On the Articulation and the Synthesis of Space in Architectural and Urban Design

by

Takashi Arioka
B. Arch, University of Tokyo
Tokyo, Japan, March, 1979

SUBMITTED TO THE DEPARTMENT OF ARCHITECTURE
IN PARTIAL FULFILLMENT OF THE REQUIREMENT OF THE DEGREE
MASTER OF SCIENCE
IN ARCHITECTURE STUDIES AT THE
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

JUNE 1986

Takashi Arioka 1986

The Author hereby grants to M.I.T. permission to reproduce and to distribute publicly copies of this thesis document in whole or in part.

Signature of Author

Takashi Arioka
Environmental Design, May 9, 1986
Department of Architecture

Certified by

Julian Beinart
Thesis Supervisor
Professor of Architecture

Accepted by

Julian Beinart
Chairman
Departmental Committee for Graduate Students
On the Articulation and the Synthesis of Space in Architectural and Urban Design

by
Takashi Arioka

Submitted to the Department of Architecture on May 9, 1986 in partial fulfillment of the requirements of the degree of Master of Science in Architecture Studies.

Abstract

The problem of observer in contemporary physics, or Heisenberg's principle of uncertainty and Einstein's theory of relativity had considerably strong impact on our notion of time and space. We are in the irreversible arrow of time and space continuum (lived space and lived time), which are completely different from abstract time and space in mathematics and physics. At the same time we came to know that we can only understand the world within the limit of our cognitive process, in which acquisition of language is essential to our having the capacity to convert sensory information into digital form. So our knowledge and belief are selective and exclusive.

Epi-genetic process in biology and linguistics placed an impact on the understanding of the repetitive productions of architectural spaces in the city. The architectural and urban design, or typology, is regarded as an epi-genetic linguistic process. To succeed to the precedents, not only in the infrastructure but also in the ultrastructure means one of the evolitional processes of the urban space from the genetic point of view, and Contextualism is regarded as one form of symbiosis from the ecological point of view.

Design of architectural and urban space is a decision making process, which cannot do away with models. Typological study for selecting the most favorable ideas within the various alternatives is regarded as a simulation process in our model of thought, which is ultimately dependent on the characteristics of our cognitive process. Every selection is done through the mesh of our experiences and knowledge. This cognitive process transforms patterns of our sensation from the highly informationized urban space into a linguistic process (text). Various media have gradually influenced our visual experiences in the city and this text.

Thesis Supervisor: Julian Beinart
Title: Professor of Architecture
# Table of Contents

**Abstract** 2

**Table of Contents** 3

**Prologue** 5

**Chapter One**

1. Visual Communication 27
   1) Visual Information Process 27
   2) Sense of Vision 33
      i) Sensation 33
      ii) Characteristics of Vision 33
      iii) Perception and Attention 34
      iv) Figure and Ground 35
      v) Gestalt Principle of Organization 38
   3) Organization of Information 39

2. Analogue and Digital 43
   1) System of Thought 43
   2) Categorization 48
   3) Visualization of Concepts 52
   4) Diagram and Model 53

**Chapter Two**

1. Theory of Place 63
2. Street as Urban Space 73
3. Pattern Language 77
<table>
<thead>
<tr>
<th>Chapter Three</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hermeneutics of Urban Space</td>
<td>86</td>
</tr>
<tr>
<td>2. Growth and Change</td>
<td>99</td>
</tr>
<tr>
<td>3. Megastructure</td>
<td>103</td>
</tr>
<tr>
<td>4. Analogy of Organism</td>
<td>106</td>
</tr>
<tr>
<td>5. Superstudio</td>
<td>122</td>
</tr>
<tr>
<td>6. Contextualism</td>
<td>126</td>
</tr>
<tr>
<td>7. Collage City</td>
<td>129</td>
</tr>
<tr>
<td>8. Typology or Collective Memory</td>
<td>130</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter Four</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Here and There and Everywhere</td>
<td>149</td>
</tr>
<tr>
<td>2. Topographical and Topological</td>
<td>163</td>
</tr>
<tr>
<td>3. Transformation by Media</td>
<td>171</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Epilogue</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>179</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bibliography</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>182</td>
</tr>
</tbody>
</table>
Human Condition  R. Magritte
Many philosophers in the ancient in the east and the west said "Life is eternally changing."

When I think of this notion or this "fact", I get interested in the process of this evolution, at the same time I get interested in the genetic design process of architectural and urban space in which we enjoy our life.

As J.H. Habraken, C. Alexander and some other architects said, "There seems to be a natural and standard relationship between our action and space."

However, one of the most interesting issues is that even if we think we have a natural relationship of space, our notion of the space in architectural and urban design have drastically changed for this only one hundred years.

My question is that, during this evolving process, what kind of characteristics of space have been maintained and what kind of them have been transformed, and in what way these transformation have been reflected in the organization of space, in other words, the articulation and the synthesis of space in architectural and urban design.

We are probably not wrong in saying that the genetic process in designing architectural and urban space is similar to that of the linguistic structure, and the genetic process of language is considerably similar to that of an organism.
I think that it is based on the way how to look at the outer world in the present circumstances, in other words, it is based on our "episteme".

Even if that is true, however, what is there behind this genetic process?

What does constitute this kind of genetic, more precisely speaking epi-genetic process?

It is said that at least in the Renaissance period the way of recognition was based on "analogies". According to E. Panofsky, "Urban space, the space of perspective painting, and the space of theater are understood as analogous to each other." As a result, many idealistic and diagonal city plannings were proposed.

In the eighteenth century, as van de Ven says, theory of physics developed by Newton, Huygens, and Leibniz had a great influence on the design theory of Boullee and Ledoux, and these two architects visualized their outlook of the world in the drawings.

In the twentieth century, many designers tried to construct their theories which could "support" their works in painting, sculpture, motion picture, and architecture.

Design theory of architectural and urban space is more or less influenced by these trends at that time.
Since Cerda, many urban design theories and models have been proposed, for example, linear city, satellite city, city for 300 million, Tokyo Bay plan 1960, walking city, twelve ideal cities, and so on. (see chapter three)

Some of them are interpretations of the classical urban form in a regularized way, or representation of architects' megalomaniac aesthetics, or some theories which placed emphasis on the "process" in accordance to the epi-genetic process, or growth and change.

Since 1950's, we had had various problems of pollution in the environment, whose causes are mainly our activities in manufacturing industry and our daily lives. We had been in the unbalanced energy consumption.

This was the great moment for us to regard ourselves as a one of the species in the ecological system, in other words, as Bollnow said, we could get closed to the "sure foothold" of existence on the earth.

At that time, I was very much interested in the way how to design total manmade environment based on the geophysics, ecology, sociology, urban design, architectural design, and some research on space ship projects by using computer for simulation of future projection.
"VITA" Cinque Storie del Superstudio
I began with regarding society or human activity as a system, and I studied various subjects to find the way how to resolve this friction between our activities and the environment.

We were and still are in danger of shortage of energy, food, and clean air, water and food. These resulted from at first population growth, and unplanned exploitation of natural resources. So the solutions of these problems is dependent on our future attitude to every thing; the way how to use fossil energy, how to get another energy resource in replace of oil, how to produce vegetables, how to produce manufacturing goods without polluting the air and water, how to control population on the earth, and so on. This is ultimately dependent on the education of following generation. The most important thing is how we can get an appropriate choice of the alternatives in front of the vital situation.

In the course of time, I have got interested in the urban design from the point of view of environmental assessment.

I entered School of Mathematics, Waseda University, where I wanted to study computer simulation. However, I got much interested in the designing of architectural and urban space by means of materials rather than "system design", and I studied architectural design at University of Tokyo from 1974 to 1979. During these years my study have been
emphasized on the relationship of our action, sensation and the environment, from the point of view of Gestalt psychology rather than systems approach.

And now, having been working for an architectural design firm for five years, and studying at M.I.T. for two years, I came to think that architectural and urban design theory and the notion of space are considerably interweavened with "epistememe" or the structure of our knowledge. If the city is the place of "collective memory" or the city is accumulation of memories, I may safely say that city is also an accumulation of our knowledge.

Therefore my study on the articulation and the synthesis of space in architectural and urban design is the study of the process of the way how we understand architectural and urban space, or the transformation of hermeneutrics of architectural and urban space.

I would like to bring to this study at M.I.T. for graduation thesis connection to my previous studies which I have done at the University of Tokyo in 1978-79, and at my firm, Kume Architects-Engineers in 1979-83.

One of these studies is my graduation thesis entitled "On Nightscape. An Observation of the Exterior Design at Night through Visual communication Theory or Melting Cheese Clock like Night Galaxy Train." (1979) This study was
done under the guidance of Professor Yoshinobu Ashihara at the University of Tokyo. In this study, I analysed the transformation of a townscape from day to night in terms of the "figure-ground" relationship in the environment.

I regarded anything in the environment at day and night as visual information, in other words, signs, and I especially paid attention to the brightness and darkness of objects because these are very much related to the characteristics of the "figure-ground" structure. There is a profile line between "figure' and "ground", and "figure" is described by this profile line.

Accordingly I translated the pictures of the townscapes at night into those of meshed brightness. This operation is a way of "digitalization" of something "analogous". From this process sign as visual stimuli was received.

I extended the concept of "figure-ground" relationship into the three dimensional space at night, and I defined the space illuminated by the light as a positive space (figure) and the rest of this kind of space as a negative space (ground).

Through this, I concluded that there is some possibility in which we can have multi-layered space that is organised by only the light at night, which is considerably different from the three dimensional space at day.
Figures from the "Exterior Design in Architecture"
Specifically speaking, the color and texture of the surface of the buildings are meaningful for us at day, however at night whether an object is meaningful or not is dependent on the existence of the light. The relationship between the objects and ourselves at day transforms into another type of relationship at night.

Objects which are illuminated by the light are something meaningful to look at, and objects which dissolve into the darkness have nothing to do with us.

Looking at the three dimensional environment through visual information, that is, brightness as a stimulous quantity, I figured out that urban space at night is composed of the combination of the signs which is different from that at day.

Compared with the urban space at day in which there are tremendously complicated combinations of "figure-ground" relationship, there are far fewer combinations of "figure-ground" relationship at night. Therefore the surface of the urban space transforms from day to night.

In this study, I have an opportunity to think of the meaning of the constancy which is one of the characteristics of night scape.
The Persistence of Memory. Salvador Dali
At day, as the sun continuously changes its position in the sky in relative sense, the relationship of shadow and lighted parts in the townscape also changes. However, at night, even if stars light in the sky, we are in the silent environment as if time had stopped or melted, dream turned into the real, and the real turned into dream, and we come to think of something endless, or eternal, and our imagination opens the door to the world of mythology, past and future.

Although this graduate thesis was elementary study of cognitive science, visual communication theory, and phenomenology, this was good introduction to semiology and semantics in the urban space for my subsequent study.

This concept of the space at night was got into shape in my graduation designing of architecture, "Space of Spiritual Archaeology" (1979) under the guidance of Professor Yoshinobu Ashihara at the University of Tokyo.

In this project, I designed a park for meditation and solitude, where we would be able to make our memories of the past alive, and foresee the future in the eternal passage of time.

This park was designed after the ancient sacred spaces, and was intended to imply the cosmographical figure on the ground in terms of its elements, like sundial gateway, four
Our environment is terribly urbanized.
Do many people,
do many buildings,
do many affairs,
and too much information surrounds us.

The pressure of others deprives us
of our freedom and rest.

We are forced to keep up with
the bewilderingly swift changes of the times.

We're apt to be short-sighted,
and to think only of the present.
Anyone, is restricted to the actual.

Accordingly,
we need a space
of meditation and solitude,
that is "grotta"
like the earth's womb
that protects us
from the outer world.

Farsighted point-of-view,
and not science
but cosmology,
astrology, mythology,
romanticism, alchemy,
and daoism
will be
more necessary to us.

Why don't you
think of the ancient and the future
in the eternal passage of time?

Let's get free from
daily routine, and
wander about
this park
as a space of spiritual archaeology.
rivers from the fountain as the center of the world, underground grotta, and planetarium in the large round pond, which are some of archetypes of sacred spaces, where we could communicate the past, the future, and the eternity of the time and space, or the cosmology.

From 1979 to 1983, I have been one of the members of the editorial committee to Japan Institute of Architecture for "Kenchiku Sekkei Shiryo Shusei vol.10" published by Maruzen, Tokyo in 1983. This was a fascinating opportunity for me to have a look over a number of plans of various buildings through all ages and countries. Under the guidance of Professor Yoshichika Uchida at the University of Tokyo, who is the chief editor of this book, I and Mr. Fukuda, one of the senior architects of our firm, turned our attentions to the spatial organization of buildings which are composed of some unit spaces, for example, Housing, Dormitory, University, Hospital, and Pavillion.

We selected fifteen precedents, and we grouped them into four categories in terms of their geometrical characteristics as follows,

1) collective form on the grid plan
2) collective form of clusters of units
3) combination of collective forms
4) three dimensional collective form
I think that these studies were very helpful for me to open my eyes to the study of the structure of architectural and urban space, and the relationship of type and typology.

In the course of my study of grouping various plans into several types of spatial configuration, I came to think that there are some persistence in formal patterns in architectural and urban space.

Building is composed of rooms and communicational spaces (corridor, hall, staircase,..) including service spaces. Type of the shape of the rooms is divided into two categories; circle and square. The way how to shape the buildings is also grouped into two categories, that is, articulating approach and synthetic approach. (see chapter one)

As Aldo Rossi say, Building types have not changed from antiquity up to today, but this is not to say that the actual way of living has not changed, nor that new ways of living are not always possible. (see next page. figures from "Precedents of Architecture")
Based on these studies, I would like to extend the conception of figure-ground relationship into the field of semantics and semiology so that I will be able to approach to the way how to take a look at an informationized urban space.

As an introduction to my thesis "On the Articulation and the Synthesis of Space in Architectural and Urban Design", I would like to quote the epilogue of my former graduation thesis "On Nightscape" (1979), as follows,

In this study for graduation thesis entitled "On Night Scape. An Observation of Exterior Design at Night through Visual Communication Theory or Melting Cheese Clock like Night Galaxy Train", I found that there are interesting issues on the architectural and urban space design, planning, history, and arts, and literature, and I became excited at those issues by encountering many nice books and articles. So I am happy that to discover various interesting themes made my range of "sight" and "vision" more wider.

