has. And natural light has all the moods of the time of the day, the seasons of the year, [which] year for year and day for day are different from the day preceding.

Louis I. Kahn, Light is the Theme

THE PRE-MODERN NOTION OF TIME



Egyptian Shadow Clock
Source: *A Walk Through Time: The Evolution of Time Measurement.*

If our modern conception of time directly affects our conception of space, what can be learned from the pre-modern conception of time? First of all, "the modern awareness is based on units of time, such as hours or seconds. The pre-modern concept of time was a relative one, always understood in relation with larger units such as days, seasons, or years. Time was primarily understood as relative to continuous time cycles, rather than in terms of abstract time units."¹⁷ In other words the non-absolute or relative interval of time measured by natural phenomena such as the sun, the weather, the seasons, the tide, weathering and decay, life and death. As the Japanese conception of space was always based on time, representational examples of this pre-modern conception of time can also

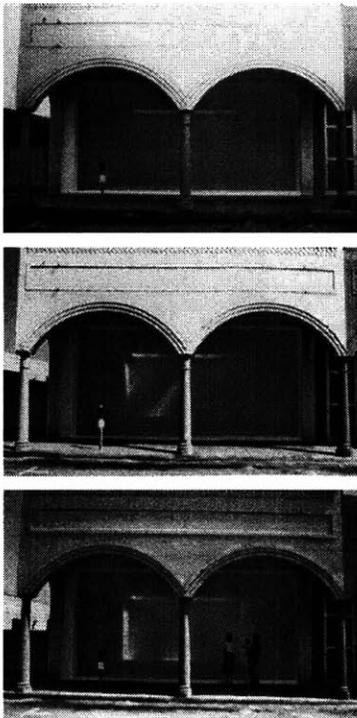
be found throughout the different precedents of the Japanese representation of space. For example, seasonal depictions of spaces were a favorite motif in the *Emaki* picture scrolls, as well as in the popular representational form of *Hakkei* (literally eight views.)* The *Hakkei* is a depiction of a series of eight views of a specific place at optimal times, reflecting the Japanese appreciation of the beauty of the place measured not only by the place but by the place and time. In other words as Hiroyuki Suzuki notes, “a beautiful place [was] not to be measured simply in terms of the design of space, but in terms of the design of space/time . . . the significance of space was affected by changes in time, and [the Japanese] sought to appreciate space at the best moment in time, be it autumn or sunset.”¹⁸

*Oumi Hakkei, Shiko Imamura
(Tokyo National Museum)*



*Originated in China around the 11th Century during the Song Dynasty, an era of great cultural influence for the Japanese. It became a popular art form for Japanese artists and men of letters who found indigenous locations of similar scenic views depicted in the Chinese counterpart. The *Hakkei* would later evolve to depict various subject matter such as gardens, urban scenes, temples, or even buildings to be appreciated at their most beautiful.

This affinity to connect back to our pre-modern state, is not exclusive to the representational cultures that express this, but, I argue, is a more universal and anthropological desire to connect to what is perceived as external to man's hands, away from abstract time, back to "natural" time. This is reflected in works for example, by architects such as Tadao Ando or Louis I. Kahn or by artists such as Robert Irwin or James Turrell. Their genius is in their showing a strong understanding of this pre-modern conception of time and allowing for external forces to animate the spaces they create.

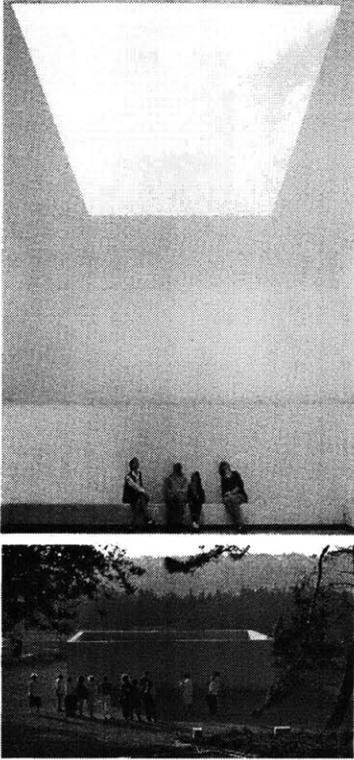


One Wall Removed, 1980
Robert Irwin

This affinity to connect back to the pre-modern state, also resonates to the phenomenological search for the *essences* that existentialist philosophers such as Maurice Merleau-Ponty argued for when they emphasized the "lived experience in grasping the nature of language, perception and the body."¹⁹ Although, he like Husserl argued for a "bracketing" or "a phenomenological reduction" of extraneous opinions or external existence of the objects of consciousness in order to search for the "essence" of embodied experience, these architects and artists by the careful reduction of elements, I argue achieve a similar effect of essences through a designed "bracketing."

As noted earlier, architects today are armed with many tools of representations throughout their design endeavor. This paper by no means is an attempt to suggest that a specific type of representation is more valid

* It is interesting to note that Tadao Ando first won notice during the seventies for his Ashiya House and then later for his Koshino House. During this period in Japanese architecture, Ando and his contemporaries such as Toyo Ito and Kazuhiro Shinohara were designing reinforced concrete houses with internalized organizations that turned away from the outside urban chaos that proliferated in wake of the thirty year rapid growth during Japan's post war industrialization (for example see *Ito – U House*). Out of all of his contemporaries, it was Ando who would go on to perfect this technique to critical acclaim.

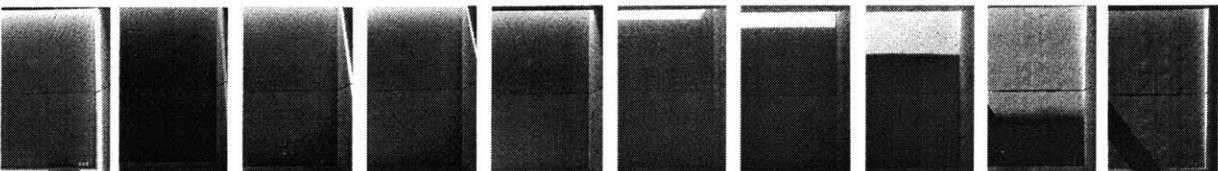


Skyspace, 1998
James Turrell

then the other, yet, as Alberto Pérez-Gómez notes, instead of being seduced by the instrumental ability to represent space, or even trying to re-present a “pan-optic vision of the world,” architects should first try not to replicate “reality” in our re-presentations. In other words, he argues that “[representations] are a spectacle of something only by being a spectacle of nothing,” and that by not being “auto-figurative” they can start to “break the skin of things” in order to show, as he quotes Merleau-Ponty, “how the things become things, how the world becomes a world.”

This was the inspiration for the design experiments when the thesis was first initiated. The representations were not experiments to convey the design of a building, they were experiments in constructing the architecture of the experience. In no way are they intended to convey all of the complex design criteria that architects are faced with and that current representational forms (e.g. plan, section, elevation, construction documentation) perform adequately in showing. These experiments are an attempt at showing not the building itself but the elements that create the architecture, and the experience, thus, not just showing what to see but how to see.

