Summary and criticism of the book Aesthetics in Architecture

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ABSTRACT

The subject of aesthetics science is (( distinction and comprehension of parameters)) which have a role in recognition of an object or a beautiful or pleasant practical procedure and ((understanding human’s ability)), for inventing the effects which is pleasant aesthetically.) Since there are several discourses regarding architecture, it is placed in both science and art category. Some parameters like economy, stasis and structure physics belong to architecture science and some parameters like beauty belong to architecture art. Scientific parameters which is solvable by mathematical logic are roughly intellectual and quantifiable aspects but aesthetics as depends to three parameters, objectivity(architecture parameter),mentality(addressee) and external circumstances (which has important effect on comprehension procedure) are hardly quantifiable. Because these three parameters are different considering situations, awareneses, experiences and … from one place to another and a person to other. Considering above points, mentioning a perfect and general theory regarding aesthetics is not possible. Yurg Groter in the book “aesthetics in architecture “(March 1987 and translation by Dr. Jahanshah Pakzad and Eng. Abdolreza Homayoon in autumn 1995) tried to clarify the apparent complication of comprehension of architecture procedure by understanding principles and information theory. We decided to provide readers a summary of this book.

INTRODUCTION

Comprehension Principles: The first chapter of the book “Comprehension principles” deals with the way of information and news transfer from the receiver to sender and the effects of external and psychic-social parameters on the state of the messages transfer in 4 sections.

1) Sender: Whatever sends the information or a message.

2) Receiver: The person who receives the information.

Message Transfer: Message transfer maybe done via different ways or in other words the messages can be transferred via different channels.

Fig. 1: Different kinds of news and disturbing parameters in the procedure of information transfer (reference: Aesthetics in architecture)

For more explanation of messages, information or news, it’s mentioned that we need some regulation for comprehension of messages which help to make ((draft)) i.e. we need previous knowledge for comprehension of news. If the news has a high degree of creativity, the knowledge should be more private or the news has a low level of creativity, we can get the purpose of sender by simple previous knowledge.
There are some definitions regarding duration of message transfer and news structure:

1) Multiple news: The news which receive synchronically from different channels. We see, hear during watching a movie or maybe drink a tea and touch the warmth of it but the most of our attention is on moving scenes of movie.

2) Deactive news: The news which we receive but don’t draw our attention. The warmth of tea cup during watching movie.

3) Active news: The news which we want to know more about it. For example watching a movie at a busy place.

4) Informative content of a news: A news isn’t measured by its duration but by its “creativity”. Creativity is a subordinate of lack of possibility.

Abraham Moles presented following formula for this definition.

\[ \text{Creativity} = - \sum_{i=1}^{n} p_i \log_2 p_i \]

M stands for the number of a news components and Pi is its possibility.

It seems that above formula can’t be a perfect version because according to previous section, receiving creativity is different from a person to other and a place to another. In fact, It’s the same effect of external parameters on comprehension procedure which is itself a subordinate of changeable time. In the book of creation of architecture theory by John Lang, with reference to cybernetics theory: The systems with high information content and low energy controls the systems with high energy and low information content.

5) Semantic information: It seems that the semantic information considered as some news which is easily detectable, measurable and logic but the fact is that informatics theory presented this issue a few years ago that we understand some information by our reason and some other by our feelings. Groter considered those who gained by reason as semantic information and the other as aesthetics information.

6) Aesthetics information: These information has totally personal aspects and also are the subordinate of environmental conditions. (Abraham Moles applied this expression for the first time, 1996) But as mentioned above this definition is seen in informatics theory allusively.

Now There is a question: (How a house should be built to give us the most information regarding aesthetics information?) There is no clear and explicit answer but by getting acquainted with receiver characteristics, we can understand what kind of message should be transferred by sender to receiver which is more desirable.

7) The kind of information and memory: As we mentioned at the first, those information and messages can be effective which is both on sender’s memory and also on receiver’s memory.) In fact, Training procedure happens in this way: gradual conformity of two collections of known signs by sender and receiver.

![Fig. 2: Training procedure: gradual conformity of two collections of known signs by sender and receiver (reference: aesthetics in architecture)](reference: aesthetics in architecture)

8) Sabotage in a message: disruptive parameter in message transfer procedure can be a parasite message which caused comprehension error. Generally one of following parameters caused comprehension erros.