The conception of Here and There, which Gordon Cullen mentioned, is very much interesting to me. He categorized the concept of the place into two groups, that is, known here and unknown there, and known here and known there.
However, I suppose that there might be unknown here and unknown there. Because any time we may encounter such a situation as we feel unknown here and unknown there, especially while travelling.

When we visit unknown place in even day time for the first time, it seems to be difficult for us to identify ourselves with unfamiliar world. Especially when we visit unknown place at night, the way how to identify ourselves is considerably interesting problem.

If we fortunately find a certain known object as a landmark over there, it is easier to find where we are, but in the case that we have to walk around the unknown place at night for the first time, it is not so easier to find our ways.

In this sense, "Diaries in Paris" written by Kunio Tsuji give us interesting issue. In these books, he describes vividly the process of making a sense of place in his mind. When he arrived in Paris, everything was new to him, and there was no inter-relationship between him and the environment. However, as he walked around the city, he gradually grasped at the image of the city.

This is exactly, as Rudolf Schwarz says, that Paths and places become memories, and time and space become the history of his life.
In this sense, A.N. Whitehead, who mentioned the inter-relationship of every event, subject and object, became a very much interesting figure to me at this moment.

Accordingly, these arguments lead me to the problem of a place (topos).

"The place has its own features. This is beyond description. Without experiencing the place, we cannot understand these characteristics... Thoughts which were born in that place embrace this kind of the "spirit of the place" (genius loci)... The sentences written by Alan are filled with the atmosphere of the sound life around the Curtier Latin."

from "A Journey toward the sea in mid-day" by Kunio Tsuji.

"Any time
Field, woods, rocks, and eternity
Were only a simple space to me
Ah, my lover
You make these places meaningful"

By Goethe.

This poem expresses the essential problem of the relationship between a person and one's environment.
And the problem of "anaolgue and digital" is also important to me. Something continuous is recognized in terms of something discontinuous.

The continuity of Time or Space is recognized in terms of the movement of needles on the clockface, or the procedure of the number of the digital watch, or the series of the wire poles, light poles, and series of the intersections of the streets or the durations of discontinuous alternation of day and night.

Day and Night. M. Escher
Chapter One
Analogue and Digital

Nude Descending a Staircase No.2.    Marcel Duchamp
Visual Communication

"Quidquid videtur, sub angulo videtur"
by Jean Francois Niceron, Thaumaturgus Opticus, 1646.
(Now matter how anything is seen, it is seen at a certain angle.)

"Non idem est apud comnes gentes modas horas numerandi."
by Emanuele Menigant, Perspectiva Horaria, 1648.
(The way how to count numbers is not necessarily common to groups)

Visual Information Processing

Since 1960, when "The image of the city" was published, this study on the description in two dimensional and one dimensional space of the image of the city has been largely done by many scholars, architects, and urban designers including Kevin Lynch, Donald Appleyard, Philip Theile, and David Crane, and so on.

In this chapter, I would like to take a look at the environment as an object composed of visual information, visual stimuli, or signs. Primarily, this discussion in the field of visual communication was focused on the way how to visualize the invisible matters, something abstract, or indication like a traffic-control sign, and advertisement, and etc. (fig. 1)
For example, subway maps show the diagramatic relation which is usually invisible for us from the over-ground viewpoint, and Atlas is able to show us the whole "world" which we cannot experience or grasp at one time actually.

As our society has been gradually informationized, many visual images, signs, and a lot of information have overflowed the urban space, TVs, magazines, newspapers, and posters, ... etc, and have surrounded us, and will keep on transforming our environment.

At first, I would like to recognize the way of perceiving the architectural and urban space through the visual communication processing. The flow chart of visual information process is "visualized" as follows. (fig. 2).

Every act of perception, as A.N. Whitehead mentioned, involves two modes; perception by "presentational immediacy" and perception by "casual efficacy". By "presentational immediacy" Whitehead refered to what we have been trained to think of as the immediate data presented to us by our senses, for example, patches of color seen with eyes, noises of certain pitch and intensity, sensation of hard, rough, and soft surface, and so on.
Fig. 2

object

stimuli

sensory process

segmented feature description

pattern recognition

pattern identification

response

media

perceive

sensory memory

selection

short term memory

long term memory
As Naum Gabo says, "We have to distinguish between two faculties which are in action when we see things; psychological faculty of sight and the conscious faculty of vision. Sight is only a vehicle by means of which we receive the visual signals. Vision is, however, is what our consciousness makes of these sight-signals."

Gabo's "vision" seems to be considerably similar to "Le Systeme des Objets" (Baudrillard) and "presentation by casual efficacy" (Whitehead). According to C.H. Waddington, Whitehead's claim is that a more primitive element in perception is awareness not of sheer sensations, but rather of entities which are perceived as having some potential effectiveness in the world. It is more elementary to perceive casually efficacious things, such as "chair" (something suitable for sitting) or "table" (something to put things down on) and it is relatively sophisticated business to "see" such things as mere colored patches or other pure sensations. In fact, it takes training --- which some artists, such as the impressionists have willingly undertaken --- to be able to do so.

Generally speaking, there exists an information process between the transmitter and the receiver. There are codes in processing. Transmitter encodes the information and the receiver decodes the information.
The receiver's translation of the decoded information is beyond the transmitter's control. This is under the versatile interpretations. When the receiver has an information, the indigenous memory to the receiver may be evoked, or special symbolic meaning may occur (the faculty of production of meaning) between the interaction of the object (encoded information) and the receiver.

Signs are the primordial agreement, for understanding of a semiotic code binds two (or more) people in a set of tacitly agreed upon conventions about what stands for what.

As A.N. Whitehead says, the individual character of every "event" including the percepient (or perceiving event), is created by its interaction with everything else. In act of perception, the person involved is neither a merely passive reflector nor a dominating actor who imposes his pre-conceived scheme of things on to his surroundings, but is instead a knot or focus in a network of to-and-fro influence. This "fact" is not a little related to Gestalt Psychology, Pattern recognition, Semiology, and Semantics.

In this sense, I would like to review the characteristics of our sense, in a sense, that is, "sight" and "vision". Because I think that our "vision" or system of thought is not a little related to the characteristics and the limit of our sense.
Sense of Vision

Sensation of Perception

We continuously have an interaction between ourselves and the environment. That is, we receive the stimuli from the outer world at the same time we make approach to that. Stimuli which we receive from the environment (urban space) gives us some important information on the situation of the environment. I would like to begin with this process; visual information process and cognitive process.

As Pierre Guiraut says, "Sign is a stimulus, that is, substance which we can feel, and its inner image in our mind is associated with any other images. Primary stimulus is for communication, and secondary stimulus is for evocation of images. Sign is the primary stimulus."

Characteristics of Vision

For us, sense of vision is the most developed and important sensor, and it is said that this sense is more advanced than any other senses, and this sense plays the most important role of perceiving the environment. By this sense, we receive in general 70% of the information of the outer world and 20% by the sense of auditory and 10% by the sense of taste and smell.
Perception and Attention

According to "Cognitive Science", when information first enter the human system, it is registered in sensory memories. These sensory memories include an iconic memory for visual information and echonic memory for auditory information. Sensory memories can store a great deal of information, but only for brief periods of time.

Attention is a very limited mental resource that can only be allocated to at most a few cognitive processes at a time. The more frequently that process have been practiced, the less attention they require. Eventually they can be performed without interfering with other cognitive processes. It is automatic processes that are highly practiced and require little or no attention, and processes that require attention are called controlled. Two types of models have been proposed to describe how perceptual patterns are recognized.

1. Template matching, which involves matching a whole pattern at once.
2. Feature analysis in which components of a pattern are first recognized and then combined.

A set of Gestalt principles organizes perceptual features into units for perception. We can sometimes recognize large organized units before we can recognize the components that make up these units.
Combining features in order to recognize a pattern requires attention. The amount of attention required decreases with the familiarity of the pattern.

Pattern recognition involves an integration of bottom-up processing and top-down processing. Bottom-up processing is the use of sensory information pattern recognition. Top-down processing is the use of the pattern as well as general knowledge in recognition.

Figure and Ground

When there are two different characteristic territories in a view, which is seen as a significant object?

Figure 3. is a well known K. Lewin's figure of vase, which is composed of two parts; one is in white and the other is in black. According to Lewin, we see at a glance a white vase against the black background, however, at the next glance, on the contrary we can see the two faces in black.

When we see this white vase, this form is "figure" and the rest of this form is "ground" in white.
fig. 3
Even if these are objective stimuli, their psychological characters alternate according to the situations; whether they are "figures" or "grounds". The part which is seen as a "figure" is well organized and solid, and has substantial characteristics, and the boundary made by the difference of the lightness between "figure" and "ground" becomes a profile line.

In this way, as you see, if the environment is devided into "figure" and "ground", this is very much meaningful from psychological point of view. Because, even if there exists a certain object in the environment, as long as this object as a substance. In other words, what we don't regard as a substance has little meaning to us. We put attention to the limited things that we can regard as a "figure".

According to Tom Porter, by fixing our attention to the central vase image as object we can recognize the traditional conception of form in space where the profile lines defining the vase represent form-oriented thinking the vase symbolizes architecture of containment.

However, if we psychologically switch off to a concentration on outer area (the two faces profiles) we discover that the surroundings negative transforms into a positive but different entity which not only reflects the nature of the vase but takes on a life and meaning of its own.
Figure and ground are inseparable. They define each other. The reason why we can regard something as a figure is that there is the ground against this figure. These two are complementary. The relationship of figure and ground is in relation to the that of "Here and There" which Gordon Cullen mentioned in his book, "Townscape".

There is a figure against a ground, and at the same time a ground against a figure. They are opponents each other.

Gestalt Principle of Organization

Various principles determine how we segment an object into components.

1. proximity. element close together tend to organize into units.
2. similarity. objects that look alike tend to be grouped
3. good configuration.
4. closure.
5. same fate.

These principles will tend to organize even complexity novel "stimuli" into units. We see that recognition depends critically on the initial segmentation of the figure.
Recognition can be impaired when this Gestalt-based segmentation contradicts the actual pattern structure. One of the important Gestalt claims is that the whole is more than the sum of the parts.

A configuration can be recognized more quickly than its parts, perception of the configuration must be something other than the separate perception of the elements.

Our discussion on the Gestalt psychology indicates one way in which a context influences pattern recognition. These Gestalt principles are typically viewed as an innate, and reflecting factors wired into the perceptual system at birth. However, there is also evidence that pattern recognition is influenced by acquired knowledge about the structure of "stimuli", in other words, "signs".

Organization of Information

According to the "Cognitive Science", Knowledge can represented in terms of images that encode the spatial structure of items, or in terms of linear ordering that encode the sequence of items. The subjects are asked to compare two mental objects with regard to dimension such as magnitude, they engage in a process similar to that of discriminating between the size of two physically presented objects.
Both spatial images and linear orderings have a hierarchical organization in which sub-images and sub-lists can occur as elements in larger image or list. Subject have more rapid access to the first and last elements of a linear ordering, and they tend to search from beginning to end. They can more rapidly judge the order of elements in a linear ordering, the further the elements are apart.

Two types of knowledge representation as follows, that partially preserve the structure of presentations.

1. spatial images.
2. linear orderings. (+ p145)

Spatial images preserve information about the position of objects in space. Images are often described in visual terms, but it is questionable whether spatial images are tied to visual modality.

Linear orderings preserve information about the sequence of events, such as the order of words in a sequence. A linear ordering represents events by organizing them sequentially, like beads on the string.

Although they represent different things, spatial images and linear orderings do have a number of features in common as I mentioned above. It is possible to encode both spatial images and linear orderings into hierarchical structures in which smaller units appear as chunks within larger units.
We will also see similar hierarchical encodings for memory representation for meaningful material. It seems that human memory tries to encode the world in terms of small, easy-to-process packets, and when there too many items, memory creates packets within packets.

It is frequently speculated that this is because the human information processor is limited in terms of the amount of information it can process at once.

According to "Cognitive Science", evidence for the importance of meaning-based representations comes from the experiments showing that memory for a verbal communication retains not the exact wording but just the meaning for a picture retains not visual details but rather a meaningful "interpretation" of the picture.

Initial memory for an event contains both visual and verbal details. However, information about these details tend to be rapidly forgotten within the first minute following the stimulus, leaving only memory for the meaning of the events.

Because memory for meaning is no longer lasting than memory for physical details, individuals can improve their memories by more meaningful form. The meaning of sentence or picture can be represented as a network of propositions.
Often propositions enter into hierarchical relationship in which one proposition occurs as a part of another proposition. Propositional networks reveal in graphical form the assertive connections between concepts.

As Fred I. Dretske says, "most pictures have a wealth of detail, and a degree of specificity, that makes it all but impossible to provide even an "approximate" linguistic rendition of information the picture carries in digital form."
Analogue and Digital System of Thought

Paradoxically speaking, we need "discontinuity" in order to perceive the "continuity" of an object. We need some outline or contour line of the object in order to determine what the object is. For example, without gradient texture of the perspective in two dimensional plane, we cannot perceive the depth of the space, and similarly without contour lines on the map, we cannot figure out the form and the degree of the gradient of the mountain and the site.

An animation film and a movie film are, as it were, perceived continuously, however they are composed of the series of the segmented frames which run in the speed of 16-24 frames per one second. (see chapter four)

With the series of discontinuous but constant druming, we feel nice rhythm of the music. With the series of discontinuous break sound of the joints of the rail, we feel that time actually goes on while we are travelling by train.

We are not so good at getting hold of something changing little by little. It is true that we can perceive gradual change of object by our sense of vision, auditory, and the others. However, we cannot measure specifically the degree of change in lightness, in tune of sound, and in distance of the object, or verocity of the object, by our senses.
At the same time, in order to transmit our idea, or some impression of objects, we have to select "appropriate" words and put them in linear orderings, that is, sentences according to our logical process. It is impossible to convey all my impression from the visual stimuli or auditory stimuli in terms of even innumerable words. I think that the acquisition of language is essential to an organism's having the capacity convert sensory information into linear orderings (digital form). Therefore our knowledge and belief are inevitably selective and exclusive.