As the experiments were being planned, the phenomenological search for essences seemed to re-signify and reinforce a connection with the Japanese conception and representations of space that had been a key point of reference for this research. The first experiment, which is called *trees*, reflects this as explained in the following.



Koshino house, 1981/84
Tadao Ando

experiment 1 trees



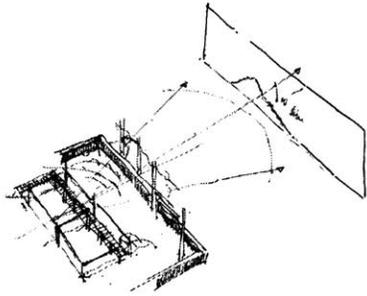
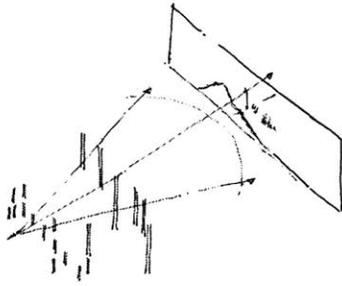
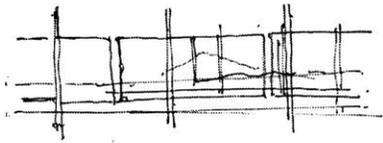
In this experiment, I had in mind the following Haiku poem by the famous poet Basho. Haiku is a highly structured form of poetry with three lines of five, seven and five syllables respectively. The subject matter in the Haiku, as in most Japanese representational forms, is seasonal (temporal) and expressed as purely descriptive and factual recordings of clear, plain observations. The imagery of the laconic text, the attention to the present immediate moment, allows, almost forces, the reader with his or her imagination to complete the construction of the space. As the Russian filmmaker Sergei Eisenstein notes in his own studies of Japanese representational traits: “the simple combination of two or three details of a material kind yields a perfectly finished representation of another kind - psychological.”²⁰ In other words, “it is the readers who make the haiku’s imperfection a perfection of art.”²¹

*Misty Fall
Can't see Fuji
Interesting.*

Basho Matsuo (1644 ~ 1694)

Contemplating this poem, I thought of how to this day, the iconography of mount Fuji had been so ingrained in the spatial-temporal psyche of the Japanese people as reflected in the Tokaido Emaki. In fact, I realized that this phenomena is reflected in the many examples of the use of Shakkei (borrowed scenery) architectural garden technique to incorporate Mt. Fuji and other views of natural beauty into one’s home or garden. Shakkei is a technique where the physical boundaries of a given space, is expanded to incorporate the view of a distant landscape (a technique which became very popular in spatially limited Japan). Typically, this view would be framed by an artificial perspective that is created by a foreground such as the posts of traditional Japanese structure, a middle ground of some carefully manipulated “natural” landscape element and the view of the distant landscape. This perspective (similar to the pre-Renaissance perspective), would collapse into a space that was constantly in flux changing with the view and “natural” element. In this experiment, I tried to represent this phenomenon in a two-dimensional form, by taking an existing photograph and creating a simple

animation of the different layers using a web animation program. The key was to keep the representation as simple as possible, allowing the interaction between the wooden posts in the interior structure, the window frames and the garden trees to set up an extended frame for the exterior and distant view to animate in real time.



above: Shakkei diagrams
right: animation frame



Upon completing this experiment, I coincidentally came across a description of a project by a French architect named Patrick Berger who had attempted a similar technique in his understated design for the UEFA Headquarters building on the shores of Lake Geneva. He states:

There is a phenomenon proper to Lake Geneva: the faraway landscape appears, sketches itself, and disappears, gradually, according to time and weather. These physical variations and motions of luminosity that unveil themselves are absorbed by the architecture.

Patrick Berger on his design for the UEFA Headquarters

It was also interesting to discover that similar to the *Shakkei* technique that was achieved in the animated graphic representation, within the many schools of *Haiku* poetry, one of the popular characteristics of the *Taisho Hototogisu* poets* was the technique to create a pseudo-perspective by combining the foreground, middle ground and the distant view,²² thus constructing a vivid allusion of vast space within a few words. For example:

*Flowers of morning glory.
The sky above this street
begins to overcast.*

Hisajo Sugita (1890 - 1946)

After reading aloud several Haiku poems to friends, another intriguing element important to the appreciation of the haiku was realized, which in retrospect is quite obvious yet its importance cannot be discounted as it

**Hototogisu - The Cuckoo*, was a popular Haiku magazine established in 1897. Taisho is the period marked by the reign of the Taisho Emperor between 1915-1926.

applies to most forms of representation. It is the ability of the observer/reader to identify with the structure of the representation, and the pause, inhibition or delay between the expectation and fulfillment of the structure. As Leonard Meyer illustrates in his *Emotion and Meaning in Music*, "emotion or affect is aroused when a tendency to respond is arrested or inhibited It is the prevention of the expression of instinct either in behavior or conscious thought that leads to intense affect."²³ Using an analogy of skydiving with a parachute or watching a magic trick when you know that you will be tricked, Meyer goes on to state that with the inhibition of completion, it is the belief in resolution that heightens pleasure. In other words, it is this pre and/or meta level understanding that is needed before there is any heightening of affect.

Obviously, without this common base then, the representation would not be as affective and quite probably give no meaningful gain. This is where culture operates and this is what makes the investment of the observer so critical. But it is not all about knowing the outcome of the intent, it is about the observer/reader being able to invest and connect in some part of it and the ability of the designer to craft some 'creative' arrangement within the structure. From there the designer can start to play, combine and create (in other words - design), through contextual relationships, subtle qualitative effects and gains. It is not surprising then to see that the works of artists such as Ando, Turrell and Irwin are, if not minimal, then "economical" in their attempts to reveal the essence of things. They are attempts in creating a maximum impact by drawing attention to the observer what is already there, thus showing how to see. As Irwin states: "quantitatively $2+2=4$ but qualitatively it can $= 5$. . . this energy is the phenomenal, and is made up of qualities that the individual perceiver must process and value."²⁴

Stretching this argument, the ideogram as illustrated in the character Ma, is a form of representation that works similarly in creating a qualitative representation that one may argue is phenomenal. As Eisenstein argues, it is a form that by "the combination of two 'depictables' is achieved the representation of something that is graphically undepictable."²⁵

example uses of the character ma

Main Entry: *ideo·gram*

Pronunciation: 'i-dE-&-"gram, 'I-

Function: noun

Date: circa 1840

1 : a picture or symbol used in a system of writing to represent a thing or an idea but not a particular word or phrase for it; especially : one that represents not the object pictured but some thing or idea that the object pictured is supposed to suggest