A) Seductive information: we sometimes see the necker cube from the beneath and sometimes from the above (double images).

B) Imposing of excess information on our comprehension system: (This happens when our receiving information seems simple despite of internal complication.) like the paintings of Bridget Riley.

C) Lack of emotional instigation in our comprehension system: (seeing mirage in desert which causes comprehensive error is not a kind of instigation weakness but it’s monotony.)

There is a useful section regarding the way of seeing and visual understanding of human and the way of receiving visual messages via two ways atomism and holism has been described in details.

The theory of atomism is as follows: At first some information gather separately and in detail in order to receive the whole image but the theory of Gestalt described that at first the whole image is detected then the details will be distinguished.

The important rules of Gestalt composed of: 1) magnification 2) neighborhood 3)alliance 4) similarity 5) experience.
Generally, Summing up and summarization of information will be performed after receiving data from environment.

Forming ((draft)). So received data are analyzed in brain and (( be learned )). Ulrich neisser (1977) consider the concept of mental draft as the connection of comprehension and more supreme procedures of brain.

![Necker cube](reference: aesthetics in architecture)

**Fig.3:** Necker cube (reference: aesthetics in architecture)

The way of summing up data and their summary depends on other three important parameters which are as follows:
A) The mental state of human at that moment and ambience at the moment of comprehension , like wedding and funeral ceremony.
B) Personal behaviors which is shaped and made from the previous experiences of the person. Awareness and mental state and everything a person learned are consisted of this behavior.
C) Genetic parameter and social-psychic background i.e. the parameters which made neither by learning nor by experience.

**Culture and style:**
It’s mentioned on chapter 2 that the main duty of culture is presentation of mental ideas of a society by objective or architecture shapes.

In fact, every architecture structure shows a part of culture which has a thought behind itself and shows society value and culture. So we can say that architecture is indication of prevailing value system or it can influence the society or vice versa.

Groter consider the culture as the reflection of a social system, in fact according to the ideas of Ernst Kris, he considers replacing new experience as aesthetics dreams and according to Freud’s attitudes replacing a new experience is start of culture. Therefore, he deems Greece culture and Renaissance is the cultural beginning without concentrate on the world civilization center i.e. Egypt, China or far east. We can criticize Groter as he didn’t pay any attention to dead civilizations i.e. Egypt and india which west civilization came from them.

According to definition of semantic and aesthetics data, semantic data of an artwork is in conformity with mental shape to some extent and indicates the art style in this way. But its aesthetics data can be in a way that leaves a chance for us to interpret it by its symbolic contents. The aesthetics data give a personal character to the artwork despite of having a special style ( It changes a work into an artwork).

Namely, if an artwork has much dependence to a style, its digressive data will be increased and it creativity decreased.

Having some extent of creativity does not mean mere disorder and complication: because mere disorder makes the transitional data difficult and creativity recognition to zero. Therefore, there should be balance between complication and related order. Classification regarding order three-step stages has been mentioned in this chapter from Groter’s book. In this manner that systematic order was changing from a simple order to complicate one so that after reaching a saturation period gets back to simple order. In this graph, he deems the greek, romantic and renaissance have a severe order and early Christianity, Gothic in England and baroque have lack of clarity.

Regarding definitions of architecture and culture and prevailing values, for a new style to be accepted the language of its narrator should be comprehensible.

**Aesthetics and beauty:**
After etymology survey of the word “beauty”, Groter has brought the idea of Peter F. Smith who believes three level for aesthetics values.
The word “aesthetics” has been invented by Alexander Blum Garten on 1750 for expressing the concept of preference in fine arts.

Ruskin stated a definition for aesthetics duty: “This is the duty of aesthetics that shows to you (if you weren’t already aware) which the taste and color of a peach is beautiful and pleasant (if it’s provable and you are curious to know it) that why it’s in this way.

(Generally speaking, nowadays two kinds of book are attracted by the readers of serious subjects: First, the books which tends to contents and be written for a special part of knowledge and second those which deals with structure namely, the method which order the events.)