I may safely say that our sense is not absolute but relative. In other words, our sense is based on the analogy and discriminative ability; the similarity and dissimilarity of these characteristics as follows,

1. spatial images
2. linear orderings
3. meaning

We usually think whether there are some similarity or difference between the characteristics of objects in front of us and the characteristics of something already known by us. According to Gerald Weinberg, this kind of analogy based on the structure of the system which is familiar to us is called identification of the system. (cf. template matching and feature analysis in chapter one)
I may safely say that this method mentioned above, in which we look for the structure of unidentified object by corresponding the elements of already-known structure to the elements of this object, in other words, from the point of view of similarity, this attitude is regarded as one of the ways of reasoning. (see. abductional reasoning)

In this reasoning, we need profound knowledge of already-known objects and their structures. Otherwise we may misunderstand the unidentified object. Since our recognition of objects is likely to be dependent on our individual viewpoints after all, I would like to review the system including the transformational process of this kind of individual viewpoint (framework). However, at the same time, there seems to be something common to these individual viewpoints as well, which may be sometimes an illusion though. So one supposes that one recognizes objects based on one's illusional common sense, and so does a society.

"When we look at the same city from various points of view, that city must be recognized in various ways... There are a number of simple-substances in the world, so there are a number of universes as same amount of that numbers... However, those are nothing but only perspectives in only one universe from the different points of view of various "monads". " says G.W. Leibnitz. (see chapter four)
System is a point of view. One's viewpoint is said to be influenced by one's experience and knowledge, and attitude to the values. It is that we don't realize one's viewpoint until one makes some decision making.

As Herbert Simon says, "One made up a large number of parts that interact in an nonsimple way. In such systems, the whole is more than the sum of the parts. Although the whole is under the influence of its components, it has qualities and characteristics of wholeness which are the synthesis rather than the mere aggregation of parts, not in an ultimate metaphysical sense, but in the important pragmatic sense, that given the properties of the parts and the laws of their interaction, it is not a trivial matter to infer the properties of the whole."

Generally speaking, a system is regarded as a composition of following elements.

1. relationship of the parts
2. function of elements
3. structure of object as a whole
4. process of transformation

The systems approach is an attitude of mind in facing complexity; it reflects a search for the interrelatedness of things in any problematic situation.
It is a formation of articulation and synthesis of things based on a certain supportive structure of concepts on forms.

Categorization

One way to grasp at the object is to articulate the objects by grouping elements of the object into some parts in terms of similarities or hierarchical order (as I review our cognitive process), and through this operation, we grasp at the clearer relationship of elements, and structure of the object.

As Charles Hitch and Roland Mckean say, "whereas mathematical models and computations are useful, they are in no sense alternatives to or rivals of good intuitive judgement: they supplement and complement it. Judgement is always of critical importance in designing the analysis, choosing the alternatives to be compared, and selecting the criterion."

The basis of judgement in this operation is dependent on the observer's experience and value system, and that is as follows,
1. High and Low
2. Large and Small
3. Good and Bad
4. Linear order and Spatial order
This is based on the figure-ground relationship, and therefore this is in relation to the meanings of object to the observer, and sense of gravitation. (cf. owned body)

According to Cognitive Science, Categories reduce the complexity of the environment and the need for constant learning and enable us to recognize objects, respond appropriately, and order and relate classes of events. In other words, categories consists of objects or events that we have grouped together because we feel that they have some similarity to one another.

The ability of categorization enable us to interact with our environment without becoming overwhelmed by its complexity. When we classify discriminably different objects as being equivalent, we respond to them in terms of their class membership rather than unique items. Although classification is by itself a useful way to organize knowledge, classes can be further organized into subordinate and super-ordinate class.

For example, as Christian Norberg-Schulz says, "places are known in terms of the noun like countries, regions, landscapes, settlements, and buildings. When places classified we should therefore use terms as island, bay, forest, grove, or square, street, courtyard, and floor, wall, roof, ceiling, window, and door, and etc."
Accordingly, places are designed by nouns in a sense. This implies that they are considered real things that exist, which is the original meaning of the word substantive.

All nouns have resulted from the precedents' classifications of the environment. The meaning that a word evokes is inevitably tied to an individual experience, knowledge and value system (scientific autobiography).

However, we have something to take into consideration. It is that any object in the world can not be a mere assemblage of things, and at least in the semantic level, everything is in inter-relation to many other elements and these relationships are not necessarily regulated under the control of linear and hierarchical structure like "tree" structure.

As we can not see more than one TV program at one time, and as we can not go along more than one street at the same time, or in other words, as we can not stay at more than one place of "here" at the same time, we can not have more than one point of view at the same time. (see Leibnitz's phrase of page 46)

If we would like to take another view of the same object, we have to take some time to move our view point from one place to another. It is true both of physical situation and of conceptual situation.
Therefore, when we get a certain classification, there is a certain selected meshes or value system of the viewer's own behind this classification.

As C.H. Waddington says, "A.N.Whitehead began by arguing --- he was one of the first to do so --- that the theory of relativity had made it impossible to go on accepting the conventional view of the world as consisting essentially of an assemblage of material things, which exist in space but endure through time. The theory of relativity shows that simultaneity, or instantaneousness, can only be defined with reference to some particular spatial frame of reference, and that two occurrences which may be simultaneous in one frame may happen at times which, in another frames, are different."

In this thesis, I regard an architecture as an object in the visual communication process in chapter one, then if we approach to the representation of architecture by means of "code", we may think of this relationship between code and message as one of forms of langue and parole, while this relationship is completely different from the aural and litteral language at a glance.

At this point, the message mentioned above expresses formalistic order of the articulation and the synthesis of the elements of space.
At the same time, if we regard architecture as a linguistic practice or process of production of meanings, this kind of architecture is at the level of architecture as a "system of objects" which produces meanings and reflects our experiences, knowledge and value system.

It is true that even this kind of architecture is also based on the substance resulted from construction, and on its own formalistic order, and we cannot reduce this into another media. However, if we admit that there are receiver and transmitter (designer of the architecture) who are connected with linguistic activities of architectural design I mentioned above, as Diana Agrest and Mario Gandelsonas says, architecture becomes as it were a device which produces poetical meanings.

In this sense, when we distinguish a certain class or activity from the others by using symbols of language or figures, we come to make an artificial border in the originally continuous territory. (see chapter two. lived space)

Visualization of Concepts

When we transform our ideas from mind to an renewed awareness of space as dynamic, tangible substance, we pass across the threshold of analogue and digital. This is a critical point of the architectural and urban design.
In order to visualize the idea in our mind, we have to articulate our idea by grouping into some categories, and make the inter-relation between them clearer, or by the idea in terms of words and symbols, and to do template matching by means of some forms of abstraction.

These operations are all based on the principles of Gestalt psychology, the relationship of figure-ground reversal as I review in chapter the former section, and any resultant response is primarily experienced through visual perception. Therefore these are regarded as the articulation and the synthesis of images.

Diagrams and Models

According to the designer, Keith Albarn, a diagram is evidence of an idea being structured --- it is not an idea, but a model of it, intended to define its characteristic features. It is a form of visual communication which increases the pace of development or allows an idea to function and develop for the thinker while offering the possibility of transferring of an idea or triggering of notion.

Through appropriate structuring, according to Tom Porter, the diagram may generate different notions or states of mind in the viewer. However, these different notions or states of mind are susceptible to three factors which are also rooted
in the designer's mind --- his familiarity with the mode of the expression, the amount of information that it supplies and, embracing all, his provisions of experience of three dimensional space.

In order to develop an effective model and facilitate the evolution of forms in response to this model, a variety of diagrams as follows may be employed. (each with their own potential and conceptual set of rules which aid decision making)

1. Schematic Diagrams
2. Operational Diagrams
3. Functional Diagrams
4. Flow Diagrams
5. Analytical Diagrams

As J.H. Buun says, "A model is something that we construct in order to predict the characteristics of a large problem whose nature we do not yet understand. For example, the paradox of model building is that models also reverse the order of time's arrow by imaginatively incorporating the future in a fictive construct. In literary theory such fictive models are called "doubles". They represent reality with a slight difference."

According to J. Buadrillard, this representation is called simulation, and these fictive models are called simulacres.
Seigo Matsuoka says, "Objects may be perceived in a multitude of different ways. Our consciousness of the model quality of an object allows us to choose whatever one needs at that particular time. This choice gives us freedom from a single way of perception. However, models are difficult to define. They may be called replicas of the real thing, substances for hypotheses, or things more authentic than the real thing. Sometimes the model, although it is not the real thing, can give us a more accurate idea of essence of the real object or phenomena."

We cannot dispense with an analogical model. Without this kind of model, we cannot approach to the reality of the object. In order to grasp at the huge mountai or large site, or the globe, we invented the maps or atlas which are composed of counter lines, scales and boundary lines. Maps and Atlas are in one form of models of the some part of the nature which we cannot take a look at one time.

What is interesting to me is that the ancient maps and atlas show the more explicit and symbolic relationship of places, landmarks, and geographic features than the more precise maps in the modern period. (see chapter four)
The Earliest Map of Veice in 1348
Seeing is, in fact, one form of selection, and structuring these selected elements. This process is regarded as a geometrization. A certain nice memorized scenery is composed of impressive elements, and this kind of structure is similar to that of portrait.

This process above is action of seeing, and interpreting. The range of our perception and cognition has a certain limitation according to the observer’s concerns or feeling, in other words, socio-cultural frameworks. Accordingly, recognition means to grasp at objects as geometrical relationships and experiences within a limited framework.

J.C. Young says, "As symbols of the genetic code the polynucleotide molecules serve to arrange the parts and action of organism so that they correspond to, or represent, their environment."

Therefore, for J.C. Young, as J.H. Bunn pointed out, an analogy with human communication code is both advantageous and severely problematic, because one uses a speech code that is later in the evolutionary process in order to understand a hereditary code which is biologically more fundamental.

Our diagrammed catalogue should therefore be helpful in distinguishing torsion in human semantic code from the various kinds of foldings in arrangement of DNA molecules.
Similarly, the catalogue might serve to separate the Euclidean geometries by which we construct signs, tools and models from the generation of more or less symmetrical forms found in other living activity.

As Alberto Perez-Gomez says, "This "owned body", as Merleau-Ponty would say, is the locus of all formulation about the world; it is not only occupies space and time but consists of spatiality and temporality. The body has a dimension. Through motion it polarizes external reality and becomes our instrument of meaning; its experience is therefore "geometrical". The existence of this "geometry of experience", Husserl's phrase, beyond the body's (and mind's) spatiality constitutes the thrust of architectural design, the creation of an order resonant with the body's own."

According to these arguments related to geometries and formal structure of architectural space, I would like to regard an architecture as a linguistic process (text).

Architectural space is not boundless but limited by the boundary to the exterior space, and also structured by the various meanings. (see chapter two. articulation of lived space)

"Limit is a boundary. Architecture: a form of knowledge whose limits are constantly questioned." (Bernard Tschumi)
When we regard architectural and urban design in conceptual level as a linguistic process, we may agree that the generation and choice of the shape of rooms are similar to those of vocabulary in the text.

According to Paolo Portoghesi, there are in general two alternatives for architects in designing architectural spaces. He classified the way of architects' choice of shapes into typology and iconology.

As Rafael Moneo says, "The very act of naming the architectural object is a process that form the nature of language is forced to typify. The identification of an element like "column", or of a whole building -- "court house" -- implies an entire class of similar objects with common characteristics. Type can most simply be defined as a concept which describes a group of objects characterized by the same formal structure: inherent structural similarity. It might even be said that type means the act of thinking in groups. The design process is a way of bringing the element of a typology -- the idea of a formal structure -- into the precise states that characterizes the single work."

Typology is a choice of one, or some combinations, of the forms that have been adopted for a long time. Iconology is a choice of symbols which combines the meanings of the words with shapes.
For example, in the case of religious architecture, whose function is relatively limited, all internal architectural spaces are designed as it were one room, and its explicit plan is likely to be covered with simple geometry which gives birth to the meaning of the shapes.

Accordingly, when the rooms are designed autonomously, architecture as a whole comes to have a certain meaning based on the geometrical figure, which is in close relationship to the "geometry of experience".

On the contrary, it is the most popular design method that we take advantage of the typology in architectural and urban space. Then the articulation and the synthesis of rooms, or the syntactic relationship of the rooms as units is the main subject to study in this thesis.

Any building is based on an invisible network of functional syntax, which originally has nothing to do with visible formality. Functional syntax is independent relationship of elements of architectural space. Therefore the syntactic system at this functional level does not necessarily overlap any other syntactic system at the formalistic level.

However, the articulation and the synthesis of elements are under restriction of the construction technology, because architecture is substance resulted from construction.
The position, size, and order of rooms as units are restricted in three dimensional space by the primary structure of the architecture as a text.

As Rafael Moneo says, "Formal structure, as the aspect of the gestalt, would mean speaking about centrality or linearity, clusters or grids, trying to characterize form in terms of a deeper geometry. However, this reduces the idea of type as formal structure is, in contrast, also immediately connected with reality -- with a vast hierarchy of concerns running from social activity to building construction. The group defining a type must be rooted in this reality as well as an abstract geometry."

When we regard an architecture as a text which produces meaning through synthetical combination of articulated elements, we should note that this text has primarily been structured by the main frame of the structure.

As I mentioned above, when we see organization of architectural space as a combination system, we have a prerequisite of two operations; the articulation of space into units and the synthesis of units into the architecture as a whole. Accordingly, we may include the recombination, addition and removal of units in this system. (see chapter three)
Chapter Two

Concepts of Space

This must be the Place. Lichtenstein
Theory of Place

In the early of this century, Many architects designed proposal urban design plans. Some of them were like gardens (e.g. city for three million) or some of them simply followed the scattered slab-like building distribution without taking consideration into the characteristics unique to the specific place (genius loci).

Their interpretation of a city was not something substantial but diagramatic space. Their ideas of city was too conceptual to concrete the living place. They had not anything to do with concrete space of substance.

During the period from 1950's to 1970's, although architectural and urban space had been likely to be recognized as something more static and explicit from the point of view of articulation and synthesis of space, there were some of the important turning points of our attitude to space and time, for example, "theory of place", "street as urban space", and "pattern language".

This transition resulted from the structural thinking through linguistic and anthropology, and also from the relativity through contemporary physics and biology, in parallel with our trials and errors in designing architectural and urban space.
The problem of observer in contemporary physics, in other words, Heisenberg's principle of uncertainty and also Einstein's theory of relativity, has had influence on our notion of space and time.

Especially, many philosophers discussed the difference between measurable time of watch and lived time of mind. At that time, we were in a sense under the control of the abstracted way of thought which at first we had invented for analysing the movement of the objects in space from the universal point of view, apart from the properties of objects and places.

