TOWARDS THE BUILT ENVIRONMENT LINGUISTICS

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Thesis submitted to the University of Nottingham for the degree of Doctor of Philosophy

June 2008

Abstracts:

In the history of the built environments theoretical development, the architecture, city and landscape have all been considered as language. Differing from subjects and scholars, various built environment languages have existed, durably or ephemerally. Some stressed the structure of languages and extracted the built environment dictionaries; some emphasized the linguistic characteristics of language and compiled the built environment grammar. They are all great achievements in built environment theory; however, since the connatural difference between the tangible buildings and the intangible spoken & written languages, this concept – the built environment languages – are still esoteric and intricate for the public.

Facing this problem, this research intends to probe an integrated built environment language and to uncover the essence and mechanism of the built environment language. Undoubtedly, a comprehensive literature review is the foundation before any further development. Through careful study about both the structural linguistics – semiology system and previous built environment language studies, it is conspicuous that a universal built environment linguistics framework can be established referring to the knowledge of structural linguistics and semiology. Hereinto, firstly the built environment can be looked as a ‘langage’ that contains the corresponding ‘langue’ and ‘parole’, then other binary linguistic concepts, including the “signifier & signified”, “isologic sign & non-isologic sign”, “syntagmatic axis & systematic axis” and

"synchronic aspect & diachronic aspect", can be introduced into this new field. Therefore, based on this framework, not only can the essence and mechanism of built environment linguistics be explained, but also all the previous studies about the languages of architecture, urban planning and landscape can be seamlessly embedded inside. After the theoretical analysis, a discreetly designed simulation test is prepared to verify the practicability of built environment linguistics. Its results can then provide strong support from pragmatic dimension.

Finally, the foundation of a theory of universal built environment linguistics can be achieved, but to be same as all other scientific researches, what is completed here is just a beginning rather than an end.

Key Words:

Built Environment, Structural Linguistics, Semiology, Langage, Langue, Parole

Acknowledgement:

12th, May, 2008! Four days after passing my VIVA, is an ordinary day I write down these words, is an extraordinary moment for my motherland – China.

A couple of hours ago, ten thousands miles away, a monstrous catastrophe befell on Sichuan, where never suffered a doom in thousands years, where has been highly reputed as the land of heaven, where is becoming an alive purgatory.

Earthquake! Thousands upon thousands compatriots lost their lives, millions upon millions lost their homes…

I command tears to stay in where they are… they obey but blur my eyes…

I ponder… do I need to blame the ferocity of Gods? Do I need to redefine the value of life? As a young scholar, I choose the latter.

After three and half years hardworking, I finally crown myself with the laurels of academy. However, what is my responsibility as a person with the trencher cap of PhD? What is my responsibility as a man?

I found that the questions are hard. But I believe that the answer is about contribution, about help, about love, and about living and working for others rather than me.

Suddenly, I feel so proud to be an architect, because my skill is useful to build niceness for human-being rather than killing and destroying, because I can very well serve others by my knowledge. For this, I want to say: “thank you!”

Thank you, my supervisors – Prof. Tim Heath and Dr. Hichem Trache, examiners – Dr. Tim Martin and Dr. Darren Deane, colleagues and friends! You pointed out the right course when I lost my direction in the ocean of learning!

Thank you, my parents, especially wife – Lei Yanhui! You encourage me to conquer difficulties when I lost my confidence!

Thank you, my motherland! You blend the spirit of China in my blood, and teach me to be a responsible Chinese citizen!

Mom, My heart always synchronously beats with you!

致谢

五月十二，2008！答辩后第四天，一个我写下这些文字的普通日子，一个对我的祖国 ---- 中国而言极不寻常的时刻。

几小时之前，上万公里之外，一场空前惨痛的浩劫降临在四川，那里千年来从未遭受过厄运，那里山清水秀被誉为天府之国，那里现在却正在变成生命的炼狱。

地震！数万同胞失去了生命，百万乡亲失去了家园……

我命令泪水呆在原地不动…… 它们服从了，但模糊了我的眼帘……

我沉思默想…… 是应该声讨上天的残忍？还是应该反思生命的价值？作为一名年轻的学者，我选择了后者。

寒窗三年，我终于赢得了梦寐以求的学术桂冠。但是，这辉煌的博士学位帽又象征着什么样的责任？而那作为一个人的责任又是什么？

这些问题不好回答，但是我相信答案就蕴涵在贡献，帮助，爱心之间，就蕴涵在舍己为人之中。

突然间，我为自己是一名建筑师而自豪，因为我能凭我所能去为人们建设美好生活而不是杀戮与毁灭，因为我能依我所学去全心全意为人们服务。为此，我要说：“谢谢!”