Regarding Groter Book, this is respected well. At first, he deal with contents by brief definitions of aesthetics then deal with structure by connecting reader and the changes of beauty concept during the time and then get back to contents and make strong connection between these two category.

In this part of chapter he deal with changes of beauty concept during time and provided some definitions regarding beauty from Plato, Vitruvius, Pollin, Augustinus, Leon Battista Alberti, Andre Palladio, kant, Hegel, Bernardo Bolzano, Gustav Fechner, Frank Loidright, Mondrain, Kasimir Malewitsch.

The effective parameters which affects on the feeling of beauty:
1) Knowing historic backgrounds and existence reasons of a work.
2) As the most old constructions have a symbol of durability respond to one of human feeling which is desire to eternity. So they have a good effect on beauty feeling procedure.
3) The character pattern of each person has direct influence on his/her aesthetics feelings.
4) The environment and prevailing culture influence on our aesthetics feelings.

Groter brought a formula from George David Bierkohoof, American mathematician who compiled a method for beauty calculation on 1933.

\[
M = \frac{\text{order}}{\text{chaos}}
\]

In fact maybe we can say the relation of these two effect on beauty but it won’t determine the exact amount of aesthetics.

Because as previous statements the amount of complication is different for various people, because informative layer and draft of different persons is different for decoding of an artwork. So we can never define an exact quantity for aesthetics.

Environment and place:

Groter started the Chapter 4 by a sentence from Norberg Sholtz:

“(The most important issue in architecture design is understanding of its ((message)).

Certainly the nomad tombs in Sina desert in Egypt have different concept with Inka civilization residential in Pizak peru.

Fig. 4: Three levels of aesthetics values. (Reference: aesthetics in architecture)

Fig. 5: Inka civilization residential in Pizak peru. (reference: aesthetics in architecture)
Fig. 6: nomad tombs in Sina desert, Egypt. (reference: aesthetics in architecture).

(Place), is room or a part of atmosphere which gain a specific identity by the parameter in it. (room) can be moved but the place replacing is not possible. Every object located in a place and in need of room.

Place doesn’t need to be occupied and also be determined by a specific object. For determining a place even environmental reciprocity is enough.

Therefore, existence characteristic of building is that changes a room to a place and it means put virtual content of environment into practice (Christian Norberg-Schulz). This saying of schulz is a kind of rejection for modern architecture which design the buildings without dependence to special place. So we can understand that each architecture work is made regarding to its special place and after being built narrate a context which is placed within. Egypt pyramids speaks of Nile and plain earth. Acropolis speaks of Greek mountain regions or Athens mountain need to acropolis. The ground topographic state determined the building position in Greece. The architecture of ancient Rome was not dependent to environment so much. (except some cases like campidoglio hills in Rome) so that the hegemonism thought of these empire in the world shows the diplomacy of that day.

Fig. 7: space order in ancient Egypt (reference: aesthetics in architecture).

Fig. 8: space order in ancient Greek (reference: aesthetics in architecture)

Therefore, the buildings and architecture works has been built with relation to environment and this relation is regarded as human viewpoint to environment and generally to the nature. God is considered in close connection to unity with nature in the east of Asia, in western communities after Christ, the connection between God and Christians and nature in the way of trinity.
Groter stated the connection between building and environment in three types of homogeneity, conflict or reciprocity, he deems the connection of building and earth line in 4 types and the connection of interior of building with exterior environment to 3 periods.

He believes that in connection of building and environment, in the case of homogeneity, building accepts the environment and in the case of conflict separate itself from environment intentionally and in the case of reciprocity it not only separate itself from the environment but also confront it and in connection of building and earth line, the building maybe located beneath the earth like caves or on the earth floor like Georges Pompidou center or on the throne like Sydney opera of Yorn Etzen or located on standing columns like acropolis and villas away.
Architecture was a kind of sculpture in connection of building interior with exterior environment in the first period the interior environment hasn’t been paid any attention. At the second period, the interior or exterior environment have only been considered.

During the first period, Groter didn’t pay any attention to Egypt pyramids which are completely withdrawn constructions and during the third period to the east Asia constructions. We may correct the Groter’s sentence in this way: Simplified history of room ((in Europe)) can be summarized in three periods!