As C.H. Waddington says, "There have been two main controversies among scientists about the interpretation and understanding of the indeterminancy principle. One was about the question whether we really have to accept uncertainty as a basic fact in the structure of nature, or whether we can hope, with further advance of science, to find some way of coming back to rigidly deterministic scheme of causation. The other was about the even more profound problem: do our scientific theories give us knowledge about exterior nature uninfluenced by man, or do they, on the other hand, merely show us the way in which the human mind happens to work in its interaction with the rest of the universe?"
For the past fifty years, many philosophers have been discussing the problem of the structure of time in the existential world. It is Henri Bergson that formulated this problem as a problem of duration, in other words, that of concretely experienced time which is distinguished from the subjective time which we can measure by watch.

James C. Maxwell says, "Absolute space is conceived as remaining always similar to itself and immovable. The arrangement of the parts of space can no more be altered than the order of the proportions of time. To conceive them to move from their places is to conceive a place to move from itself. But as there is nothing to distinguish one point of time from another except the different events which occur in them, so there is nothing to distinguish one part of space from another except its relation to the place of material bodies. We cannot describe the time of an event except by some reference to some other event, or place of a body except by reference to some other body. All our knowledge both of time and space is essentially relative."

Through Simmer and Heidegger in Germany, Sartre and Merleau-Ponty dealt with this issue in France after second world war. This brought about revaluation of the Aristotelian concept since it was forgotten by the dominance of Platonic Renaissance thought.
According to Aristotle, "A place surrounds that whose place it is. A place is not a part of what it surrounds. A thing's primary place is neither smaller nor greater than it. A place can be left behind by a thing and be dissociated from it. Every place is either up or down, since each of the simple bodies moves up or down to come to rest in its resident place."

This shift of our notion of space and time in the contemporary physics also had a considerably strong impact on the design theory of architectural and urban space.

"For Space, in the image of man, is place. and time, for the image of man, is occasion. Space has no room, Time not a moment for man. He is excluded. In order to "include" him, he must be gathered into the meaning space and time." said Aldo van Eyck in 1960.

According to O.F. Bollnow, As we distinguished the difference between mathematic, abstract and measurable time of watch and concretely experienced time of mind, I think that we can distinguish the difference between mathematically and physically abstracted space and concretely experienced space (lived space).

Setting duration or lived time, as Minkowski mentioned, against mathematical time of watch, Bergson made it clearer what the characteristics of lived time of mind is all about.
Similarly by setting lived space against mathematical space, we make it clearer what the characteristics of lived space is all about, as follows.

Mathematical Space

This space is homogeneous. In this space, each point is not superior to any other points. As there is no a priori origin coordinate axes, we can choose any point in this space as an origin at our own accord.

Each line is not superior to any other lines in this space. We can choose any three lines as a coordinate axes.

This space itself is not articulated into any inner parts, but completely homogeneous and open to all directions endlessly. This space is on the assumption mentioned above.

Lived Space

In this space, there is a certain original point which is superior to the other points. This particular point is given in some way through one's every day experience in one's living place.

There is a certain superior axe to other directions. This axe is in relation to our attitude to the gravity on the earth.
Information about the gravitational orientation of objects is, as Fred I. Dretske points out, available in the sensory experience because the visual input is processed jointly with body-tilt information from proprioceptive sources.

In this space, directions and places are characterized and articulated, and in the relationships of these directions and places, we construct meaningful articulation of our lived space. (see chapter one.)

Although there can be a transition from one territory to another territory which have ambiguous or melting boundary, there are as usual clearly impressed boundaries in this space. Lived space is likely to have considerable discontinuation.

Lived space is, at first, given as a completely limited neighborhood, and later various experiences make this space extend gradually toward the endless world.

Any space within lived space can not help but be influenced by the values or meanings. Through the relationships of our everyday living, lived space affects us positively or negatively. Any space in this lived space has its own meaning to a person.
Gordon Cullen was one of the forerunners who took attention to this lived space. Since the end of 1940's, he had analyzed the environment through a number of field surveys, and he extracted various elements which make up the environment as follows.

Sense of "here and there", "concavity" and "convexity", "continuity", "imaginary space", "focal point", "enclosure", and etc. are based on the characteristics of our sense which respond to the contrast, and accent.

His book "Townscape" is well-known for various examples of the way how to give visual coherence and organization to the buildings, streets, and space that make up urban space.

Moreover I would like to appreciate his basic concepts as follows, because this viewpoint of sense of "here and there" is very much important for us in the informationized environment.

Vision is not only useful but also it evokes our memories (experiences and knowledge). It is almost through the vision that environment is apprehended.

1. Optics

Although the pedestrian walks through the town at a uniform speed, the sensory of town is often revealed in a series of jerks or revelations. G.Cullen calls this serial vision.
From a scientific or commercial point of view, town may be a unity, however from his point of view, we have to split it into two elements; "existing view" and "emerging view".

2. Place

Since it is an instinctive and continuous habit of the body to relate itself to the environment, the sense of position cannot be ignored. It becomes a factor in the design of the environment.

Arising out of this sense of identity or sympathy with environment, this feeling of a person in street or square that he is in it or "entertaining it" or leaving it, we discover that no sooner do we postulate a Here than automatically we must create a There, for you cannot have one without other.

3. Contents

Many towns display the mixture of styles, materials and scales. Within a commonly accepted framework -- one that produces lucidity and not anarchy -- we can manipulate the nuances of scale and style, of texture and colour, and of character and individuality, juxtaposing them in order to create collective benefits. In fact the environment thus itself into not conformity but interplay of "This and That". Accordingly, the concept of place implies an here and there.
When we go outside a place, we are setting off on a path or route to another place. Paths are the routes connecting places.

It is primarily important for us to orient ourselves in the environment. We have to retain and organize our knowledge of the environment.

The concept of place implies an inside and outside. When we go outside we are setting off on a path or route to another place. Paths are the routes connecting places.

Whereas a primary attribute of a place is its quality of being connected, even if it is only an imaginary boundary, the linear quality is primary in the case of path.

Paths imply movement. Places imply pause or rest. The network which is new to us allows movement through the area from one point on the perimeter to another.

It affords a large choice of starting and finishing. It affords a large choice between any pair of these points.

"The urban landscape, among its main role, is also something to be seen, to be remembered, and delight in. Giving visual form to the city is a special kind of design problem, and rather new one at that." said Kevin Lynch in the preface of his book, "The Image of the City".
In 1960's, many architects were more or less involved in the tendency as an emphasis on the coherence of formalistic and functional syntactic system, and it was remarkable that Lynch tried to deal with the problem of urban form, or the characteristics of urban form, which had been if anything neglected at that time.

He insisted that a city should be so legible that we can understand where we are, and images of the city could be further distinguished according to their structural quality: the manner in which their parts were arranged and integrated.

He regarded the city as the object to be perceived by observers, and he articulated the features of the city into these five main elements which make up the urban space as follows, path, node, district, edge, and landmark, like Kandinsky regarded point, line and plane as three main elements of painting, and through this operation, he tried to construct the method how to design the urban space in terms of these signs.

According to K. Lynch, concepts of node, path and district denote the basic spatial structures which are the object of man's orientation, and the perceived inter-relationship of these elements constitute an environmental image.
It is true that "The image of the city" was not written from architectural point of view, and did not point out the problems of modern architecture urban space, in other words, scattered distribution of slab-like buildings, and "Townscape" was not written from sociological point of view. However, these works convinced us that visual communication in the city is much more important, and this issue has been taken attention to more and more.

As Alberto Perez-Gomez say, "The creation of order in a mutable and finite world is the ultimate purpose of man's thought and action. There was probably never human perception outside a framework of categories; the ideal and the real, the general and the specific, are given in perception, constituting the intentional realm that is the realm of existence.

Perception is our primary form of knowledge and does not exist apart from the a priori of the body's structure and its engagement in the world. This "owned body", as Merleau-Ponty would say, is the locus of all formulation about the world; it not only occupies space and time but consists of spatiality and temporality.
Street as Urban Space

In this sense, Camilo Sitte is one of the eariest architects, who payed attention to the perception of space. He mentions that all architectural - spatial effects are based on the philosophy of the space perception.

According to C. Sitte, the ratio between the built-up and the open spaces is exactly reversed in modern city planning. Formerly the empty spaces (streets and squares) were a unified entity of shapes calculated for their impact, today building lots are laid out as regular shaped closed form, and what is left over between them becomes streets or plazas.

As Sitte says, "The eye is located at the apex of the visual pyramid; the objects observed are to be found on radii of which the eye is center, approximating more or less an arrangement which is concave with regard to the viewer. This is the perspective basis of the focussed designs of Baroque masters, and it is the form by which strong effects can best be achieved naturally because in this way a maximum of objects in space can be perceived and appreciated at the same time. The modern building presents the exact opposite of this experience. Expressed in capsule form, then art demands concavity but exploitation of building site, convexity."
In the process of forming a city, it is true that the street is a both the urban space framework and arteries of transportation as an infrastructure. However, it is also true that the street is not a mere course of volume flow or abstract lines, but it comes to be a place that must be regarded as a three-dimensional reality supported by many various sets of objects in the environment.

In order to become familiar with a city, and to interpret a city, which is, as it were, nondescriptive text, we should walk around the city, and look at the city, and feel actual atmosphere of places in the city. We should experience the dimensions of the exterior space in the city, and accent and contrast of space.

Combination of "existing experience" and "emerging experience" provides us a psychological reaction, movility and rhythm. These formative characteristics and continuity or discontinuity are able to be read through the series of building walls.

As Thomas Schmacher points out, the capacity of people to perceive immediately the street as figure not only promotes a sense of enclosure and orientation but also delimits the territory of the public realm as including its vertical building surface of the building.
"It is decisive for the spatial character that building appear as surface rather than mass." (C. Norberg-Schulz)

In this way, many persons' claims are that in order to be comfortable urban space, street should attain figural character, and this is achieved by means of a continuous building surface, which is not only presuposes a certain density, but that the street wall appear as a varied repetition of the same motives.

I think that continuity and discontinuity of street are actually composed of a certain formulated ways of expression of the surfaces of buildings along the street.

And the concern with the continuity, discontinuity, and variation of the street wall lead us to the new attitude to the past, in other words, typological analysis of the urban fabric, contextualism and symbiosis in architectural and urban design. (see chapter three)

As C. Norberg-Schulz says, "A subdivision into relatively small unit is necessary. The large scale units common today (1960's), therefore, do not only destroy human scale, the varied continuity which is its essence. The varying character of the city districts gives the townscape the most elementary kind of variation and guarantees man's possibility of choice." (this article was published in 1971).
This trend stimulates us to approach to the urban space according to the parts rather than the whole, and also to pay attention to the characteristics which is unique to the place (genius loci). As Francoise Choay says, "The buildings and the streets are inseparable; they define each other."

These formative characteristics and continuity of urban space were revaluated and came to be expressed in the parts of the city, which is a small realized whole city, and in which the composite whole is suggested by its parts.

Accordingly urban space is regarded as a process which is based on, as it were, the "symbiosis" system of each architectural and urban space from ecological point of view.

"The intermediate position of streets in the environment, intersecting public and private, individual and society, movement and place, built and unbuilt, architecture and planning, demands that simultaneous attention be given to people, the physical environment, and their numerous interrelations." says Stanford Anderson.

In the course of accommodating with the various expression patterns of building facades and building plans within a certain range of oscillation of types, we came to have another shift of the notion of time in architectural and
urban space, that is, urban space as a continuum across time from the point of view of its custom, its life, and its morphology.

"The individual is born in the village which existed before him. But, slowly this village becomes his homeland, a place lived in and full of memories. Paths and places become memories, time and space become the history of his life."

( Rudolf Schwarz )

Pattern Language

Epi-genetic process in biology and linguistics had considerably strong impact on the understanding of the repetitive production of architectural and urban space in the course of time.

As C.H.Waddington says, "The physical sciences are concerned mainly with repetitive process. They observe and analyse how the wheel go round; rather rarely and only to a minor extent, are confronted by systems which can be said to build up or develop.

Thus for the physicists chance appeare merely as a degree of uncertainty in process which he would like to be able to consider as precisely repeatable; it is a disturbing element. The biologist find his material presents to him
some processes of rather different type. He watches an egg developing and differentiating into adult organism."

It is impossible for physicists to deal with this kind of process, whose characteristics is that information originally contained in the system is becoming expounded into significant expounded complexes.

Biologists call this kind of process "epi-genetic". There is no reason in principle why epigenetic process should not completely deterministic, or why chance should play an role in them.

According to C.H. Waddington, its fundamental role in biology is in connection with another type of "building up" process with which biologists have to deal, that is, "evolution". The continuation of evolution requires that there should be a succession of chance mutation of hereditary factors as time passes. And this kind of process is called "stochastic process".

The practice of contemporary architects shows that they have accepted chance as a potentially valuable component of the creative process. (see chapter three, especially O.M. Ungers, R. Krier, and L. Kroll, and so on)
In his famous article "City is not a tree" published in 1965, paradoxically speaking, C. Alexander had an premise that form defines social structures, so formal patterns have to correspond to the patterns of social activities, and he concluded that city should not be a tree from the point of view of architectural and urban form. Although he tried to formulate that form need not follow the functional syntax, his claim seems to be completely against Lynch's argument at a glance.

However, there are two aspects of the syntactic system of the city. In the semantic level, the network of our lived space is very diversified, and may be semi-lattice. On the contrary, in the formal structure level, the configuration of spaces as elements is likely to be a tree. I think that he should have distinguished this difference at first.

It is true, as he pointed out, that our system of knowledge is closely related to the system of categorization, which is based on the acquisition of language in order to convert sensory information into digital form.

Every object in the environment has its own name, or noun, for example, street, road, highway, bridge, or wall, window, roof, door, staircase, floor, and so on.
Everything in the environment belongs to the system of objects (Le Systeme des Objets). These are classified, and related to each other in a tree form in the catalogue. However, in our association, in our lived space, everything is interrelated, or overlapped with each other in completely complicated way which is based on meaningfulness to individual memory.

Accordingly, C. Alexander selected 253 patterns which are capable of overlapping each other, and he called this system of scenes and situations of places "pattern language".