谢谢您，我的导师，考官, 同事及朋友们！当我在无涯学海中迷航的时候是您们为我指明了方向！

谢谢您，我的父母亲, 特别是我的妻子 ---- 类延辉！当我丧失信心的时候是您们鼓励我去克服困难险阻。

谢谢您，我的祖国！是您把中国的精神注入我的血脉，是您将我培养成为一名负责任的中国公民。

母亲！我的心永远同步与您的脉搏！

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Prologue

The Lake of Tanganyika, silently wriggles along the Great Rift Valley, mist-covered water extending to the end of those remote mountains. Under her sparkling azure waves, many kinds of fishes and other aquatics species live there. However down to the darkness of the bottom, a kind of little fish quietly creates the great miracles. They are the male cichlid, which inexhaustibly build the small sand dunes granule by granule. Each one has its own construction site, very tiny but elaborately tended. Each dune is a nest prepared for their bride. For attracting the females' favours, they must compete with each other and try their best to build the dunes bigger and higher. Holding this simple but steady aim, the male cichlids work hard without any rest, one grain by one grain, using their fragile mouths to raise their greatest pyramids and to resist the continuous demolishing force of the undercurrent. Probably the little fish is not advanced enough to communicate by verbal language, yet all the males' wishes have been endowed into the small dunes. By the sand architecture, they want to manifest that they are strong enough to provide their offspring with the best genes; they want to show that they are skilful enough to build the solidest "house" to protect their family against the enemies. In return the female cichlids also can read the information correctly from these dunes. In millions and thousands years, they undoubtedly always choose the outstanding grooms and the top bridal chambers. Maybe a biologist would explain this phenomenon as an inherent instinct passing down in their DNA, however, I would like

to say that it is the power of the building, which even in a basic form of the life can be ubiquitously noticed out. It is the power of crystallizing the information in constructions, the power of communication in architecture, and the power of built language.

1 Introduction

1.1 General Introduction of the Built Environment Language Study

Victor Hugo said:

- *"Architecture has recorded the great ideas of the human race. Not only every religious symbol, but every human thought has its page in that vast book."*

Johann Wolfgang von Goethe described:

- *"I call architecture frozen music."*

These two well-known visions have been summarized as aphorisms to inspire the fresh architectural students' interest usually in the first Introduction Lecture of Universities. However the marble epic and solid music express not only the charm of the art of architecture, but also the communication between built environment and people. This is a latent power and subtle influence on us, which we unconsciously digest in our blood. As such, the communication phenomenon finally became a subject that attracted many scholars, and subsequently called the built environment as language.

As an academic term, "language" scientifically indicates a very broad sense, which means *"a systematic means of communicating ideas or feelings by the use of*

conventionalized signs, sounds, gestures, or marks having understood meanings."[1] However, as a general word understood by most of the public, it only means a very narrow sense – the spoken & written language, such as English, Chinese and French, etc. This difference between the scopes of cognitions actually intrigues an important contradiction between built environment, such as architecture, cities and landscape, etc. and the concept of language.

This contradiction can be elaborated from two aspects:

- The first one is focused on the broad sense of language. For explaining the communicational function of built environment, architectural academia naturally introduced the concept of "language" into their academic field – built environment, and combines them together. Typically, the terms – "language of architecture", "language of city" or "language of landscape", etc., have become increasingly popular in built environment theories recently. Not only many scholars worked on this, but also lots of architects apply these terms to explain their personalities in design. However, some questions will naturally occur. They are that: how can the built environment work as a mean of communication and what is commonness between built environment and the broad sense of language? On the contrary, how much can those former studies about language in built environment prove this commonness? Certainly, their answers are

[1] Language, from Merriam-Webster's Collegiate Dictionary, [online]. Available at: http://www.britannica.com/dictionary?va=language&query=language [22 May 2008]

hidden behind a systematic literature review of former studies.