Area:

There is a definition for room in the chapter 5: Room is the collection of the connections between the objects and it should not necessarily be surrounded, therefore it’s not compulsory that it always should have an extreme. So there is a connection between room and supervisor and (the position of supervisor’s viewpoint define the room). There is 3 axis in mathematical in which all points are in the same importance but in our comprehensive mind we have a central point which is the same point of supervisor. The mathematical atmosphere is fixed but comprehensive mind is subordinate of supervisor standing state and in the most cases the comprehensive distance among two points is not equal to place distance and mathematic. The size of mathematic atmosphere despite of comprehensive atmosphere is not the subordinate of time or day or night. In comprehensive atmosphere, day atmosphere is in priority for comprehension and night atmosphere has not depth and direction. There is no difference between public and private atmosphere in mathematic atmosphere but in comprehensive atmosphere there is public and private atmosphere and depends to everyone’s culture. Edward Hall in the book “hidden dimension” in the chapter 10 defines the different distances in human. The atmosphere between the objects is not empty but it’s a between atmosphere which help us for object comprehension.
Fig. 16: Channel as between atmosphere (Venice-Italy) (reference: internet)

Now there is a question. Where will between atmosphere finish and where empty will start? If we omit three indicator parameters of between atmosphere: (size, conformity and component shape) the remain atmosphere will be empty. Nothing will be clear at empty atmosphere. Pure monotony.

Fig. 17: Three indicator parameters of between atmosphere: size, conformity and component shape. (reference: aesthetics in architecture)

There is even empty atmosphere between monotonous residential building. For example the design of Le Corbusier modern buildings in Paris failed to make a monotonous accumulation due to severe conflict with old regional pattern of ile de la cite.

Fig. 18: Le Corbusier,1925 France, The modern building in the old center of Paris beside river seine. (reference: contemporaneous urbanism from the first origins to Athens charter)

Tension can be made by every small element. Atmosphere defining elements matter so much on atmosphere comprehension by human.(in general, atmosphere quality is subordinate of its composed elements and the connection of these elements with each other.) more precise 1) elements’ dimension 2) the position of same elements to each other 3) kinds of elements 4) inaugurals are the important parameters in atmosphere quality.

The connection of atmosphere with each other divided into four parts by Groter.
1) Atmosphere in atmosphere like some of Charles more designs
2) Interpenetrative or concurrent atmospheres like churches cross shapes
3) Contiguous atmospheres which are neighbors.
4) Atmospheres which their relations is gained by a third atmosphere.
Atmospheres better to be designed flexible and multi-purpose. But don’t forget that in these atmospheres orientation in atmosphere is an indicator parameter i.e. flexibility should be in a way that won’t lead to disturbance.
Shape or appearance:

Groter talks about ((form and shape (Gestalt) and can present the difference between these two words (which use instead of each other).

Both two words of shape (gestalt) and form are apparent manifestation of an object but not equal. It can be deduced by Louis Can’ saying that form deals with inseparable components and nature is an object and shows the shape by design. Gestalt or shape consists of visible totality, surrounded by boundaries, compound of components (Brockhaus encyclopedia, Vol.7, page 37)

Forms deem the culture and fast change of form language for any reason means that the culture becomes poorer.

Forms divided into two groups ((regular and irregular )) forms. Regular forms have ((structure)). Comprehension of shape started by structure detection that can be synchronism axis or same length of sides or angles or focuses. Structure can be more important than all lines composing shape in comprehension procedure.

Groter presented regular forms:
1) horizontal and vertical 2) line 3) plain surface 4) bent and curve surface 5) circle 6) elliptical 7) sphere 8) square 9) rectangle 10) triangle and pyramid 11) hexagon and octagon

And mentions the reason of using these forms in different samples of architecture: It’s the duty of architect that shape the mental models which made on the basis of function and stated some examples of important architecture structures.

During design procedure, the product is not composed of a shape but several forms with the same or unequal values which can be opposed to each other and make tension but it should be reminded that these forms should be in the harmonious figure in order to forms diversity doesn’t make excess creativity and harmful tension.

Harmony:

The classic definition of harmony is the same order among constituent components of an phenomena (Brockhaus encyclopedia) and ((balance)) is the basis of beauty.