The way how to succeed to the agglomeration of archetypal forms or patterns is understood analogically in terms of the language model like "langue and parole". For F. de Saussure, language (langue) is a collective system within which the individual speaks (parole). Language is the unconscious reality that structures speech.

"Pattern Language" is composed of the criteria of the architectural and urban design, and "Timeless Way of Building" of the "algorithm" of "pattern language". However, there seems to be the most critical point in his claims in both two books above, that is, the problem whether every place which is given its character by certain patterns of events is always interlocked with certain geometric patterns in the space, or not. (see chapter three)
Living language must be re-created in each person's mind, and it is true of pattern language as well. When each person interprets pattern language into architectural and urban space, the genetic way in which each person forms the architectural and urban space is subjective to one's viewpoint.

His pattern language may be called a typology of memorable places or scenes of our life. The common pattern language is a collective process of these patterns. This framework as a pattern language is comprehensive of our "collective memory", and also of the "image of our environment".

Each person's image of the environment is dependent on the way how to experience some objective places in the architectural and urban space. That is an accumulation of memories based on the every day's experience, that is, "lived space".

The notion of "Musee Imaginaire" was also a new attitude which was brought about by the shift of the notion of time and space in physics, and this seems to be denoted by the concept of "lived space".

Since we were born, we have experienced our own life in our own ways. We have studied our culture as a whole, and memorized not all of them but some of them in our own ways.
As we have learned the language (langue), or the syntactic system of spatial images and linear orderings in the course of life, we have learned the way how to organize the space since childhood from surroundings (native town, cities, encyclopedias, picture books, text books, drawings and plans of the great architects, and so on).

As Herman Herzberger says, "Every solution at a different place or time is an interpretation of the archetypal body general and specific, like the individual application of a familiar. We cannot make anything new, but only reevaluate already existing images, in order to make them more suitable for our circumstances.

What we need to draw on is the great "Musee Imaginaire" of images, where in the process of change of signification is displayed as an effort of human imagination, always finding a way to break through the established order, so as to find a more appropriate solution.

It is only when we view things from the perspective of this enormous collage, that, with aid of analogies, we can resolve the unknown and, by a process of extrapolation arrive at solution which can improve our circumstances."
Chapter Three
Type and Typology

Istogrammi D'architettura. Superstudio
Hermeneutics of Urbanism

A city formulates an ever changing multi-layered stratum, in which any time something is going to be added amorphously. To infill some buildings in the part of the city means to transfer the wave of signifying of its meanings as a whole.

To read the accumulated memories of the city of the past is as good as to read the memories which we will have in the future. In each direction of vector of the arrow of time, we need to have our imagination to read the city.

Moreover, the most essential problem is the basis of the way how to read the city, that is, our "episteme". The different viewpoints result in the various images of the city.

Since Cerda's "Teoria general de urbanizacion", there have been many theories and proposals of urban design. However, generally speaking, the subjects which have been and still are discussed are if anything not the actual, objective, and three-dimensional cities, but the cities as models in the designers' mind.

Those various theories and models may be called the results from the trials and errors through the interpretation of the city, or the problem of the tension between the quasi-integrated whole and the quasi-segregated parts of the city.
<table>
<thead>
<tr>
<th>Year</th>
<th>Project Description</th>
<th>Designer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1767</td>
<td>Royal Crescent</td>
<td>J. Wood the Younger</td>
</tr>
<tr>
<td>1773</td>
<td>Project for la Salin de Chaux</td>
<td>C. N. Ledoux</td>
</tr>
<tr>
<td>1784</td>
<td>Project for Cenatoph to Newton</td>
<td>E. L. Boullee</td>
</tr>
<tr>
<td>1789</td>
<td>Washington D.C.</td>
<td>P. C. L'Enfant</td>
</tr>
<tr>
<td>1812</td>
<td>Regent Street</td>
<td>J. Nash</td>
</tr>
<tr>
<td>1847</td>
<td>Salt Lake City</td>
<td>Brigham Young</td>
</tr>
<tr>
<td>1851</td>
<td>Crystal Palace</td>
<td>J. Paxton</td>
</tr>
<tr>
<td>1859</td>
<td>Barcelona Plan</td>
<td>I. Cerda</td>
</tr>
<tr>
<td>1867</td>
<td>Vienna Plan</td>
<td></td>
</tr>
<tr>
<td>1882</td>
<td>&quot;Teoria general de urbanizacion&quot;</td>
<td>I. Cerda</td>
</tr>
<tr>
<td>1889</td>
<td>&quot;City Planning According to Artistic Principle&quot;</td>
<td>C. Sitte</td>
</tr>
<tr>
<td>1893</td>
<td>Chicago World Exposition</td>
<td></td>
</tr>
<tr>
<td>1902</td>
<td>Proposal Plan for Extending Amsterdam Southwards</td>
<td>H. P. Berlage</td>
</tr>
<tr>
<td>1904</td>
<td>Une Cite Industrielle</td>
<td>T. Garnier</td>
</tr>
<tr>
<td>1910</td>
<td>City Planning Exhibition in Berlin</td>
<td></td>
</tr>
<tr>
<td></td>
<td>First International Conference on City Planning in London</td>
<td></td>
</tr>
<tr>
<td>1912</td>
<td>Chicago Plan</td>
<td>Burnham and Bennet</td>
</tr>
<tr>
<td>1915</td>
<td>&quot;Cities in Evolution&quot;</td>
<td>P. Geddes</td>
</tr>
<tr>
<td>1922</td>
<td>City for Three Million</td>
<td>Le Corbusier</td>
</tr>
<tr>
<td>1924</td>
<td>Study for Ideal City</td>
<td>L. Hilberseimer</td>
</tr>
<tr>
<td>1925</td>
<td>Plan Voisin</td>
<td>Le Corbusier</td>
</tr>
<tr>
<td>1927</td>
<td>Project for Central Berlin</td>
<td>L. Hilberseimer</td>
</tr>
</tbody>
</table>
1930 Ville Radieuse (Le Corbusier)
1942 The Plan for London (MARS)
1945 Project for City Center of Saint-Die (Le Corbusier)
1951 Chandigarh (Le Corbusier)
1957 Brazilia (L.Costa)
1958 Urban Planning Project for Capital Berlin (A. + P. Smithon)
1959 Proposal Plan for the Noord-Kennemerland District in Holland (van den Broek and Bakema)
"The Image of the City" (K.Lynch)
1960 Tokyo Bay Plan 1960 (K.Tange)
1961 Project for Toulouse-le-Mirail (Candilis, Josic and Woods)
The Spatial City (Y.Freedman)
"Support" (N.J.Habraken)
"Townscape" (G.Cullen)
1964 Berlin Free University (Candilis, Josic and Woods)
Plug in City (Archigram)
Walking City (Archigram)
"Notes on the Synthesis of Forms" (C.Alexander)
1965 The Plan of Amsterdam (van den Broek and Bakema)
"The Architecture of the City" (A.Rossi)
"City is not a Tree" (C.Alexander)
1967 Habuta '67 (M.Safdi)
Milton Kayens Plan
1969 UN Competition (C.Pelli)
1969  Instant City ( P.Cook )
       Continuous Monument ( Superstudio )
1970  Interplanetary Architecture ( Superstudio )
       Reflected Architecture ( Superstudio )
       The Twelve Ideal Cities ( Superstudio )
1972  City of Captive Glove ( R.Koolhaas & Z.Zenghelis )
       Cinque Storie del Superstudio
       Gallarateese Housing ( A.Rossi & C.Aymonino )
       "Learning from Las Vegas" ( R.Venturi & D.S.Brown )
1975  Competition Plan for Welfare Island ( O.M.Ungers )
       "Collage City" ( C.Rowe & A.Koetter )
1977  "Pattern Language" ( C.Alexander )
1979  "Urban Space" ( R.Krier )
1980  Competition Plan for Les Hares
       ( S.Peterson & B.Littenberg )
1981  "Manhattan Transcript" ( B.Tschumi )
1982  Isle of Dogs ( D.Gosling & B.Maitland )
1983  Kurtform, Berlin ( O.M.Ungers )
       Parc de la Villette ( B.Tschumi )
       ( OMA )
       Dockland, Rotterdam ( D.Walker & P.Baker )
The New City (A. San'Elia). 1914 / Friedrichstrausse Office Bldg. Project (Mies van der Rohe). 1919
Amsterdam Southwards (H.P. Berlage). 1917 / Study for ideal City (L. Hilberseimer). 1924
...against nature is violence against man... Of all the tasks that concern architecture, the one of making an environment in cooperation with nature and in harmony with man is the most urgent.
"In architecture, concepts can neither precede or follow projects or buildings. In other words, a theoretical concept may be either applied to a project or derived from it."

(Bernard Tschumi)

Every time we are in a designing process, we encounter the situation in which we have to choose one idea or one sketch among the other alternatives.

Design is, as it were, a decision-making process. It is a series of choices of a number of studies which are based on the analysis of given conditions and projection of the activity patterns in architectural and urban space in the remote future.

As I review in chapter one, to design space or place is a one form of process of the articulation and the synthesis of space in which we transmit our concept in mind into three-dimensional volume in terms of geometrical elements.

This operation starts with a primary conceptual diagram, by which we would like to approach to the structure of the architectural and urban space at first.

At the same time we make an approach to the objective space by means of the analytical way which places emphasis on the activity patterns in the architectural and urban space.
In both ways, in order to actualize our idea and spatial concept, we are likely to take advantage of conceptual or physical models in one-dimensional, two-dimensional, and three-dimensional space, which are based on a certain assumption, which is derived from an interpretation of the given conditions in social and physical context.

When we design an architectural and urban space in the city, in other words, when we project our aesthetics and interpretation of the city at present into the future social and physical context, we cannot do away with the most reliable information about present situation against the previous process so that we can approach to the various activities in the near future through simulation based on the segmented information mentioned above within the limit of our abilities. In this sense, I think that there is little difference between to "read" the city and to design the architectural and urban space.

According to the psychology, Deduction is the reasoning whose theoretical process is from "Rule" through "Case" to "Result". Induction is from "Case" through "Result" to "Rule", and Abduction is defined as a theoretical process which is from "Result" through "Rule" to "Case". In these cases, rule corresponds to a major premise, case to a minor premise, and rule to a conclusion.
That is, in this "abductional" reasoning process, we take at first a conclusion as an hypothesis, and from this point we draw a rule as a major premise, and at last we adapt this major premise to the more specific case as a minor premise.

In other words, when we are confronted with segmented parts, through this kind of reasoning, we are able to construct a certain meaningful assumption of the whole.

It is said that science in the first generation examined, described, and classified the phenomenon in the nature, scientists in the second generation analysed, and induced the results of the precedents, and we in the third generation should synthesize, through this abductional reasoning, the limited and segmented data as parts into the whole which is more than the sum of the parts as much as possible.

In order to simulate, we need the model which is designed to reproduce, by a certain representation media (mathematical model, conceptual model, and etc) the similar structure of the substantial object. (see chapter one.)

This simulation model is more or less what we would like to understand by means of something different which we have already understood. In other words, this means one of the identifications of the structural similarities of the objects.
Through this operation, we come to eliminate some unnecessary characteristics to this reproduction so that time may be compressed, or scale may be reduced.

As James H. Bunn says, "Black boxes are conceptual devices that remind one explicitly that the contents and processes inside the hypothetical problem are not known and cannot be tampered with. What we have called models are called in the parlance of system analysis white boxes. G. Weinberg explains that white boxes simulate the hypothetical problem in exactly the opposite way to black boxes. Black boxes perceptually and conceptually reminded one that the innards of a system are concealed in impenetrability, while white boxes serve as three-dimensional reconstructions that approximate as exactly as the theory permits the revealed inner working of a problem."

In this sense, city which we would like to approach to is a black box, and the various cities as models which we construct by our imagination are white boxes.

The notion of architectural and urban space in architects' mind today are completely different from those of 1960's or 1860's. Our approach to the city and the conceptual models of urban space have changed more drastically than the actual urban spaces have been transformed for the last hundred years.
What we have argued about are, if anything, the cities as models rather than the city as substance. As qualitative analysis of the activities in the city, like systems approach, or simulation models, or others, have been developed, our models of the city have gradually shifted from the realistic image of the city as substance to functional, structural and symbolical model of the city.

In the course of time, the discourse of the city has been polarized. On the one side, urban space has been translated into digital and diagramatic descriptions of its functions, or planning methods. On the other side, urban space has been translated into the various images of poetic, or literal discourse which are more intuitive and analogous, and also which can not be followed by the former digital approach.

There are two trends in approach to the city. One is the city as process, and the other is the city as urban form.

Generally speaking, for the past fifty years, we have transformed our "episteme" according to the interdisciplinary evolution of the latest results of structural approach, anthropology, linguistics, cybernetics, information process, and genetics and so on.

At each level of the transitional process of the theory of architectural and urban space, as far as conceptual syntactic system is concerned, we did not necessarily wrong
diagrams or models of the city. Further more, basically we did not necessarily go beyond the analogy of the organism in the urbanism that P. Grddes addressed: city as an organism, in which housings are regarded as cells, and streets as veins for information and energy.

It is an essential description of the characteristics of the activities in the urban and suburban space. It is easy for us to imagine the structure of the city by this kind of analogy. As long as architects and planners dealt with newtown development in the suburbs, this model was useful.

However, when we translated these models into actual three dimensional space in the existing urban fabric, we had no idea of what urban space is. We had no "sure foothold", as O.F.Bollnow says, in this field.

The "courage to the matter of little moment" lead us revaluation of the works by C. Sitte; vernacular collective housing forms and street scapes from the point of view of "hard ware" of the architectural and urban design.

On the contrary, many revolutional urban design proposals in the 60's should be revaluated as simulation models from the point of view of "soft ware" of the architectural and urban design. Therefore I would like to analyze these points by reviewing the drastic shift from "mega-structuralism" to "contextualism".
Growth and Change

"The first thing to do is to abolish the rue corridor with its rigid lines of buildings and its interminingling of traffic, pedestrians and houses." (S. Gideon. 1941)

"Against all sense, the habit of aligning building on the streets is to persist, creating the present practice: alignment on the street and enclosed courts and light wells, two forms entirely contrary to human well-being."

(Le Corbusière. 1946)

"The problem of re-identifying man with his environment... cannot be achieved by using historical forms, etc, as the social reality they presented no longer exists."