- The second one is about the narrow sense. If to say that the first aspect is about academic scope, then the second aspect is concentrated on the public level. The analysis of English grammar indicate that these “language of architecture”, “language of city” and “language of landscape” mean extensions of language study as well as implying that the built environment should suit the demands of language. However, obviously, the tangible built environment elements are physically different with the intellective spoken & written language, and then this difference intrigues a consideration about the universality of the built environment language. On the one hand, intuitionally, no matter how simple or complex buildings are, they are all self-existent things, seemingly out of our control and beyond our minds. Although people experience and engage with them every day, the messages of buildings are still difficult for everyone to express freely and perceive clearly. On the other hand, the spoken & written languages applied by people can be liberally handled. All advanced spoken & written languages of the world can be listened to, spoken, read and written as common communicational method among the general public. This significant difference indeed baffles the popularization and practice of the “language of architecture”, “language of city” and “language of landscape”, and also explains why the general public always feels difficult to comprehend this concept.

Logically, to study the language of built environment, these questions cannot be ignored.

To solve those problems about the first aspect is more direct. The questions about “how can the built environment work as a mean of communication and what is commonness between the built environment and the broad sense of language” straight point to an academic scope called semiology, which theoretically is the inheritor of the structuralism and brother of deconstruction. Indeed, these three scopes cannot be fully separated but must be considered an integrated system. A group of scholars worked on this system and devoted themselves into the communication phenomena in the world of objective signs rather than only limited in spoken & written language. They called the study of communication phenomenon as “linguistics”, and Ferdinand de. Saussure founded a firm term-system by focusing on the spoken & written language but nominated a possible future development in the world of sign as semiology. Based on his contribution, Claude Lévi-Strauss developed the idea of linguistics into anthropology scope, and then, by the efforts of Roman Jakobson and Louis Hjelmslev, linguistic phenomenon was more and more applied to explain a potential communication phenomenon of tangible signs. Finally, Roland Barthes roundly established the theory of semiology. He interpreted the significant phenomenon of signs by analyzing on a series of tangible sign systems – the garment system, car system, food system and furniture system, etc. On this point, architecture, cities, landscape and other built environment elements can be studied as the built environment system by semiology. Almost at the same period of Barthes’ study, Jacques Derrida developed his famous theory of deconstruction and further explored a possibility of numerous

different personal ideas in reading. It endowed the study on information receiving process with more flexibility and freedom.[2] By all these studies, it is clear that, without too much difference with other sign systems like garment, car or furniture, the built environment, as a tangible and objective system, can be explained by semiology as a mean of communication and is one branch of the broad sense of language.

Although all these studies mentioned before belong to a non-built environment scope, they have given a positive support of architecture, cities and landscape, etc. working as language. On this pint, the first question of the first aspect has been answered. Based on this development, what needs to be noticed is the second question – "how much can those former studies about language in built environment prove this commonness". The answer can be detected from the review of studies on language of architecture, language of urban and language of landscape design. Plenty of books and articles have been published in this field. Some of them are really landmarks. John Summerson's study on Classical Architectural Language intensively summed up the complex meanings contained and delivered by classical Orders. This is a quasi-semiological study about the authorized meanings of signs of column proportions and decorations. Contrarily, in modern architecture scope, Charles Jencks put forward the term – architectural signs and applied the semiological terms – signifier and signified – to interpret the mechanism of architectural signification of post-modernism, late-modernism and neo-modernism genres. Geoffrey Broadbent summed up the "deep

[2] Detailed Review can be found at Chapter: 2.2

structure" of architecture by comparing with the structure of sentence, which involved in the scope of structural linguistics. To be similar with Broadbent's work, Kevin Lynch extracted five "deep structure" of city but he didn't show much relationship with the structural linguistics. What is more, Christopher Alexander organized a structure of 253 basic patterns to everyone who wants to build something and encourage the users to develop the structure by themselves. However, he didn't indicate that the interior structure of patterns is referring to an aspiration from structuralism. Language study in landscape design scope can be represented by Anne Whiston Spirn. Through study the components and grammar of landscape, her work deeply involved in considering the elements of landscape as signs, which can be written and read. Another big group is focused on the study of potential geometric regulations behind traditional buildings, which is named as form grammar or shape grammar. Contributions of this group are practices of officially unscrambling the secrete meanings of existing built environment signs.[3] By arranging these studies together, it is not difficult to discover that almost all the language studies about built environment closely relates with the scope of structural linguistics – semiology system. Even some didn't clearly show their references, a potential relationship still can be detected. This point has elaborated the second question of the first aspect.

Mixing the answers of those two questions together, it is clear that the first aspect of the contradiction can be released through careful literature review on two academic

[3] Detailed Review can be found at Chapter: 2.3

systems – the structural linguistics & semiology system and the language studies about built environment. By this point, architectural theorists realized an amalgamation between the concepts of “architecture, urban and landscape” and “language”. They dug the potential interior structure, emphasized the signification process and make the built environment one branch of the vast system of sign language.