2 : LOGOGRAM

- *ideo·gram·ic* or *ideo·gram·mic* /"i-dE-&-'gra-mik, "I-/ adjective

- *ideo·gram·mat·ic* /-dE-O-gr&-'ma-tik/ adjective

-Meriam Webster WWW Dictionary

間 抜 け

ma-nuke

... simpleton, fool (literally, someone missing *ma*)

間 違 う

ma-chigau

... to make a mistake (literally, *ma* differs)

間 取 り

ma-dori

... design of space (literally, grasp or taking of *ma*)

Source: Gunter Nitschke From Shinto to Ando

In the *trees* experiment and in the two experiments that will follow, this was the driving intention. To show buildings not just in their “conceived representations” but to show that architecture is happening all the time all around us, in the designed and un-designed spaces, not just in the represented spaces. The experimentation with representational techniques, was not to quantitatively trumpet the design, but to qualitatively show their elements, or “other spaces.” This is when the product can, in the *Gestalt* sense, become more than the sum of its parts, changing the way we see things, similar to the work of artists such as Irwin, Turrell, and Ando. “Quietly, imperceptively, it intrudes into our very apparatus of perception, drawing attention not to itself but to that which is already there. [They provide] an arena for perception to happen, [they open] up a stadium.”²⁶

Before moving on, it is worth noting a comment by Robert Irwin that seems pertinent to this discussion. It is a comment describing minimal installations that he and fellow artists, James Turrell and Bruce Nauman each did for a room in a rotating exhibition. He states that essentially it is an empty room, but it wasn't about the notion of emptiness that was interesting it was how each artist comes upon this emptiness that was interesting. This notion of nothing and the idea of the “phenomenal” as Irwin calls his work, interestingly yet not surprisingly resonated with the writings of the French Philosopher Henri Bergson. In his chapter called “The Idea of ‘Nothing’” in his seminal book *Creative Evolution*, Bergson states: “however strange our assertion may seem, there is more, and not less, in the idea of an object conceived as ‘not existing’ than in the idea of this same object ‘existing’; for the idea of the object ‘not existing’ is necessarily the idea of the object ‘existing’ with, in addition, the representation of an exclusion of this object by the actual reality taken in block.”²⁷ Bergson goes on to state that “nothing” is relative to the notion of utility and that life is to fill voids of utility or “nothing” made by desire and regret and necessities. This I argue, is an

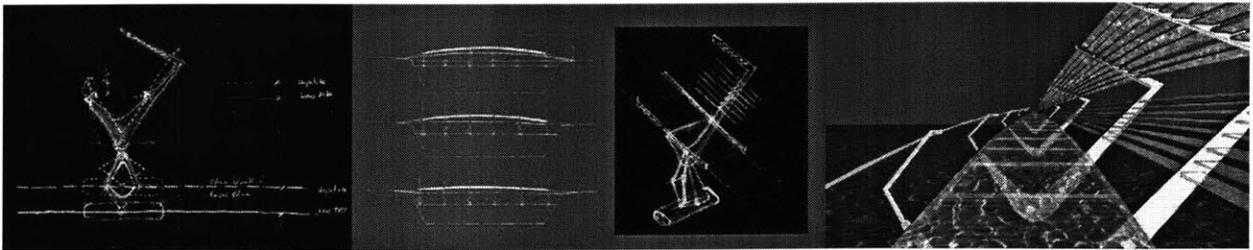
insight into the clichéd notion of “less is more,” and is reflected in the pre-modern or phenomenological notion of time and representation of space. It is a notion that is dependent on the subjective half to complete where perceptual insights become critical to understanding and consciousness.

As this thesis became engrossed with many of the parallels, that had been drawn in the *trees* experiment and the research that had been executed, the fear of this research becoming regressive and almost nostalgically too focused on the past had become increasingly bothersome. This apprehension resonated with the recurring arguments against phenomenology’s myth of origins and the claims of immediacy of consciousness through embodied experience and “phenomenological reduction.” This is when a re-examination of the initial bridge design that had been executed occurred, as explained in the following.

“Time and tide wait for no man”

“I don't have the time . . .”

In our contemporary society both sayings co-exist simultaneously. As this research grew more and more interested in the temporal simultaneities of our modern condition, a realization occurred that these simultaneities were ironically reflected in the preliminary bridge design that was produced during the beginning of this thesis. On one side, there is a pre-modern



preliminary bridge design

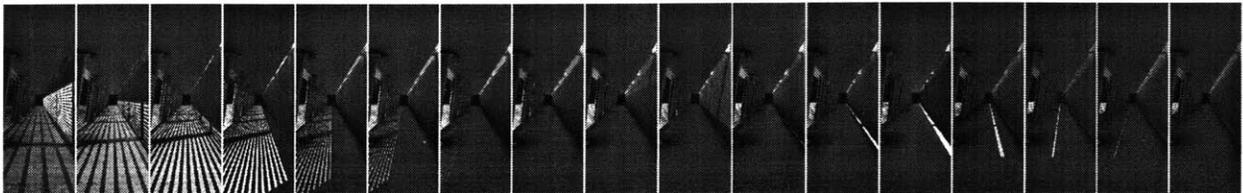
notion of "natural time," reflected in the conversation the bridge has with the tidal flows that deflects its arch in continuous time cycles external to the human hands that gave it life, thus "time and tide wait for no man." On the other, the agency to produce such a hypothetical bridge connecting disparate geographical locations, piercing the temporal distance by shortcutting the space that was once connected only by "natural" distances. This acceleration of time is the modern condition that has been created by our society's technological drive. Time is no longer dependent on relative time cycles but on abstract intervals made necessary by our modern condition, thus allowing one to objectify time as something that can be owned or dispensed with e.g. "I don't have the time"

As discussed previously, we can trace this transition from the pre-modern to the modern conception of time parallel with the development of technology. For example, the development of unified time zones in the United States became necessary with the advent of the Railroad in the mid 1800's that became possible to travel vast distances that were previously separated by our technological limits. From local "sun" time zones, the modern abstract conception of time developed, unifying the vast territory under one consistent system. In 1883, with the advent of the telegraph, the country's major cities were unified under four distinct GMT zones. A year later the world was divided into 24 meridians every 15 degrees East and West of Greenwich with the international dateline on the 180 meridian in the Pacific Ocean. What became interesting to this research were the irregularities in the time zones' boundaries as they wander considerably from straight north to south as to avoid dividing countries and islands into several zones. This irregularity was the inspiration for the following corridor experiment where I tried to find how architecture can start to actively measure these irregularities possibly revealing the forces (agency) behind, and the interaction between, the pre-modern affinity and the modern measure.