There is balance in our comprehensive system which all forces in our field of vision neutralize each other. Two parameters play an important role in this regard 1) comprehensive weight 2) forces direction.

Every artwork should make tension besides having balance which is the basis of beauty. But excess tension is tedious because the creativity becomes so high that can’t be decoded and as gestalt rules, in our minds each motive combination is interpreted in a way that achieved structure is simple.

Harmony in art comprehension is not apart from vision balance and conformity is an indicator for harmony.

There is balance wherever there is synchronism but there isn’t necessarily synchronism wherever there is balance. If some elements changes due to size or form or place position in a repeated synchronism, the hierarchy will be made.

Fig. 19: Visual parameters indicate hierarchy: size, form, place position. (reference: aesthetics in architecture)

Hierarchy is one of creating parameters of harmony. It in deed harmonize balance and tension.

Time and path:

There is so many positive effects in comprehension of architecture since exploration of perspective in renaissance and koobism and photorism in architecture. We encounter with a procedure dependant to time in comprehension of koobism and photorism but how?

The kind of visitor’s insight is different in koobism and photorism comprehensions. Visitor moves in koobism and see the different times of subject but in photorism the visitor is fixed and subject moves. The subject move is comprehensive i.e. transferred to visitor by lines. Visitor needs move and time in koobism like any other artwork.

Two strong architecture which make strong dynamism, 1) path 2) axis and direction.

If this dynamism, path and axis doesn’t have any rhythm, it will certainly tedious. ((rhythm )) is an important device for measuring the path. Like day and night rhythm in dynamic path of life.
Light and color:
The chapter starts with a statement of Louis Can: There is tendency of hidden being in silence. Being for presenting something. There is tendency of hidden being in the light. Being for creating something.

We know that light is a part of truth and life nature and the first condition for every kind of vision comprehension. The extent of natural or artificial light of environment has practical and also symbolic importance. Practical parameters related to eye characteristics and conformity procedures.

Groter works on the role of light in Egypt architecture, Greek temples, bizans architecture and gothic style scientifically and symbolic and deem the vision comprehension or receiving image message in four parameters:
1) Time: when the message reaches to retina.
2) The place of observed object
3) light extent
4) color

Groter stated three possibility for natural lighting of interior areas:
1) The light only comes inside.
2) The outside view should be available beside light.
3) Light comes inside as well as view from each direction.

The lights shines from sun and moon are not the only lights we can see things by them but re-shine light of objects help us to see them.

We can obtain required light for forming an architecture elements by ((changing light extent or change suitable materials)).

Darkness and shadow make depth. Shadow provide us some data from the light source and also position of objects. The relation of object and shadow depends on four elements:
1) Light source place
2) Shadow size
3) Object size
4) The position of background with object shadow

The experiences show that form has more important role to color in position detection in area and objects recognition.

Tadao Ando deem the role of shadow as light supplement. Light doesn’t shine alone. There should be darkness so that light can shine. Darkness which increase light sparkle is a part of light.

Chapter 10: Signs

Each message particularly vision message exchange with signs. Semiotic symptomatology deals with sign and symptoms and semantic analysis deals with relation of a sign and its content.

Sign deals with presenting contents and meaning but have immediate effects.

Symbols presents a semantic contents in form language but more over immediate effects.

(( People are merchants of symbols)) (Langer 1953). Symbols are one of connection ways. Because symbols are in relation with previous experiences.

Part and whole:

The right correlation of these two category makes beauty.

In ancient age Vitruvius says : ((Whole should be beautiful, beneficial and permanent.))

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<tr>
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<td>joy</td>
<td>Presentation</td>
<td>Shape appearance</td>
<td>Function, shelter,security</td>
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<td>resistance</td>
<td>strength</td>
<td>skills</td>
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Whole depends to three elements:
1) Components numbers
2) Kind of components
3) Relation of components with each other in the shape of an ordering system

And their connection:
1) Connection of kind of components and their number.
2) Connection of number of components and ordering system.
3) Connection of kind of components and ordering system.

Joining components reach us to a whole. There is special connections between whole and components in a construction project; details indicates the same contents that whole should be. The way of being beside of each other is different in various periods. Tatami in japan, pre-cutten stones in Takht-e-jamshid, cut stones in Egypt pyramids.
REFERENCES