After solving the first aspect of the contradiction, the second aspect, which is focused on the narrow sense of language, should be considered. However, the clue of answer is not as clarified as the former.

The second aspect focuses on the physical difference between spoken & written language and built environment, and the universality of the built environment language. If to say that the physical difference can be counteracted by the given answer of the first aspect, the universality of using the language of built environment is still under veil. The basic function of any kinds of language is communication and they should be exercisable to every member within a certain application zone. If a language only refers to a finite range, it will be applied by limited members, such as disable sign language only suiting to disable people or flag language only for using between ships. Contrarily, if a language refers to a huge amount people, it must be universal and open to every one, such as the spoke & written language we use daily. Clearly, the built environment surrounds us and effects us every day. It is the biggest and most complicated artificial product of human-being, and changes the surface of our planet. For this reason, the

language of built environment should be universal and open to all members of society, and everyone should be able to use it. The answer of this question also points to the review in the former studies of languages of built environment. However, this time, the answer is negative:

- Firstly, many theorists only or mainly focused on the professional level rather than general public, which includes the studies about classical Orders, Jencks' languages of post-modernism, late-modernism and neo-modernism, Broadbent's theory of deep structure, Lynch's five elements, Spirn's language of landscape and form grammar group, etc. They emphasized how the languages are professionally practiced and officially understood by architects, planners and gardeners but missed how they can be generally used by the public. Contrarily, only few of them encouraged the public involvement in building process, such as Alexander's Patterns, but still didn't talk more about how people perceive or understand the buildings. So if comparing with the spoken & written language, the public was almost excluded from the languages of built environment, partly on the level of creating and fully on the level of perceiving.
- Secondly, although in their own research scopes – architecture design, urban planning or landscape design – these scholars have tried their best to extract the most recapitulative elements to form the framework of their language studies, they only can be assessed as limited universal in certain research fields rather than a real universality covering the whole built environment scope.

Summing up these two sides together, it is believable that the existing studies of built

environment languages are not universal.

So, focusing on the unsolved aspect and relied on the solved aspect of the relationship between built environment and language. The questions of this thesis will be put forward here and solved in the later chapters:

- What is the **universal essence** of the “language of architecture”, “language of city” and “language of landscape”?
- What are their **universal mechanisms of operation**?
- and can they be mastered **by everyone**?

Shrouded behind these abstract theoretical concepts there is theoretical system. Successively, an effort to uncover the secret of built environment language will be undertaken with a congruent research methodology.

1.2 Research Methodology

A series of research methods are applied in the study according to the characteristics of this topic. First and foremost, achieving a theoretical framework requires theoretical deduction. Successively, treating the built environment as a form of pragmatic language also requires corresponding practical tests. Since this topic is an interdisciplinary topic between the scopes of built environment and structural linguistics – semiology, psychological tests applied in the linguistics field can be introduced here with proper modifications. These two research techniques set up the most fundamental frame of the research methodology of this thesis. Below them, more details can be subdivided.

Within the extent of the theoretical deduction, three sub-level techniques – literature review, research gap confirmation and theory renovation – must be emphasized. They are all the popular research methods adapting to every research subject, however focusing on the study of the language of built environment, some particular and subtle rectifications are essential.

Regarding to the literature review – because of the interdisciplinary attribute of this topic – it reasonably should include both the built environment scope and the structural linguistics – semiology scope. Hereinto, according to the former introduction, the academic scope of structural linguistics – semiology must be firstly reviewed to elaborate that the built environment can be applied to communicate among people as a

significant system. Then based on this, the literature review will be shifted to the various former studies of built environment language, which interprets the close relationship between them and the structural linguistics – semiology scope. Both of these reviews will be organized in clarified categories covering the most important key issues with a meticulous tactic. Based on them, an academic gap will be extracted to intrigue the main theoretical development of this research.

In both stages of the research gap confirmation and theoretical development, meticulous and precise ratiocination is the basic rule to follow. Simply, the gap must be formed only by the contents of the reviewed theories without any exaggeration and tentative speculation. And every new development must be strongly supported by both real facts and previous literature. Finally, just like weaving a subtle carpet, in which every line strictly interlaces with others, indispensably and interdependently, either between the old and new theories or among the frame within the renewal, all the elements will logically connect with each other without any single isolated point. They together will establish a scrupulous and rigorous theoretical framework.