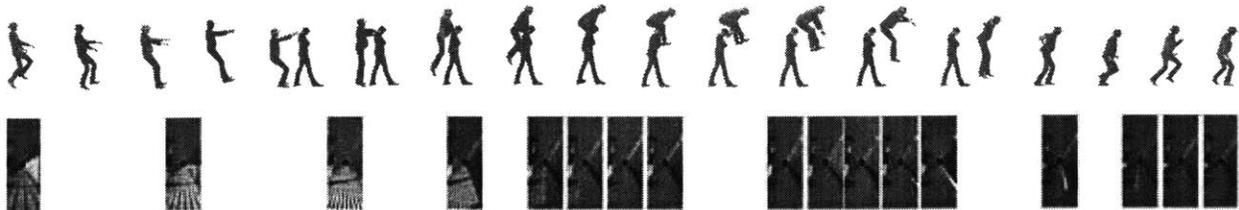
A great American poet once asked the architect, 'What slice of the sun does your building have? What light enters your room?' – as if to say the sun never knew how great it is until it struck the side of a building.
Louis I. Kahn, *Light is the Theme*

experiment 2 corridor

The corridor experiment is a computer graphic model of a corridor rendered with Lightscape and 3DStudio. The choice of a "life-like," perspective computer rendering was an intentional one. The choice of the corridor was an iconographic one, as an effort was made trying to convey an image of passage and movement. The experiment was to show a series of still frames of the same view but through the design of openings and shading devices, have the sun animate the space. By controlling the quality of the shadow cast and the time of the shadow at a prescribed location, in this case Boston, the attempt was to show the space as a product of the sun's movement and the material architecture. For example, this passage was imagined to be used daily by workers at around noon, where a strip of light would appear to connect both ends of the corridor, as people would pass through to their favorite lunch destination. In the late afternoon, after a long day's work, they would be flooded with light on their way home. Of course this was all contingent on the whims of the sun and the weather. The use of a serialization technique was first inspired by a quote by Foucault who talks about the advantages of similitude over resemblance as a way of creating a reference point. He states: "resemblance makes a unique assertion, always the same: This thing, that thing, yet another thing is something else. Similitude multiplies different affirmations, which dance together, tilting and tumbling over one another."²⁸



What was interesting in this experiment though was the discovery that although the images (marking significant intervals) were placed side by side to each other, the actual qualitative changes of the represented space were happening at different intervals or different rhythms of time throughout the day. It was then that the images were proportionally realigned relative to their time during the day, observing that the material architecture was represented in the blank spaces between the rendered images. As Edward Tufte notes: "for [still] images that depict movement, space replaces time as the sequencing dimension. The adjacency of images helps us to assess change and possibly rates of change within each image and between images in sequence-and we can do so at our own pace."²⁹ Unfortunately, there was something very unsatisfactory and missing in the representation of images as seen as a series. Because these depictions were a sequence of still images, they still lacked the experience of the passage of time and the rate or flow of actual motion, thus there was no intensification (such as that at noon and in the afternoon when there would be a high volume of traffic). In addition, since there really was no actual program with all of its constraints and parameters to start with, it was concluded that there was no true narrative in the depiction except for the two scenarios that had been given.



Top: *Jumping over boy's back 1887, Eadweard Muybridge Animal Locomotion*

Bottom: *corridor - proportional time alignment*

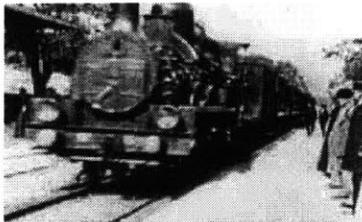
THE CREATIVE POTENTIAL OF REPRESENTATION

It is argued before, that by becoming ever more "real" in our representations, the designer/ observer's act of "filling in" or constructing the space is reduced. The conceived space becomes reified, tending to eliminate multiplicities of reading and the richness in encounter and the

imaginative actions the observer/designer should invest. Yet, in the process of perceiving a space, or experiencing a representation, there is naturally miscommunication and discrepancies read into the representation and intent. This is true in varying degrees for all forms of architectural representations for the most obvious reasons; they are after all, "representations." In fact, no matter how informative a representation may be, this will always be true because the conception of space is as much a mental act as a physical one. It is an active process where the mental act of shaping a space is supported by our disposition, past experiences and memories in relation to the formal architectural qualities or the movement of our physical body, and perceptual instruments. In other words, a spatial experience, whether representational or experiential, is something that cannot be replicated and is never the same for anyone.

Then, it is not enough to say that this is a representation. What needs to be asked is what that representation is intended to re-present. As much as a representation is supposed to draw the observer into investing their perceptual and cognitive tools, representations are, on the other hand, demanding on the observer to actively use those tools critically. At times, there is a tendency to get lost in studying the representation as the actual end instead of the means, especially in the academic world where there are always hypothetical problems and design processes being set up with hypothetical designs, judging the actual design of the building through the representation. Perhaps, the question should be: what is the intention of the representation? Is it supposed to represent "truth" or something "real?" Then what kind of "truth" or what kind of "reality?" Is it temporal reality? Physical reality? Perceptual reality? Conceptual reality? Re-presentational reality?

I argue that this is not a problem of the tool but a problem of process and perception. A problem of how certain prioritizing of design factors and methodologies are happening over others, and thus limiting the perception of the tool and the representation that it creates within the process. For example, with the ever-increasing computational power, static images are becoming replaced with more time based representational forms such as photographic three-dimensional computer animations. Although, “moving” pictures or computer graphic “animations” are essentially static images that are sequentially displayed in quick successive fashion, one would not mistake the corridor experiment or Muybridge’s photographs as “real” movement. But to conflate the movement projected on the screen as “real” movement is also a mistake. Movement is more than a purely visual phenomenon. It is, borrowing Gilles Deleuze’s term, an *assemblage* of actions perceived and conceived. This is the difficult balance architects are faced with when using representational tools in the creative stages of the design process. The key, I argue, is in the end, a matter of awareness and perception. For one, computer graphics can be incredibly powerful tools of externalization, problem posing and visualization. The true problem is to think that all computer graphic visualizations are trying to simulate reality. This is what the French film critic, André Bazin alludes to when he mentions that the psychology of the camera as a mechanical tool prejudices our reading of the representation.



Lumière brothers' film frame of Train pulling into La Ciotat station 1895

Considered as the fathers of filmmaking, the Lumière brothers were the inventors of the Cinematograph, the first filming and projection device of moving pictures. It is said that when this short film was first shown, the audience sitting in front of the theater jumped out of their seats to avoid the oncoming train.

As stated previously in the introduction, there are many problems, when design moves from the spatial concept to the physical reality, this is an unavoidable part of the complex process of architecture. A better awareness though, in the perception of representations will help eliminate the tendency for instrumental objectification and quantification that may inhibit a richer experiential production of space. If this can be eliminated or minimized, then within the creative process of design and synthesis, there is

the possibility of manipulating "ambiguities" and "discrepancies" of spatial interpretation in boundlessly expressive ways. Departing from the more functional or informative, architects have always developed various methods and techniques for exploring design ideas through the expressive affordances of various representational forms (e.g. the perspective drawing, the isometric drawing, the collage, the diagram, renderings, physical models, photography, etc., and the computer graphic animation notwithstanding). Representations are not just for conveying information, their potential lies within the design process where they are used to externalize ideas, question theories, and suspend reality bridging the mental imaging limits and expanding the imagination of the designer in a process of "self reflection in action." In other words, they become more than tools for conveying information to others, they became tools for play, imagination and expressive creativity in the exploration of spatial design ideas.