(Alison and Peter Smithon. 1953)

In 1952, Willem van Bodegraven pointed out the importance of time as a formative factor in architectural and urban design. "We are faced with the necessity of evolving structures and forms which can developed in times; which can remain a unity and maintain the coherence of the components at all stages of their growth. The absence of this must lead to self distruction."

"The street as a corridor disappeared with the Charter of Athens. Today it is the spatial corridor (the green-lined spac between the functionalistic blocks) which has to go."

(George Candilis. 1956)
Even if Chandigar, Brasilia, Cambera and the other projects influenced by the modern city planning had beautiful figures in plans, when these projects were realized and resulted in vague and vast scattered slab-like building distributions, they could not produce and embrace the various meanings and activities within their spaces.

However, paradoxically speaking, we have to take it consideration that we should not necessarily deny the beauty of figures in the two dimensional plans in the urban space from the point of view of the legibility of the city. (see chapter four).

Compared with the former diagramatic schemes (in 1920's and 1950's) of city planning, the architects tried to approach to the "surer foothold" and the reality of dwelling place and "unity" and "community", because of the confrontation with the existing urban fabric and the problem of suburbanization in the city.

They invented the key words like "growth pattern", "cluster", and "mobility", in other words, named new concepts as such, and they developed their "vocaburary" of the articulation and the synthesis of space (link, web, stem, spine and so on) by emphasizing the idea of new syntactic systems (see chapter one).
These reflected their interests in the dynamic change in living organization. Whether or not community could exist is dependent on the relationship of the housing. Street was regarded as not only a place for traffic circulation but also a channel for communication. (see. Toulouse le Mirail by Candilis, Josic and Woods, or Amsterdam Plan by van den Broek and Bakema,)

With the concept of growth and change in architectural and urban space, they tried to find some structure, which might embrace this kind of dynamics in terms of an infrastructure from the point of view of analogy of biological morphology.

When we think of the biological morphology as a model for change and growth within the individual body, we have to deal with the change and growth in the series of continual and measurable time.

According to A. Luchinger, to take an attention to time as a formative factor concerns primary structure within which embraces growth and change, Growth and change brought a certain regularity in their train, in which a grid began to play a prominent role. "The grid is the most striking feature of structualism together with the configuration of formal units. The grid could be compared with rhythm, the ordering measure in music." (A. Luchinger)
We can imagine the continuity of the growth in the city, however, an architectural space is not an actual cell which can grow by itself, and it is transformed, extended, or rebuilt by residents' desires. Growth and change in the actual architectural and urban space are discontinuous.

It should be noticed that almost all urban design projects based on these ideas were designed not as infills for renovations or extensions in the existing urban fabric, but as complexes of new buildings in the suburban sites or filled islands beside the high density area of the cities. (See Tokyo Bay Plan 1960, Bochum University, Amsterdam Eastward, Urban Nucleus and UN City project, and University of Calabria. and so on.)

As Naum Gabo says, "Nature is not a chessboard, and we are not pieces moving on it in strictly defined order within strictly prescribed co-ordinates. The patterns of nature can be as many as our consciousness is capable of drawing."
Megastructure

"We can no longer think of the vast modern city as a Gestalt, and we can no longer give the city an image that fits its nature, the city has been intensely fragmented, that is a mixed system of various parts. In this kind of city, the process is only its characteristics."

( Arata Isozaki. "City Invisible". 1967 )

In this sense, in 1960's we had an illusion that we could deal with a city as a whole under the control of almost single value system, so we placed an emphasis on the whole rather than the parts. In other words, we thought that we should give strong, and solid structure to the framework of the urban space not by soft ware but by hard ware from the point of view of legibility.

It is true of such architects as K.Tange, Bakema and van den Broek, and Candilis, Josic and Woods, C. Pelli, V, Gregotti, Metabolists, Archigram, and so on. Especially, urban renewal proposal plan in Frankfurt, and Berlin Free University Plan showed explicitly this characteristics in which they tried to formulate a small "total architecture" by visualizing the structure of communication space, which united all elements of the architecture. So did Proposal plan for the Community of 25,000, and Tokyo Bay Plan 1960 ( K.Tange ), Amsterdam Plan ( Van den Broek and Bakema ).
"They did not rebuild the old urban fabric, but they designed new way of building in which buildings were not as finite, fixed in program and junction, but rather as generous, adaptable framework for variety of condition and uses." (E.H. Zeidler)

As Candilis, Josic and Woods mentioned about this issue on the Berlin Free University, "The question is not to build the flexible building but to establish an environment in which buildings appropriate to their function may occur, and to encourage an interaction between these buildings and their environment."

However, as E.H. Zeidler pointed out, this scheme was intended to be a minicity, was resulted from modern movement and related to the megastructure that envisage the city as a single building.

"We need a process of structuring, a process that links the functional units... We come to believe that developing the process of structuring is basic theme of urban design... Creating an architecture and a city may be called a process of making the communication visible in space in which growth and change are incorporated as constant factors."

This is what K. Tange said in 1960's. Although these architects regarded as structuralists designed new-type street which is completely different from that of our
inheritence of the past, I think that his concept of urban
design is still valid as long as we are careful in
concretizing the idea into three dimensional form. On the
contrary, the statement as follows is interesting.

"We believe that the whole is more important than single
parts and that only the urban artifacts in its totality,
from street system and urban topography down to the things
that can be perceived in strolling up and down a street,
constitute this totality. Naturally we examine this Total
architecture in terms of its parts... A new series of
writings began to appear in the 60's which called for a
theory to explain the formal and structural continuity of
traditional cities. These saw the city as a formal
structure which would be understood through its continuous
historical development. From this point of view,
ararchitecture was considered neither as the single artistic
event proposed by the avant garde nor the industrially
produced object, but now as a process, in time, of building
from single dwelling to the total city."

( Aldo Rossi. "The Architecture of the City"

As far as concepts of architectural and urban design are
concerned, both totality of the city is not so different
from each other. The shift of basic concept from visible
solid framework to invisible soft framework, in other words,
difference of physical and conceptual support.
Analogy of Organism

Under the influence of K.Tange, one unique notion of space in architectural and urban design was addressed by Metabolists. It was natural that they should take an attention to the process of growth of organism again in order to understand dynamics in architectural and urban space, which had been already pointed out by P.Geddes.

They had a good point, however had an emphasis more on the technical solutions which embrace growth and change in architectural and urban space, in opposition to the fact that epigenetic process of dynamics in organism is encoded in its DNA (cf. C. Alexander).

They tried to design "hardware" of the architectural and urban space without making approach to the process of social organization. I think that this software network process could be regarded as one of the biological or ecological aspects. Later on, C.Alexander pointed out this issue, and evolved his theory through his study on pattern language.

Kisho Kurokawa designed some buildings which are composed of solid structure and detachable capsules, for example, Takara Pabilion (1970), Nakagin Tower, and Sony Building in Osaka. However, after that he has never designed any capsule system building.
It is true that the idea of seived space and servant space of Luis Kahn was exiting and influential at that time, but this kind of Capsule system building is less opened to other purposes or renovation. It is difficult to re-use Nakagin Tower Building for office or commercial facilities.

It was turned out that it is less important to discuss about change and growth in at least architectural space from technological point of view.

Arata Isozaki mentioned this issue on his project, "The headquarter building of Oita Mutual Bank has a board-like spine in the middle where small protruding structure on both wings are supported by thick beams. This has been regarded as a typical work of metabolism. Being metabolism, it is natural to anticipate an extention of a building as a metabolism. In other words, harmony of space is necessarily considered in advance to prepare for building extensions. But actually, the reality always defeats the theory. I myself had suspicious about "anticipated" space. What is necessary during large-scale extention construction is to forget completely about the existing system and seek harmony of the whole. I call this "contextualism" to my work of twelves years ago."

In designing Sony Building, Kurokawa adopted capsules for only equipment systems, like toilets or air condition
packages. This is a precedent of the same system in Hong Kong Bank Headquarter Building (N.Foster Associates) and Lloyd's of London Development (R.Rodgers and Associates). In this way, metabolists' theoretical attitude has been succeeded and erabolated by some architects, like R.Rodgers, or N.Foster.

As for K. Kurokawa, as he was originally interested in the dynamics in the urban space from the point of view of cybernetics, and he erabolated his theory from metabolism to symbiosis from the point of view of context.

At this point, Professor N.J. Habraken was one of the fore-runners who had an emphasis on the monotonousness of mass housings and also on their spatial variation through dynamic consents between architects, clients, and the others. He also paid his attention to something changeable (infill) and something stable (support), however his emphasis is more on the desires of those persons involved with the projects than on the technological solution in architectural construction.

The structural attitued to the architectural and urban design which is valid for the such facilities as hospitals, universities, factories, and housings, designed in the large suburban site, eventually lead to the revaluation of the characteristicss of the traditional urban space.
Probably the concept of structural thinking should be supported, however, there is no inevitability to visualize the structure of space by means of megastructure except for aesthetic intentions.

Although the architects were based on the concept like "a city is a large house, and a house is a small city", and also implied their longing for visible unified urban totality or legibility within the "city invisible, the architects' enthusiastic use of megastructural three dimensional grid iron infrastructure system may be an interpretation of urban corridor as a surer foothold, at the same time reveals their inclination to regularization and mechanization of architectural and urban space.

The two pictures of urban renewal project in Frankfurt designed by Candilis, Josic and Woods ( page 121 ) show that no matter how these architects' design theory at the conceptual level might have been useful, those at formal syntactic level were ineffectable in the traditional urban fabric.

We should recognize the difference between the characteristics of megastructure and urban fabric. megastructuralism to the new framework of the architectural and urban design. ( see. University of Calabria and Les Vignes Blauches )
- Tokyo Bay Plan 1960 (K. Tange)
Noord-Kennemerland, 1959 / Competition for Town Center, 1962
(van den Broek & Bakema)
Amsterdam Eastward (van den Broek & Bakema) 1964
Toulouse le Mirail (Candilis, Josic and Woods) 1961
Bochum University (Candilis, Josic and Woods) 1962
Berlin Free University (Candilis, Josic and Woods) 1963
Articulation of Public and Private Domains

Die Artikulation öffentlicher und privater Bereiche

Articulation des domaines public et privé

Study model of rights of way system
Arbeitsmodell des Wegeystems

Articulation of Public and Private Domains / Urban Renewal Project in Frankfurt (Candilis, Josic and Woods) 1963
Nakagin Building (K. Kurokawa) 1972
Urban Nucleus. 1967 / UN City Project (C. Pelli) 1969
Fukuoka Mutual Bank (A. Isozaki) 1971 / 1983
New Campus of University of Calabria (V. Gregotti) 1974
Articulation of Public and Private Domains (Candilis, Josic and Woods) 1963
Superstudio

Superstudio has existed in a close position to Hans Hollein, Archizoom, Archigram and Team Four, and they ironically visualized the supremely abstracted extension of rational, geometrical, megastructural, and transperant ideas on architecture, urbanism, monument and utopia.

As they says in the "Cinque Storie del Superstudio", they made up catalogues of their ideas like the catalogue of products of the large corporations. New productive ideas are generated by the structure of the former ideas as well as the present stimulating influences from the outer world.

"Architecture never touches the great themes, the fundamental themes of our lives. Architecture remains at the limit, and intervenes only at a certain point the process, usually codified, furnishing answers to rigidly stated problems." (Cinque Storie del Superstudio)

These five stories are composed of various segmented scenes and scenarios of models of a city as if they were made for the movies.

Before Italo Carvino's "Invisible City" was published in 1972, The Superstudio had produced the way in which they expressed the characteristics of the city as a text with juxtaposition of segmented descriptions of the city.
The Continuous Monument is a reinterpretation and critique of the famous monuments in the world, as Cristiano Toraldo Di Francia says, "This represents the extreme limit of the myth of the architect as a demiurge and of a self sufficient architecture which stands as an ideal model of development, counter posing the critical use of the discipline."

The Twelve Ideal Cities are typology of Utopia which had been represented by novels, poems, and pictures since the beginning of the history: Atlantis (Plato), New Atlantis (F.Bacon), Christianapolis (Valentin Andreae), Utopia (T.More), Nowhere (W.Morris), or Screen City in the Vermilion Sands (J.G.Ballard), and etc.

"The Twelve Ideal Cities represent another moment in the process of logical extrapolation from the urban reality; the negative attributes are rationally pushed to their limits. The resulting metaphors render dramatically evident the contradictions of contemporary urban organization."

Their works dissolved the boundary between architectural design, movies, science fictions and fantasies.

"Utopia has always meant for man the distant winking of a star fountain of illusory experiences and irrealizable dreams to shield us from the horror of the real. But reality alone can generate the determination to look for the road to salvation." (Cristiano Toraldo Di Francia)
"New New York" The Continuous Monument (Superstudio) 1969
Contextualism

"Here it is not a question of knowing which comes first movement or space, which moulds the other, for ultimately deep binding is involved like the prisoner and his guard. After all, they are caught in the same set or relationships: only the arrow of power changes direction." (B. Tschumi)

Paradoxically speaking, the analytical process which is intended to rationally formulate the urban space seems to be anti-urban attitude. The urban planning method is capable of separating the activity patterns and land use patterns, and also making it possible to control every parts of the urban space, however ultimately this process is likely to induce the attitude in which we may interpret urban space as a linear combination of extremely disconnected clear-cut architectural elements rather than as a highly inter-related complex, as Christopher Alexander pointed out.

Functional diagram is a determinate factor of these planning methods, but this diagram embraces too much less flexibility in activity than that in the actual urban space. Because this is likely to converge the fixation of the form with its internal activity, and to restrict change and growth in terms of extension and renovation.
In architectural design, we sometimes are able to pursue self-sufficiency and unity, or legibility in its form. In these cases, as B. Tschumi says, "The architect's view of the user's needs determines every architectural decision (which may, in turn, determine the user's attitude). Here, the architect designs the scene, writes the scripts and directs the actors."

On the contrary, although we suppose the existence of architectural space within the urban space, we have to manage diversity and variety rather than unity in urban design by trying to break away the conventional city planning method which was inevitably based on the single value system.

"Events have an independent existence of their own. Rarely they are purely the consequence of their surroundings. Events have their own logic, their own momentum. In literature, they belong to the category of narrative (as opposed to the descriptive)." (B. Tschumi)

In urban design, we manage the more larger substantial composition, and it comprises the limits of architectural design. Urban design is likely to connect architectural space with its context and changeability rather than the formal language and technological solution for structural and mechanical system.
Compared with the Megastructuralism or Metabolism, Contextualism seems to be far from the biological and ecological point of view at a glance. However, it is called, from the point of view of information process, symbiosis system of architectural and urban space that emphasis on the inheritant structure and the transformation of existing type by dissimilating the ultra-structure and also by formulating the mutualconsent between the architects, clients, and social and physical context.