Within the part of the test, because the aim is to prove the practicability of built environment linguistics, which predictably is, just like other languages, how to use it for real communication, some valuable experience in linguistic study can be applied here. Based on this point, a simulation test is carefully designed to imitate the real situation of utilizing built environment language in daily life. Following the systematic

analysis on data, an implemented support for the theoretical framework can be accomplished.

Combined these study techniques make up a complete systematic methodology applied within this research. However, meticulously carrying them out from beginning to end is undoubtedly crucial for drawing a convincing conclusion after all.

1.3 Summary

Based on the contents above, the topic will be roundly unfolded in the following chapters. According to the research methodology, the study will step-by-step establish depth of consideration. Additionally, in the development process, a four-part-layout can be applied to form the entire frame of the thesis.

The Part One is Background Study. It contains two main parts – the literature review about structural linguistics – semiology academic system and the literature review about former language studies on built environment scope. These two scopes will be well united together to not only found a firm foundation of further development but also uncover the gap.

The Part Two is Built Environment Linguistics. It is the main body of this thesis. The key questions:

- What is the **universal essence** of the "language of architecture", "language of city" and "language of landscape"?
- What are their **universal mechanisms of operation**?
- and can they be mastered **by everyone**?

will be answered by careful theoretical deduction. This part will be composed of three chapters. Within the first one, a series of key semiological terms – langage, langue and parole will be introduced into the built environment scope to set up an integrated

framework of built environment langage. Then the second one will focuses on study of signification operation. Finally, based on both, by the end of this part an intact theoretical framework of universal built environment linguistics and will be configured.

The Part Three is the Simulation Test. By a careful design, this test will be able to simulate all key attributes of the built environment linguistics completed in the former part and will be operated in six groups. All the tests result will be arranged together and analyzed in statistics. This part will provide practical support for the theory of built environment linguistics.

Finally, Part Four is the Conclusion and Further Work. Followed by an objective estimation about the theoretical value and the practical value of built environment theory, all the former contents will be summarized in concise words. Furthermore, the future development of this topic also will be foreseen.

PART ONE
BACKGROUND STUDY

2 Literature Review and Confirmation of Gap in Research

As highlighted in the introduction, this thesis is focusing on trying to establish a universal built environment linguistics used by everyone. For this aim, previous works must be systematically studied.

First and foremost, the direct support of looking architecture, cities or landscape as language – mean of communication – can be found out from an academic scope of studying objective signs as language, which is known as the theoretical system of structural linguistics and its derivatives. Successively, based on this, a further review about the various existing studies of built environment language can be launched to correspond with the former one and narrow down the scope into built environment (1.1). Based on both of them, the gap in research will be confirmed and ignites the further development.

However prior to all of them, one theory from the non-built environment professionals should be mentioned firstly. It is so penetrating and prophetic that the silhouettes of many later academic theories can be found out from within. It has been quoted in the Introduction above. It comes from Victor Hugo.

2.1 Victor Hugo's Architectural Language

In his well known masterpiece – *"The Hunchback of Notre-Dame"*, Hugo (1802 – 1885) unexpectedly inserted a piece of academic argument about the architectural language into the tragic story between Quasimodo and La Esmeralda.

Hugo's original goal was to elucidate that printing technique will substitute for architecture to record human's intelligence. In his words, **"***This will kill That. The Book will kill the Edifice."*[4] However, for proving this dictum, Hugo first needed to clarify that architecture was playing the very same role that books were also playing. Books are the material carriers of the written languages, so apparently he looked at architecture also as a kind of "written" language. Based on this point, a series of deductions and exemplifications were launched to support his idea.

Hugo's architectural language theory was explained step by step. Firstly, he interpreted that the reason of endowing architecture with meanings was to keep the information for a long time without changes and loss. He believed that before the popularization of the highly efficient printing technology, architecture was the best means for every ancient tradition to record their civilizations. Though the information recorded on the buildings was not as clear as those kept within the words, *"When the legends of primitive races became so numerous, and their reciting was so confused that the stories were about to*

[4] Hugo, Victor. The Hunchback of Notre-Dame, (London, Penguin Books Ltd, 1965), p. 174.

be lost, people began to transcribe these memories in the most visible, the most lasting, and at the same time the most natural medium. Every tradition was sealed under a monument."[5]

Following this precondition, Hugo gave a series of interpretations. From the simplest alphabet to the most meaningful books, he believed that a gradual development of the level of complexity in spoken & written language was corresponding with the historical development of the level of complexity of architecture. This means that the more complicated a building is, the more meaning is imparted on it. Therefore, according to him, *"from the beginning of things to the fifteenth century of the Christian era inclusive"*, architecture not only *"was the great book of the human race, man's principal means of expressing the various stages of his development, physical and mental,"*[6] but also experienced a developing procedure from the alphabet architecture to the word architecture, and then to the sentence architecture, and finally to the architectural books.