As Jeffrey Hildner says in his essay: *Drawing as Contemplation*: "in addition to serving as a point of departure for thinking about architecture, . . . drawings are intended to express the continuing dialectical drama between reality and imagination in the mind of the artist, since drawings have a life of their own that allows us to suspend or question reality and explore their inherent fiction."³⁰ One argument that this research puts forth is: can we not say this about other forms of representations, from sketches to highly "real" computer graphics?

04 FROM THE MODERN NOTION OF TIME TO INFORMATION-TIME (INSTANTANEITY, FLUX AND DURATION)

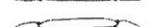


diagram studies UN-Studio

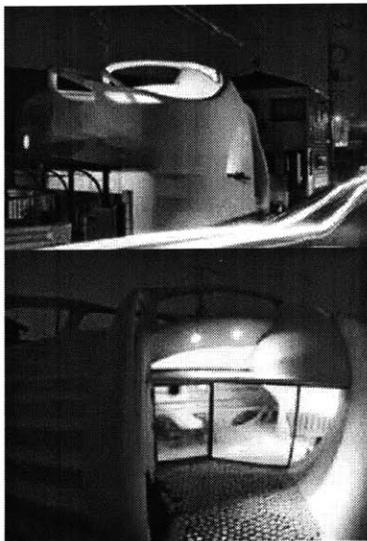
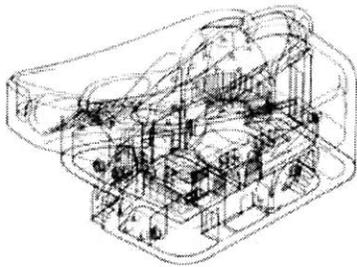


This research is not a nostalgic cry for the past, or an indictment on technology for architecture is very much a part of technology, a part of the art of making or *techné*. In fact, it is ironic that as this investigation is concerned with the explosion of technology and its negative implications to our lives, the Internet has been used for a significant amount of this research. The pure amount of information (good and bad) on the internet is truly amazing.

This research is not an argument against technological advances nor is it suggesting a need to go back and abandon our cars and create a pedestrian utopia. What it is supporting though is a critical awareness of what is happening. Perhaps, as stated before, a more critical look at how we are using the tool and thus conceiving space and time, and vice versa, should be taken. With the acceleration of technology, temporalities are no longer thought of as linear making this point even more pertinent. Today, we are living in a society that supports instantaneities, simultaneities and speeds in multiple temporalities. These simultaneities have the potential to happen in the same space forming a third conception of time brought about by the rapid explosion of digital technology. It is the era of instantaneous information or *information-time* characterized by instantaneity, flux and duration.

It is interesting to note that Junichiro Tanizaki, Richard Sennet and Marc Augé, after so eloquently illustrating and mapping the harmful effects of our technological progress, each find not only a redeeming factor in the technological advances, but also find an exciting potential in the new relations that are coming out of these changes. Tanizaki, after harping about the loss of traditional Japanese aesthetics brought about by modern convenience, is known to talk personally about not being able to live in an old traditional house without the convenience of his ugly, modern home. Sennet, after talking about the coldness of the new materials that are becoming a pervasive part of the architectural vocabulary of his era, expresses the exhilaration of alienation he felt at a party as he was pressed up against the plate glass of an apartment in one of Mies' Lakeside Drive towers. Augé, after mapping the profusion of "non-places" brought about by "supermodernity," then goes on to map the new forms of relationships and social roles that are developing in these "non-places."

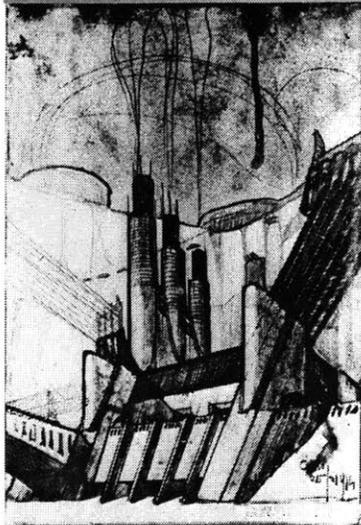
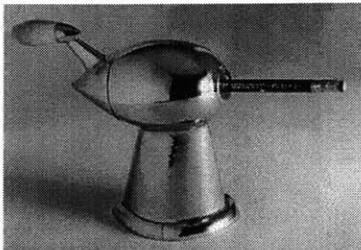
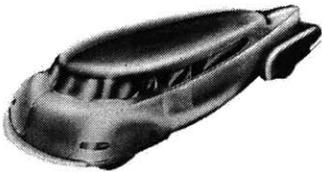
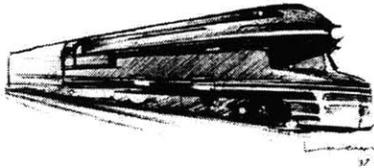
Architects today are experiencing in this *information-time*, an indeterminate flux of society, culture and lifestyle. No longer are they interested in closed formalized solutions of building and program but they are interested in the multiplicities of spatial meaning and use, a non-Euclidean almost Deleuzian notion of space. How one does this is what the theories of many architects today are trying to address. For example Bernard Tschumi's *Event Spaces*. Ben van Berkel and Un-Studio's *Deep Planning*, MVRDV's *Datascape* or *E-scape*, Asymptote's non-perfectionist, phenomena driven search towards "architectural assemblies of abstract qualities of time, speed, duration . . . flux and atmospheric ensemble." We are truly in a post-modern era of thinking, yet so many architects are still trapped in the tendency to directly formalize their conceptions and become lost in their instrumental methodologies, ideologies and terminologies.



Truss Wall House 1993
Ushida Findlay Partnership

For example, until recently the word fluid was a popular term that had been used again and again. But fluid has many meanings and thus many forms. What does it really mean to be fluid? Undoubtedly due to the technological advances of the tools, the capacity to design and in some cases construct fluid surfaces have become possible. Architects are using this for more and more expressive freedom, yet in many cases, the spatial intention of the architect, or what they say about their spatial intention does not match the beautiful formal shapes that are produced. Just because the container is shaped fluidly does not mean that the spatial experience is fluid. Are these open solutions to the flux and flow of multiple temporalities we are experiencing in our post-industrial digital society?* If so, should we not question if the form actually needs to be fluid? If we talk about the modern

* Industrial = mechanical, hard. Post-industrial or informational = soft fluid? We cannot underestimate here the influence advances in biotechnology and the computational advances in AI and Genetic Algorithms have had in making biological terminology, forms and representations very popular again.