"Design is reading. Design is writing existent architecture. Design is transforming existent types, both architectural and urban, both building and place types. Design implies a dialectic between the new in relation to the memory of the old. But, design is also a production of meaning. The transformation of the old into the new, and more: the mutation of the known into the unknown. Design is also losing the memory as a possibility of invention, design is also amnesia." (Diana Agrest and Mario Gandelsonas)
Collage City

Under the guidance of Professor Colin Rowe, many architects and students have tried to find a way of humanistic dialogue between Le Corbusier and Camilo Sitte. They faced up to the reality, they have studied the characteristic problems of modern architecture in the traditional urban fabric.

In order to take advantage of the vocabulary of modern architecture and historic architecture, both of which have already been in front of us, they have developed the way how to neutralize the conflict between the old and the new by means of typological studies of urban morphology.

As Thomas Schumacher says, "Form need not follow function, building programs and uses need not be expressed in the configuration of buildings and towns. This renders out-of-context comparison feasible. Hence a church plan and housing block can be rationally compared. The manipulation of form at large scale relate directly to the organizational patterns of buildings. Such smaller scale works serve as analogue modes for large projects. Thus, urban form is seen as processing of a life of its own, irrespective of use, culture and economic conditions. Formal continuities transcending periods therefore become an important consideration."
Typology or Collective Memory

"Architecture is always the discovery of the "genius loci", from which it derives. The theme of adaption to the "genius loci" is at the same time the thematization of architecture as dialogue with tradition, with historically formed values and with their enhancement in order to form a new artistic expression." (O.M.Ungers with R. Gieselman in 1960)

As I pointed out in chapter one, it is stochastic process that I would like to call the attitude to the production of the variety in significancation in the formalistic syntactic system in both infra-structure and ultra-structure level. I regard this operation as a simulation of the process of the city.

What we have to pay attention to O.M.Ungers's theory in architectural and urban design is that he takes advantage of "typology as a device of cultural memory" for breaking away the unitarity in the urban space.

As O.M.Ungers says, "The cities, with the exception of a few museum cities, are created through a discontinuous process of growth and are therefore contradictory in themselves. Different epochs have left their traces on the city turns out to be a dialectical structure as far as its essence and its image are concerned (collective memory)."
He keeps fundamentally the syntactic system of the formal elements within a certain limited oscillation of architectural vocabulary in the context, and at the same time he tries to enrich the individual spaces by dissimiliating its ultra-structure.

Among his projects, the proposal plan for Roosevely Island Housing Competition raised the most interesting issue on the urban form. That is an attempt to translate the concept of an image and its replica architecturally, exploiting the idea of reproducibility for a creation for the urban form. So did the Fiat Lingotto Complex (C.Pelli).

As O.M.Ungers says, "The same elements and components that make up the prototype define the miniaturized copy as well (street, avenue, block, and central park). The replica symbolizes the reality, in which it discovers structures and forms, and which it mirrors symbolically, allusively or allegorically."

Similarly, Rob Krier proposed an envelop of the buildings and open space network, and he left architectural design of individual buildings to some architects so that he might get more variety than he designs by himself. He presented one guideline of project, and according to this, those architects elaborated the dialogue between the context and themselves.
On the contrary, as for Lucian Kroll, his attitude to the variety resulted in establishing the rule of the user participation design.

He expressed directly the process of consent between architects and clients. He synthesises various clients' desires into a certain equilibrium within the several alternatives of vocabulary. Les Vignes Blanches is a simulation of the forming the urban form in the middle age.
South Amboy New Town (T. Schumacher) 1967
Manhattan Water Front. West 14th St. (A. McDonald) 1973 / Boston Plan (F. Koetter & S. Kim) 1978
Proposal for Les Halles (S. Peterson & B. Littenberg) 1980
Project for Parc de la Villette (L.Krier) 1976
Proposal for Les Halles (L.Krier) 1980
Fiat Lingotto Complex (C. Pelli) 1983 / Phoenix Municipal Government Center Proposal Plan (A. Isozaki) 1985
Project for the Tiergarten Museum / Student Hostel
(O.M. Ungers) 1964
Project for Group Housing at Mrburg (O.M. Ungers)
Project for the Development of Welfare Island (O.M. Ungers)
1975
Housing Project at Old South Friedrichstadt (R. Krier)
Les Vignes Blances (L. Kroll) 1976
Proposal for Suburban Center at Minneapolis (D. Agrest & M. Gandelsonas) 1979 / Wonder Land (D. Walker) 1982
Proposal for Parc de la Villette (OMA)/(B. Tschumi) 1983
"As any city consists of many fragments, the unity of the whole is no longer our primary topic. Against the background of the fragmentation of the contemporary city we focus on the activity and identity of single places and the way in which they can be added together to formulate a notion of urbanity. The connection and articulation of heterogeneous parts in the formation of larger ensembles is an attempt to create contemporary identities and redefine the character of these urban places. If the term scenario can be understood as the assemblage of solitary and serial visions into an architectural formation that will produce and support the desired program and projections of use, then our intention is to create appropriate scenarios for urban life in the twentieth century." (Tomaso Zanoni)

A city as a pretext for an architecture is even regarded as a rhetorical system which often plays a role of calling a certain architectural language into existence.

As far as an architecture exists within a city, it is inevitable for architectural space to be influenced by the city as a context. This is not only true of the symbiosis relationship from the point of view of urban form and social activity, but also true of the issues on ecriture in the context from the point of view of design as linguistic process.
Chapter Four

Economy of Symbols

Marilyn Monroe Diptych. Andy Warhol
Here and There and Everywhere

Listen to the radio,
Don't you remember,
We build this city,
We build this city on Rock'n Roll.

by The Starship

Although innovations of such new traffic systems as car, highway, subway, and elevator have had considerably strong influence on the urban form for the past hundred years, innovations of "photography" and "information system" like telephone, radio, TV, computer, and so on have had little impact on the urban form at a glance.

However, those innovations have gradually intruded our experiences of a city, and have had tangible impact on the way how to have a look at a place and occasion in a city.

Those innovations will have some possibility to change our notion and attitude to a city.

It is said that we have cognitive process, as I reviewed in chapter one, which structures information we receive from the environment into linear orderings or spatial images.

Orientation in place and occasion is a framework of cognition of the environment.
As Christian Norberg-Schulz said, "Our interests in place have existential roots. These stem from a need to grasp at vital relationship in our environment, to bring meaning and order into a world of events and actions".

Owing to our cognitive process, even if we are surrounded by innumerable signs in the environment, we can manage to orient ourselves and formulate profile lines of places in the environment.

In this interaction of ourselves and the environment, visual communication plays a main and important role, according to the relationship of "figure" and "ground" from Gestalt psychological point of view.

When we experience a city, that is, actual three dimensional urban space, or place, we are in the series of "existing view" and "emerging view" just like listening to the music.

The present that we experience is something continuous, and is always changing according to the "contents" of places. We cannot grasp at the image of whole city at a time as we cannot pass two ways at the same time.

It takes a lot of time for us to figure out a little of the structure and profile of the city by walking around again and again and again.
I think that whether the past experiences affect the present experiences or not is dependent on individual's structure of linear orderings and spatial images of Gestalt in memory.

"Leibniz was aware of time is intrinsic to events. The field of place gives birth to time. This happens only when there is contrast with an experimental memory." said Seigo Matsuoka, who was one of the committee members of the exhibition of "MA" which was held in Paris.

In other words, generally speaking, we have no way other than to memorize the relationship of parts and whole in order to grasp at "time" from existential point of view.

Accordingly, the image of the city seems to be related to the city in the memories, which is composed of the segmented scenes of the city. (linear orderings and spatial images). It is true that we live in the actual world from subjective point of view. However I think we live not in the physical and mathematical world, but in the mental world which is related to sensations and memories.

It is difficult to grasp at those so called images of the city. They seem to be an illusion. They are too phenomenological to get hold of.

However, these kind of internal scenes are very much important for the designers and city planners because these
The contour determines the image.
are "deforme" through filters of our conscience (analogue and digital), in other words, transformed unconsciously and processed in our memories.

These filtered scenes are, somehow, characterized or "epigenetic", and considerably structured, and these processed city becomes as it were a "parole" against a "langue", according to F. de Saussure, who proposed that "langue" is a collective system within which the individual speaks "parole", and "Langue" is the unconscious reality that structures specs.

As I reviewed in chapter one, our system of knowledge has been structured by naming objects in front of us and categorizing them. We succeed to the most of the knowledge of the past, and through our experiences we construct our own system.

Probably we owe all to "simulator" which has been formulated through innumerable trials and errors of the ancestors. When we compare our experiences with scientific theory, in fact, this means that we compare our experiences with accumulation of our ancestors experiences for thousands of years.

We are living in the system of objects (Le système des objets). The relationship of ourselves and objects is translated to events in our consciences, and the system of
objects is an accumulation of our individual memories for a long time. The image of the city may be one part of this system of objects.

Recently our visual experiences of the city have been influenced by another types of transmittance of information of the city. In these days we have various ways to have a look at the city and to experience the city through mass media which are related to commercial advertisements except for traditional way, that is, the way that Gordon Cullen stressed in his book titled "Townscape".

It has been more than twenty years since "legibility" of a city was discussed, and many articles on the city invisible were written. In this chapter, I would like to discuss the importance of the notion, "Here and There" in the "text" of the city as well as in the "place" of the city.

How many ways do we have to become familiar with a city? Let us suppose that you plan to go to a city on your vacation. The first thing to do is to get a map of the city, a guide book and picture book of the city like "Over Boston". Guide book shows you a topographical and topological profile of the city in terms of the configuration of the streets, and positions of the famous places such as parks, museums, historical monuments and buildings, theaters, restaurants, shopping malls and so on.
You have surely a lot of expectations from this source of "information" of the city. So, for example, in the case of Downtown Boston, you have already known the names of "Copley Place", "Copley Square", "Boylston Street", and "John Hancock Bldg", and so on, at the same time, it could be easy for you to imagine the topological relationship of lines as streets and points as buildings and places.

When you imagine the name of "Copley Place", if you associate this word with some information like that there are many famous butiques like "Gucci", restrants, book store-like "Rizzoli" and Bakery like "Au Bon Pan", and some other shops along the inner atrium and mall, and this commercial complex has two hotels; "Marriott" and "Westin" and so on. If so, I may safely say that you have already read the guidebook a lot, and you have already been familiar with this place by various signs from this kind of "text".

Our experience of a city has already given by these signs, in a sense, through the media before we walk around the city for the first time.

How about the situations in Tokyo? I have lived in Tokyo since I was a child, and I think that I am familiar with a part of the Downtown Tokyo which is so called "neighborhood", in mathematical term, of my favorite districts along my commuting route.
When I have to go to a new place other than my territory mentioned above, I have to open the map of Tokyo as if I was a sight-seer from abroad in order to reconfirm the position of the place and the routes to the place (rail road, bus route, and subway and walkway).

At the same time, I would like to open some "Town Magazines" such as "Pia", "Angle" and "City Road". These magazines are very popular with younger generations, especially with college students in Tokyo and its suburbs.

Through these magazines, I come to find new unexpected fascinating places, shops, and restaurants even within my familiar part of Tokyo.

These magazines are a sort of accumulation of information of various activities that have occurred, occur, and will occur in Tokyo. These are composed of, for example, nine categories; movies, dramas, music (concerts), new disques, FM programs, arts, events, lectures, and new books.

Also, these are in a form of "écriture" of the city as well as Yellowpage, as M. Butore said, and in other words, these are in a form of exchange of information of the activities in the near past, the present, and the near future.
In any period in the past, I think, there were various ways to spread and exchange information of events in a city by word of mouths, posters, newspapers, and some other media. However, what is amazing is the fact that this kind of edited information of events which occurred, occurs, and will occur is published every week.

According to M. Butore, among books, the book which we read from cover to cover is an exception, and the most important and essential books to us are those of reference, for example, like dictionaries, and encyclopedias. "These kind of publications, in a sense, represent our twentieth century, and without Yellowpages, any country cannot exist at all in the world." said M. Butore.

Readers of these town information magazines seem to be, on the one hand, those who search for their favorite movies, dramas, events, coffee shops, boutiques, restaurants, streets, and districts in the city, on the other hand those who like to listen to the music played by "walkman" of cassette and FM and prefer to enjoy themselves in isolated time in their rooms, in their cars, or on the street.

Therefore the described city by these media is for those who prefer to walk around the city rather than go through the city as usual by car.
"Pia", "City Road" and "Angle" will satisfy our desires to identify ourselves with the Downtown Tokyo to some extent. The readers of these magazines are those who would like to have something anti-usual in the city, and they construct their city in minds through these magazines which are composed of the names of movies, dramas, musics, records, FM programs, exhibitions of arts and so on, that is, catalogues of signs of various activities in the city.

In addition to weekly issues, there are some special issues which are very popular as well. For example, "Angle special issues" are as follows.

* Angle special issue, whole catalogue of coffee houses around main subway stations in Tokyo.

* Angle special issue, whole catalogue of coffee houses along main boulevards in Downtown Tokyo.

* Angle special issue, recommendable restaurants in Downtown Tokyo.

* Angle special issue, map of nice cycling course, promenades, museums, libraries, events, and so on. ...etc.

Through these magazines, you find new nice places and activities sometimes within your territory, and sometimes outside your territory, and you probably feel like exploring around these new districts.
In this way, these catalogues produce new desires of walking around new places for readers, at the same time these themselves are consumed by readers in order to make up for their yearnings to see new movies, dramas, places, and so on.

For the readers, it is impossible to approach to the Downtown Tokyo without these kind of media. These volumes of the catalogue of signs make it possible to see Tokyo as a city. However, in this "city", information about everyday life is not included. This "city" which is constructed in terms of this kind of information seems to be focused on the "desire" to see, listen, eat, drink, and walk and dance, in other words, this seems to be edited as a catalogue for an agglomeration of these desires.

In a sense, Downtown Tokyo as a city has already become a system of objects (J. Baudrillard), because various activities are described and categorized into nine headlines, through these magazines from the semiological point of view.