From top: Locomotive, Design of Bus Car Taxi of the Future, Pencil Sharpener
Raymond Loewy

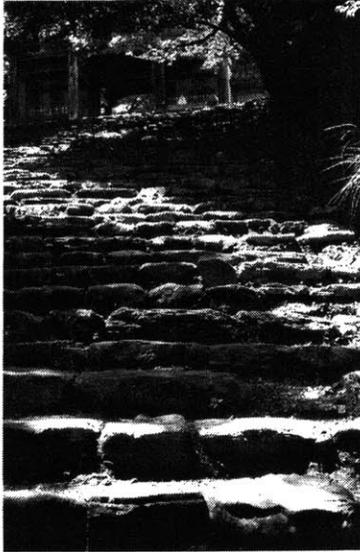
Electric Power Plant 1914, Anotonio Sant'Elia

condition today, we must realize not that there are multiple temporal realities, but spaces themselves regardless of form have these fluxes. Furthermore, the temporal flux that we are experiencing, I argue, is not a formal one, it is first and foremost immaterial.

Broadly, a comparison can be made between some of the designs we see today and the designs of the 20's and 30's when the modern aspirations of designers were to express the speed and the technological hopes of a modern society. Streamlined locomotives, buildings and appliances were not for the most part faster because of their form, they were expressions of the great inventions of the age of speed. As Hiroyuki Suzuki points out in his essay *Time, Speed and Design*, "the streamlined shapes that were popular for this reason, in the early twentieth century, were not true designs of space/time, but expressions of the spirit of the age," (just reading the Futurist Manifesto would be evidence enough of this spirit). In addition, much of the subject matter and technique of the representation in this era reflected the spirit of the age, e.g. Sant'Elia and his stations and power plants, or Loewy with his cars and locomotives rendered in seductive perspective angles. But what about these new fluid spaces, and forms? If they have a positive psychosomatic effect, and give a positive experience, would that not be a noble and worthy design on that level? The streamlined pencil sharpener would probably not sharpen any faster but it is still a very evocative design. In 99% of the buildings we occupy, we don't even directly notice the actual design that is put forth, of course that may be the intention of a good design but there are those designs that try hard yet we don't really see the effort since they are within our lifestyle, typical of the designs we see everyday. Undoubtedly, we have become a bit numb to our surroundings.

This is not to say that the fluid designs are of any less value or less valid. The emotional-quotient that these great designs may trigger, is a great part of what design can be, yet if this becomes a pure formal exercise of aestheticism then we have already fallen into the trap of objectification and are on the way to becoming just another commodity in the global flows of capital.* As Paul Virilio states: "the very word "globalization" is a fake. There is no such thing as globalization, there is only virtualization. What is being effectively globalized by instantaneity is time. Everything now happens within the perspective of real time: henceforth we are deemed to live in a "one-time-system,"³¹ and as James Corner had pointed out previously, everything and everywhere starts to look the same. That is, space becomes a commodity of resource, generic and interchangeable in the global flows of capital. But is architecture highly specific? Will the same building have the same affect wherever it is? Or better yet, does the design of such spaces need to be highly specific? This research, I argue, is interested in searching for the generic in the specific. The generic experience of *essences*, the *essences* of embodied experience that can occur, should occur in highly specific contemporary architecture.

This is why, without some nostalgic and futile attempt at regurgitating the past, this investigation inquires if we cannot break away from rational and formal criteria in order to account for the dynamic flux of time that is for example reflected in the traditional Japanese conception of space. Although, it is not purely a one-way problem, can we not design to create better spaces to support the multiple speeds of our culture without reducing the design to some formula of form? Can we not design for the specificity of the place when the speed actually drops to zero? In some small way, I argue that if we are aware of this we can start to address these questions and design for quality instead of quantity. Or is it too late and not the place for what one may call conscientious design?



Jingo-ji, photograph by Yukio Futagawa

We work in a profession that must deal with the notion of freezing space. One: because the clientele demands it, investing emotion and capital on things that outlast their life cycle, and two: because ultimately we must pick a moment to freeze and operate on it. But which moment? Designers can create sexy representations of movement and time, but which time? Instead of trying to freeze time, our attitude should be to design for spatial and temporal flux. Taking sections of time and space, flux and flow, constantly reconstructing different spaces through the slipping and overlapping of time and space. This way, the design can allow for that particular time when everything at the exact moment comes together and fits, where duration is experienced. Is this possible? Is this what good design is about or is this out of the designer's hands?

"Time is, therefore, not a real process, not an actual succession that I am content to record. It arises from my relation to things. Within things themselves, the future and the past are in a kind of eternal state of pre-existence and survival."

"What is past or future for me is present in the world. It is often said that, within things themselves, the future is not yet, the past is no longer, while the present, strictly speaking, is infinitesimal, so that time collapses."

Maurice Merleau-Ponty, Phenomenology of Perception

Just as there are different geographies and communities happening simultaneously, there is more than one spatial paradigm, or temporal paradigm. We are members of many communities living in many temporalities, and it is not enough even to recognize that there are multiple temporalities, it is imperative to ask what about their interactions that triggers and produces? As the *economist* Saskia Sassen says: "as a category, time functions as a sort of benchmark against which we measure and situate – a condition with an objectivity all its own. This is perhaps

similar to the representation of space as container, as given rather than space as a produced spatiality of various dynamics."³² What if we then start to think of time differently? Not as some abstract notion of time in seconds, minutes or hours, but time as the product of experience and time as a generator of form.

If space and time is conceived as a product of experience, then simultaneity becomes an abstract notion that can be engaged. A simultaneity of the past, present and future that collapses into each other where at the moment of experience these terms cease to exist and cease to divide time into divisible elements. This is duration (or as Bergson called it, *duré*), and where time itself is being. It does not flow or pass unless subjectively, it is disrupted by myself or someone, to create a perspective of time. This is why architecture is not "frozen music," architecture exists in *duré*, constantly defining itself between the observer and the physical space. It is the measure of these durations, the different ways of measuring them and the convergence and interaction of different durations or temporalities, where time can become form.

Reflecting back on the corridor experiment, I realize some of the failures of my representation. I thought the series would be a cutting of sections in time, thus cutting sections in space, showing the transformation, the events, and the relations. Although, the representation is effective in conveying this information, I realize now that my inability to show intensification or duration could be construed as a failure in the experiment. In addition, as expressed before, architecture and representation does not exist outside of its culture, it is not without narrative and only thrives when it is aware of this. Great architecture takes advantage of this. If architecture and art (representations) is supposed to make us aware, conjure memories and recollections, point to our sense of self and being it only happens because it is within the world we live, and the culture that we create. Thus, I think there is a difficulty in looking at a

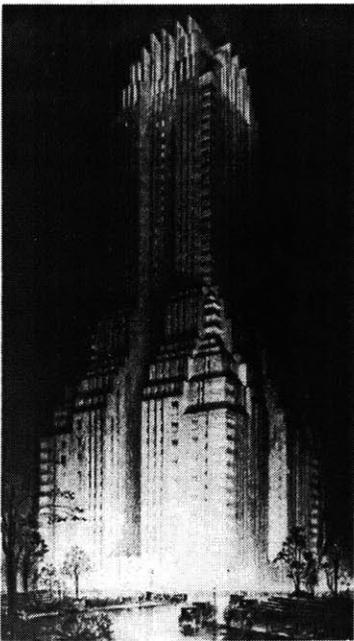
representation out of context (in the widest sense, if this is possible), without narration, without a culture.