To become familiar with new place within or outside your territory, you had better walk through that place, or district. In other words, this means to "personalize", as Baudrillard says, the signs of the place, which resulted from abstraction, which seems to be apart from the reality.
There is some question if reference to tremendous amount of information from this kind of catalogue is separated from the performance of personalizing these signs in the actual place in the city, or not.

As we can do little in spite of our desires to do many things in a day, or as we cannot go through two ways at a time our passages are traced in line. In the similar way, we can use few of these innumerable signs when we walk around the places in the Downtown Tokyo so as to fill the interaction ourselves and solid three dimensional urban space with our desires and memories. The rest of them are left as an accumulative yearnings which we have never satisfied yet, or as a compensation for our desires to identify ourselves with the many places in the city.

On second thoughts, as Arata Isozaki once said, "The more precise the map is, the less we can read the structure of the city." , as for editors, these magazines resulted from their another enthusiastic desires to describe vividly the part of the city, like Aoyama, Roppongi, Shibuya, and Shinjuku, by means of illustration maps and catalogues, through their eyes and their "lived spaces" and also to inform the "atomosphere" of these districts as much as possible, which we cannot get through the precise maps.
As Thomas Hobbs says, "From Desires, ariseth the Thought of some means we have seen produce the like of that which we aim at." So we construct a fiction about the future based upon prior agreement between antecedents and consequences that we remember from nature.

"Signs involve both temporal and spatial exchange. Signs exchange, by reversing, the ordinary pattern of past, present, and future. Because signs are always involved with expectant usage. Desire enjoins the future to become actual via the magic of signs. If signs reverse temporality by making the future seem to come before the present means, then in addition they exchange characteristics spatiality."

( James H. Bunn )
Topographical and Topological

Paladodoxically speaking, some projects designed by Leon Krier, Rob Krier, and others which reflect the desire of legibility for the highly densed urban space imply somehow medieval cities, however they are dependent on the post industrial society with the highly sophisticated information system now.

They start with parts, not with the city as a whole. They start with the basic conception of "here and there" and the combination of "existing experience" and "emerging experience".

Someone criticizes that to deal with the city by means of the segmented parts means to give up an approach to the city as a whole.

On the contrary, I think that we cannot see the city as a whole without agglomerating the segmented memories of our limited experiences of parts of the city. (see. Leibnitz)

This turns our interests into another question if each person has one's own vision on the city as a whole which are completely different from each other or not.

If we have a premise that the whole is an illusion, in other words, something on the assumption, we can take a new turn of the problem: the relationship of parts and a whole.
By means of maps, we have recorded the tremendous amount of the relationships of parts and whole, or the relationships of the sense of "here and there" by means of the two-dimensional signs since ancient time.

The desires to describe a city as a whole by drawings reveal that people had already had a necessity to grasp at the city as a whole not only by their visual experiences but also these two dimensional signs, or models.

As we developed the art of measurement, we came to have more accurate maps, and at the same time, we had already had the desires to take a look at the city from the bird's eye view. We find that a number of axonometric maps were made in the Renaissance period.

What I would like to refer to this point is that we seemed to have preferred the axonometric maps to two-dimensional street-block maps, because of the richness of the texture of the city on the axonometric maps, and that many of these maps were drawn not from the existing hill-top points around the city but from the imaginal points of the view in the sky.

This point is completely different from that of the perspective drawings which were also developed in fifteenth and sixteenth century. In perspective drawings, the way how
Turin / Palmanova from Betelli. 1599
Genova / Venice from Bertelli. 1599
everything drawn on the two dimensional planes is seen as regulated by the position of the viewer. Whether we are able to have an unbroken vista or not is dependent on the condition if there is some visual obstacles in front of us or not.

However, in axonometric drawings, we have aquired so called objective view point apart from the ground, in which we can have a look at any point on the ground in the same distance and at the same angle.

This point of view is very much similar to that of physics and mathematics. Schrödinger says, "That a moderately satisfying picture of the world has only been reached at the high price of taking ourselves out of the picture, stepping back into the role of a non-concerend observer."

As Alberto Perez-Gomez says, "Cartesian philosophy and the new science of Galileo postulated the initial split between the perceptual and conceptual spheres of knowledge. Afterward, western science and philosophy concentrated its attention on truth rather than on reality.

During the seventeenth century, however the necessary correspondance between the ideas of the subject and the reality of the object was guaranteed by a benevolent God who gad created the universe on the basis of geometrical laws. Scientists and philosophers built vast conceptual systems
based on a mechanocanistic logic of causes and effects that explained the phenomena of nature. But these systems were always closed and concerned ultimately with final causes."

When we have to deal with terribly complicated and interrelated objects, we, at first, imagine the whole on the assumption (see abductional reasoning), and in order to approach to that whole, we try to wrap up the series of our limited and segmented experiences of the parts of the objects in the environment, or in the urban space.

As far as we are on the ground, and are surrounded by some objects, all we can see at a time is completely limited, because of the distance between ourselves and objects, the height of our viewpoints, the geometrical characteristics of objects, and reflectivity of the surface of objects, and lighting condition of objects.

That is also dependent on how much we get the information of the objects from the point of view of visual communication process.

Even if the amount of the information of surroundings increases, our basic ability and characteristics of body is limited and unchanged, we have to keep the same way how to recognize the city through visual experience in a conventional sense. (see chapter one).
Melancholy and Mystery of a Street. G. de Chilico / New York Interpreted V: The Bridge. J. Stella
However, we have been entering into the tremendously informationized environment which enable us to have various visual and auditory experiences, by newspaper, magazine, photograph, TV program, cassette recorder, video recorder, movie, and computer graphics, at the same time by driving car, taking rail way, subway, air plain, and space ship.

These innovations have gradually had an impact on the transformation of our spatial images and linear orderings from the environment, in other words, these have influenced our notion of "proximity", "path", and "district", and sense of "here and there" and "existing experience and emerging experience".

As the various media have been developed, Media have forced us to be away from the sense of "owned body", Media have divided our lived space into parts technologically, and transformed the articulation and the synthesis of the lived space and their meanings.

In this sense, We should think that precise map or geographical figure is one formulation of the abstracted re-interpretations of the environment by means of the media.

We should decode the topological organization of the environment in accordance with the characteristics of the technological media as a distributive system of various messages of objects and activities in the environment.
Transformation by Media,

"Does anybody really know what time it is?"

In the course of time, thanks to their inevitability in which every activity in our mind should be digitalized by the computer language (code), various studies in the fields of computer science, linguistics, computer programming, and artificial intelligence have revealed that our recognition, decision making, and even designing process of architectural and urban space are regarded as linguistic process.

As the photography had great impact on the art in the late nineteenth century (the emergence of the impressionism), this media have been transformed our notion of the space, in parallel with the the development in the philosophical problems of "system of the objects".

Once Manfred Tafuri criticised the use of the pictures for the criticism of architectural history in his book "Theory and History of Architecture".

"How can photography lend itself to a critical interpretation? As it offers us fixed and isolated images of a whole that it is defined as a process (architecture or city), it becomes obvious that its main characteristic is the elimination of the temporal succession of images."
"The photographic sequence that reproduces the physical movement of the observer in an architecture, will assume a naturalistic and descriptive value, certainly very useful but not very suitable to a critical narrative. One of the specific instruments for the critical use of photography is, then, the accentuation of representational discontinuity. The suspension of the movement and of the single image from the spatial-temporal continuity of the organism, can be used to focus aspects such as articulation, organicity, disaggregation, properto isolated spaces and linguistic elements; in such a case the pausing of camera on the single element takes the character of a 'reductio ad absurdum'."

( Manfred Tafuri )

However, when we find that his essays are also composed of his interpretations on the theory and history of architecture, at the same time, according to previous reviews in this thesis, we come to think that there is little difference between memories of actual experiences and experience from the visual materials.

As Bernard Tschumi says, "As opposed to the plans, maps, or axonometrics normally used in architectural notation, the perspectival description of existing buildings is concomitant with their photographic records: the photograph can then act as the origin of the architectural image. The perspectival image is no longer a mode of three dimensional
Manhattan Transcripts (Bernard Tschumi)
We experience the urban space as if we looked at the sequential pictures of the streets.

"Photographs of events (as opposed to photographs of buildings): photographs' internal logic suggests that it can function in varied ways. It first acts as a metaphor for the architectural program, by referring to events or to people. Second, it can be read independently, for these photographs all possess their own autonomy, independent of drawings juxtaposed to them. Third, the events' allegorical content can powerfully disturb the neutral logic of the game's successive moves, introducing a purely subjective reading. Finally, it can be deconstructed and reorganised the idea of hybrid activities. The temporality of the Transcripts inevitably suggests the analogy of film. Beyond a common twentieth century sensibility, both share a frame-by-frame technique, the isolation of frozen bits of action. In both, spaces are not only composed but also developed from shot to shot so that the final meaning of each shot depends on its context." (B. Tschumi)

We found photograph and documentation an inventive catalogue of new narrative and editing device as the Superstudio did in 1970's
Where I am? when I read an article or novel, or watch TV program, in other words, when I am in an illusional world from the point of view of sense of "here and there".

When we read a novel, we are surrounded by a certain sphere, or we enter into the imaginary world, and we feel the space that the author constructed by his imagination through his text. When we have a dream, or even if we are awaken, our conscience leave our body, we are probably in similar condition.

In a novel, drama is composed of specific incidents, except for daily routine details, and they are disjunctive, and they are held in a topological places. This illusional space is supported and constructed by our imaginations which are inspired by the text and evoked by our past experiences.

While reading a novel, we experience the linear orderings of places, conversations, confessions, and descriptions as its drama advances. In the course of reading a text, we have the sense of "here and there" in the inner space in our mind, and we move through this illusional world according to the sequential trace of our imagination and the text.

It is true that everytime we are in the sequence of existing experience and emerging experience, however, this means that the past, present and future may be active in our mind.
As Bernard Tschumi says, "All sequences are cumulative. Their "frames" derive significance from juxtaposition. They establish memory, of the preceding frame, the course of events. To experience and to follow an architectural sequence is to reflect upon events in order to place them into successive wholes."

"The present is the fringe of memory tinged with expectation." (A.N. Whitehead)

We should note "the difference between the representation of the city and the city as representation", and at the same time we should take into consideration the difference between the perception of the city by our senses and the reinterpretation of the city in our imagination.

According to J. Baudrillard, in order to be something to be consumed, the object should become a sign. He means "simulation" by the phenomena in which the sign separates itself from the reality and also means "simulacres" by the results from the simulation.

J. Baudrillard means simulation by the generation of unreal and unoriginal substance in terms of the model. The model is ahead of the reality and this simulation model gives birth to its reality.
As I reviewed in chapter one and three, a city is regarded as one form of the representations of our "episteme", and we may safely regard the city as a linguistic process from the point of view of interpreting the city and designing architectural and urban space.

The structure of urban space has been in close relationship to the denotation and elaboration of this linguistic process.

At least in the Renaissance period, the city might be a place of memory and reading the city was making up the fictitious cosmos (cosmology) by our imagination, if so, as it were city as a whole has never existed as something visible.

As far as the cosmology is concerned, we have lost this kind of relationship to the city for a long time.

However, I think that even now we cannot approach to the city as a whole without taking part in, as one of the players, an imaginary or fictitious structure of the city as a text through accumulating the segmented memories of the experiences of the parts of the city.

We are living by consuming the message from the media, in other words, by consuming the reinterpreted and reconstructed world by the signs of media.
Epilogue
For the past one hundred years, what had impact on the city seem to be the innovation of elevator and the motorixation. Both of them are in relation to the circulation and the communication.

The former promoted the development of city form in perpendicular direction, and the latter expanded the development of city form in lateral direction.

As tele-communication system have been improving, our life style have gradually changed and will continue changing. However, I think that this phenomena had more impact on the transformation of our experience in the city than on the transformation of physical city form.

I think that unless we have drastic change in socio-cultural system, or ecological catastrophe, we will be likely to keep our life style within a certain limited amplitude. Because we like to enjoy walking along streets, experiencing the nature and nice seneary in the nice man-made environment.

We prefer nicer pedestrian space which is comfortable and continuously flat as much as possible, and is opened to the sky as much as possible.

So I imagine that city form in near future is, at least, dependent on the newly-designed buildings which are the main elements that will make up the town scape, or, in other
words, the substance of the city. These are projections of our "current" or "contemporary" aesthetics into the near future city.

Even if we will have such a new traffic system as air cars, or tube ways, I think that we will not be able to use this kind of system in the middle of the "high-density-city". Because we have already learned that we need not go inside the city in so much high speed.

Laissez-faire high speed traffic system in the sky above the city like that of "Jetsons" may invite the risk of accidents in the upper air. So any vehicle will have to go on the ordained course or in the tube.

As long as things will go forward like that, probably we prefer the existing system to that kind of futuristic traffic system from the point of view of present situation. Because we have also already learned that the elevated objects in the air in the city are completely visual obstacles.

However, I think that almost all futuristic city planning proposals are not necessarily in vain. There are some probability in which we will enter into the another ecological catastrophe, for example, new ice age, someday in the near future. And we will have another possibility in which we will meet with the strong shift in socio-cultural
system according to economic or diplomatic catastrophe, or climatic catastrophe, as long as we keep on wasting natural resources (fossil fuels) or fail to recycle the natural resources (uranium).

Therefore I think that we need to study how to constitute a new life style which will be done in the completely controlled man-made environment which will be under the ground, covered with huge dome, or on the orbit of a satellite around the earth, or on the orbit around the moon, and so on.

So we should re-learn the nature again, and promote agriculture and accommodate ourselves to the nature, and at the same time we should study the total artificially controlled man-made environment on the earth and in the space as well.

On that occasion, we will experience another here and there in the different gravitational situation. So this is very much exiting phenomena from the point of view of our lived space.
Bibliography


__________, "Space of Spiritual Archaeology". University of Tokyo, 1979.


Agrest, Dianna and Gandelsonas, Mario. A + U, March, 1980


__________, "City is not a Tree", Architectural Forum, vol 122, April / May, 1965.


Bandini, Micha. 'Typology as a Form of Convention', AA Files vol. 6, AA School, London,  

"For the Critique of the Political Economy of the Sign", Telos Press, St. Louis, 1981.  


Choay, Francoise. "Modern City", George Braziller, NY, 1969


Tschumi, Bernard, "Illustrated Index. Themes from the Manhattan Transcripts", AA Files Vol.4, London.