As Tschumi states: "any representation of time in space (for example, a line divided into homogenous intervals) misses duration. It fixes states instead of understanding the fluidity or mobility, the movement itself. To use such a spatial diagram shows how intelligence tends not to understand duration."

If real time is experienced time and equals duration, it is a qualitative time, continuous and unexpected, where a previous state cannot be separated from a future state and where events should be reflected, captured in time. But how can architecture represent this, or more importantly, can this be represented within the design process? Again, perhaps it is first and foremost a matter of awareness, perception and attitude. Then, with all of the tools available, the architect can critically and creatively design and meet the challenges of the design endeavor. This can be done, I argue with the combination of traditional representation forms and/or along with the aid of new evolving, dynamic time based representations of space, time and experience. Dynamic time based, implies representing movement, speed and duration. Naturally, this leads to the question of what kind of movement? Physical movement? Perceptual movement? Temporal movement? Psychological movement? etc., and what about the use and role of the "image" in our representations?

One key that leads to the representation of duration is iconography. Iconography is a partner of memory and can transcend time. As Merleau-Ponty once wrote: "memory is only something that exists in the present. It is dependent on it. It does not live in the past but waits for them to be recollected in the future."³³ For the designer and observer, the combination of iconography, culture, nostalgia and conscience are what come together

at a specific moment of experience to evoke a meaning. This is what Gaston Bachelard alludes to in his book *The Poetics of Space*, when he mentions the iconographic memory of the drawers, where we keep memories and experiences for later times to be recalled, triggered. Thus for Bachelard, the archetypal notion of a home can be a shack. But not just any shack, to Bachelard, it is a shack in a winter storm, with a warm glow of light piercing through the window.



*Presentation drawings for the proposed Majestic Hotel, New York 1930
Hugh Ferriss*

In this light, re-examining the *Hakkei*, which was discussed earlier as a popular Japanese representational form depicting eight views measured by the place at optimal times of beauty, its very iconography represents another temporal dimension. It represents, the past through its traces to experiences, memories and histories, the present as the temporal present of experience or existence and the future as a thought of its future existence or a similar place we may encounter. In addition, we can also talk about the technique of representation similarly to the image's iconographic ability to connect simultaneously with the past, present and future simultaneously. For example, Hugh Ferriss' beautifully rendered perspective night drawings of metropolis may have evoked different experiences and memories when they were first presented, but today, they may evoke a nostalgic connection to a time when the production of such representations were meticulously done by hand. In other words, to a time of past cultures and crafts.

What is important in this argument is not that representation has meaning but that it has the ability to be meaningful and it is the quality of the relation of things through representational techniques that make it meaningful.

. . . anything acquires meaning if it is connected with, or indicates, or refers to, something beyond itself, so that its full nature points to and is revealed in that connection.

Meaning then, is not in either the stimulus, or what it points to or the observer. Rather it arises out of what both Cohen and Mead have called the “triadic” relationship between (1) an object or stimulus; (2) that to which the stimulus points – that which is its consequent; and (3) the conscious observer.

Leonard B. Meyer, Emotion and Meaning in Music

experiment 3 animated Hakkei

Realizing this, I began to reexamine the time based representational form of film and animation. Examining not just motion and movement but the creation of film space and its possible links to the representation of architectural space while attempting to incorporate the new evolving digital tools within the experiment. In a sense, I was already doing this with the tree and corridor experiment, with serial representation techniques, where motion is created in the mind of the observer by the connection of the rapid succession of frames. These frames in relation to each other create different meanings. So it is not only the image (iconography) or content but how we deliver it that changes the meaning of the content. The rearrangement, timing, delay through collage and montage, to contrast, emphasize and discover the characteristic of something in relation to the other.

Taking the initial bridge design that I discussed previously, the intent here was to create an animated Hakkei where one single frame divides up into four separate (not the literal eight) animations according to the following quote in the Pillow Book by Sei Shonagon.

In the spring it is the dawn that is most beautiful . . . in summer the nights . . . in autumn the evenings . . . in winter the early mornings .

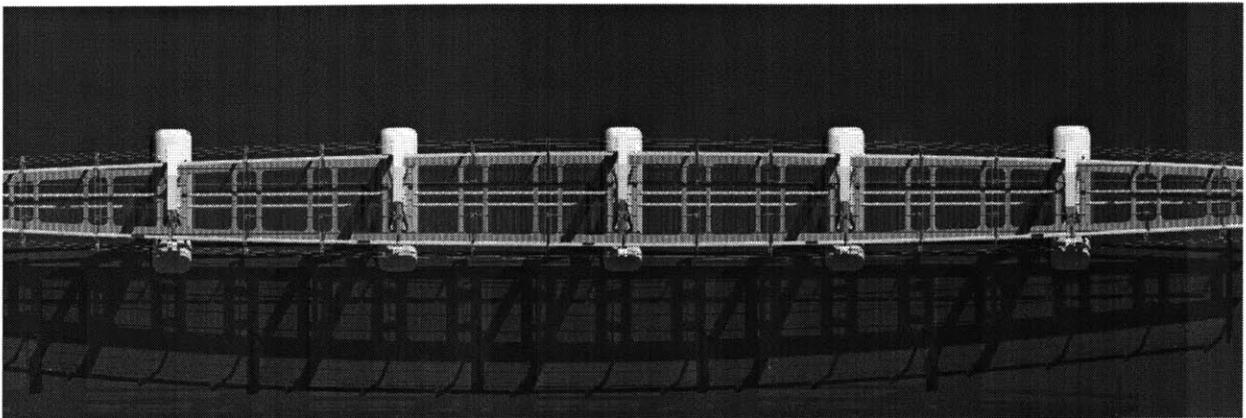
What troubled me during this unfinished experiment was that I perceived the power of animation, with the ability to sculpt time and space through the different sequencing of events, image and time in relation to the representational demand on the observer to fill

in the missing information, paradoxically, created a less active reader, or a passive spectator through its fluidity.

In reaction, the experiment was intended not to be auto-figurative, and in the spirit of the Russian filmmaker Vertov Dziga, I became Kino-eyed, taking advantage of what animation could do. That is, controlling what was shown and what was not, creating multiple readings through not just the pauses or delay or the expansion and compression of space and time, but through the interaction of several, simultaneous animations, creating new relations and thus new readings of space that was highly demanding on the observer.

During the experiment I had two thoughts that seemed very pertinent to what I was attempting to do. The first being the notion forwarded by Junichiro Tanizaki in his Book In praise of Shadows. In his essay on the loss of traditional aesthetics brought about by electricity and modern technology, he talks about the appreciation of something only in relation to another. Thus to him the real value of white can only be appreciated in the realm of darkness. The second notion that influenced this experiment was the Kuleshov effect, named after the experiments by a Russian filmmaker by the same name. In his experiments, he sequenced the interchanging of emotion-laden images (e.g. an ambiguous shot of an Russian actor, a bowl of soup, a dead woman in a coffin and a child playing), in order to create different narratives and spatial relations across images. In sum, it is the sequencing and time that determines space.

animated Hakkei - Initial autumn frame



05 CONCLUSION

Space is first and foremost of the world. Architects should realize that the practice of architecture does not have total control of the material artifact. Representation is a powerful tool for architectural design, but we must remember the dangers to the architectural endeavor inherent in the move from representation to material reality. It is one thing to explore the inherent fiction of re-presentation, another to not be able to pull out of the fiction by quantifying and objectifying the represented space and discounting the experiential nature of the space. Instrumentality is a creative endeavor for knowledge, it is how we pursue our ideas through testing and reassessment and it is inherent in our modern culture. Yet, it is just as important to step out of our own instrumental processes and methodologies to take a critical look at where we really are and where we may be heading.

This research was initiated in reaction to what is perceived as an instrumental tendency to conceive of space as a given, formal static container. In a search for a wider notion of space as a product of interactions between various dynamics, the element of time is just one of the many components that make up this dynamics. Yet, space cannot and should not be conceived without the element of time, since space is neither static nor exclusive of time. On the other hand, space is not a stage set for speed as we live in a time of multiple temporalities and multiple speeds. In other words, space and time are, first and foremost, products of experience.

06 EPILOGUE

I have a recurring daydream. It is of an unforgettable experience I had a few summers ago in Japan at a small sub-temple called Koto-in. Koto-in is, or was, one of the lesser know sub-temples in a famous large Japanese temple complex called Daitoku-ji. It is a typical hot humid Kyoto summer day. As I approach the entrance to Koto-in, I face a small entry path that immediately turns left to a large wooden gate. I enter stepping over the threshold and immediately feel the coolness of the air that is sheltered by the canopy of trees just above my head lining the long narrow stone path to my right. With each step toward the temple, I am removed from the events and worries of the day. I enter the temple, yet all of the rooms are fragmented, pin wheeling out and interlocking with their own adjacent gardens. I wander. I wander through and come upon a green room. It is a green lush then I could have ever imagined green could be. I sit on the veranda underneath the enormous overhang drenched by the light as it filters through the tall canopy of rustling leaves and the bamboo backdrop only to be reflected by the dark green moss of the ground. I sit and fall asleep.

I realize now after this research that we do not perceive just with our eyes, unfortunately, we often forget this as we privilege our visual and aural senses. Architecture, unlike written language deals with these other senses directly, and great architecture heightens these senses as we start to perceive with our sense of touch, with our sense of smell and if we are lucky with our sense of taste. Reflecting back on that one summer afternoon, I realize now that it wasn't just the green of light that made the room green. I realize now that green was actually, the smell of the moss and the tatami, the warmth of the breeze and the feel of the grain of the weathered wood underneath my hands and feet. I realize now that green was forgetting about the long hot day spent in the bustling urban streets. This is what green was.

Now, can we evoke similar emotions through representations? I think so. With the current trend in the explosion of information technology one may speculate that we are returning to a truly aural visual culture. Perhaps, the image will replace written language. Perhaps we will start to talk with pictorial metaphors, a pastiche of images,

rearranging them appropriately for new meaning. Sampling is truly one of the new traits of digital culture. This is the power of representation. This is the power of culture. In a way, we cannot avoid privileging our visual and aural sense but we can be critically aware about how we do this.

We must realize that the practice of architecture does not have total control of the artifact. Representation is a powerful tool for architectural design, but we must remember the dangers to the architectural endeavor inherent in the move from representation to material reality. It is one thing to explore the inherent fiction of representation, another to not be able to pull out of the fiction by conceiving and objectifying the space within the process of design. Instrumentality is a creative endeavor for knowledge, it is how we pursue our ideas through testing and reassessment. The danger of instrumental representation arises when we start to value the representation as the ideal instead of the potential. When we start to judge the glossy photograph of the “finished” building, instead of the actual spatial encounter, that’s when we have to step out of our own processes and methodologies to take a critical look at where we really are and where we may be heading. I don’t think it is an all or nothing situation, but if our attitude is so closed that we cannot keep these things in “perspective,” then we really are in danger. If not, are we not reducing our craft by formalizing and aestheticizing our products, objectifying the space into some quantifiable commodity?

So, is it really a question of design or a question of perception? I think it is both. How do we teach ourselves to see? How do we teach ourselves to see past novelty or scientific objectification? Can we? Can we change our attitudes? It is in a way, our awareness that needs to be retrained. Things are happening around us that we have become numb to but hopefully if we can show in some small but not insignificant way, not just what to see but how to see, we can become aware. If we become perceptually aware of this, we can perhaps really explore the power of representation. The ability to “suspend reality and study [the] inherent fiction” in so many of the wonderful representations that are being produced by the new evolving digital tools. And I by no means am trying to say that one form of representation will replace another, in fact I think the exact opposite is happening as we are really seeing the value of many media in a new light. What about

“reality,” you may ask? Why try to simulate real life? No matter how “real” the representations may be, we are not trying to simulate real life. You can’t, this is why I hate the term “virtual reality.” These are representations, there is nothing virtual about them. What is reality anyway? What kind of reality are we talking about? Perceptual reality? Temporal reality? Experiential reality? Cognitive reality? Physical reality? The list goes on. The only reality I know is that this is reality here and now. I am writing this and you are reading this. That is why I like the word re-presentation. There is no mistake about what we are seeing when we are viewing a re-presentation and this is the power of representation. The fact that we can suspend “reality.” How one sees a representation is totally up to the viewer, and it is very demanding on the viewer and their experience here and now and all of their recollections and memories this may trigger.

*Somewhere, when the experience all clicks, in representation, architecture, writing, etc., that’s where beauty is and where *duré* can happen. But someone who does not share the same cultural experiences or value systems, this may not be as beautiful or meaningful to them. Culture, is always evolving, and design is a constant endeavor in search of a moving target. Things change, and as things change we gain something and perhaps we lose something. But I am not one who believes in the myth of origins, an argument that has always plagued phenomenology, or one who nostalgically pines for some fictional past that was not transformed or influenced by time and technology. I am not against technology or the scientific methodologies in our instrumental search for knowledge. But I know that the answer is not in a reductive objectification of architecture because we do not give meaning to architecture. As Gadamer once said about art and architecture, “[it] is first and foremost of the world Rather than simply meaning ‘something,’ art and architecture enable meaning to present itself.”*

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