- The alphabet architecture was the prehistoric remains of stone structures. Hugo mentioned them as the beginning of writing architecture. *"A stone was planted upright to be a letter and each letter became a hieroglyph. And on every hieroglyph there rested a group of ideas, like the capital of a column."* He clearly elucidated the character of these original structures and also emphasized

[5] Ibid, p.175.
[6] Ibid, p.175.

their wide-spread nature: *"Thus primitive races of the same period "wrote" all over the world. One finds the "upright stone" of the Celts in Siberia and on the pampas of American."*[7]

- Then it was the syllables and words of architecture. *"By superimposing stone upon stone"* Hugo considered that humans were making primitive words. Within the connection between granites, there were verbs that *"tried various combinations"*, and nouns that formed the entities of buildings. Based on these elements, people obtained the capability of writing the sentence by building. By Hugo's description, it is that *"sometimes, on a vast beach they joined these stone words and wrote a sentence. The immense pile of Karnak is by itself a complete formula."*[8]
- The architectural books were created on the foundation of all these accumulations. Hugo believed that firstly *"The traditions had given birth to symbols, under which they disappeared like the trunk of a tree under its foliage."* Additionally, the symbols also give birth to the meanings, which are increasingly filled with multiplied humanity and become more and more intricate. Eventually, *"the first simple stones no longer sufficed to contain them; they overflowed on all sides; scarcely could one decipher the original traditions, which, like the stones, simple and naked, had been planted in the soil. The rock symbols had a need to expand into a structure"*[9] – the entire, complex architecture.

[7] Ibid, p.175.
[8] Ibid, pp.175, 176.
[9] Ibid, p.176.

Finally, *"the pillar, which is a letter; the arch, which is a syllable; the pyramid, which is a word,"* by this gradual combination, architecture *"set in motion at once by geometric law and by the law of poetry, began to group themselves together, to combine, to amalgamate, to sink, to rise, to stand side by side on the ground, and to pile themselves up to the sky…"*[10] The architectural books became ubiquitous around human's world, and, step by step, they were "compiled" together as a marvellous stone epic after all.

Positively, in Hugo's viewpoint, architecture was great and vast books standing on the ground and opening to everyone. Their every single stone, brick, timber and glass cooperated together to form profuse meanings. However as a great writer with his acute insight, he also noticed that the interior connotation of the buildings actually comes from more resources besides the architecture per se. That is the environment, which, with his own words, is that *"not only the edifices, but also the location of them revealed the ideas they were to impart"*[11]. This brief sentence is inconspicuous within Hugo's long novel but really uncovers an important principle for studying the language of built environment. Indeed, if architecture "is" book, they should be read under their local context in order to grasp the real essence, just like that the true spirit of a great novel only can be tasted under its given social atmosphere.

[10] Ibid, p.176.
[11] Ibid, p.176.

So, based on the interpretations above, clearly Hugo has established an academic theory about the architectural language in a romantic fiction. It is not clear whether his thoughts have influenced the later development of architectural language studies or semiology studies, but the truth is that his core contents are certainly accorded with the ideas of many later scholars. On the one hand, this plain idea about recording information in architecture and reading from architecture actually mirrors with the core thinking of semiology, on the other hand, his idea of the gradual combinations among the letters, words, sentences and books really corresponds with many built environment language theories.

To sum up, Hugo's architectural language, which purports that *"every idea that rose from the people, every religious law, had its counterpart in monuments; finally every important thought of the human race was recorded in stone"*[12] provides an important theoretical plinth for this thesis, though his original purpose is that *"the book of stone, so solid and so enduring, was about to be supplanted by the paper book, which would become more enduring still."*[13]

[12] Ibid, p.181.
[13] Ibid, p.175.

2.2 Literature Review of Structural Linguistics and Its Derivatives

Hugo looked architecture as book, which can be written down and read and actually represents a mean of communication by non-spoken & written language. In human knowledge deposit, the academic scope working on this phenomenon is the structural linguistics – semiology system. By going through it, the most fundamental question, which, mentioned in the introduction, is the first question in the first aspect of the contradiction between built environment and the concept of language – "how can built environment work as a mean of communication" (1.1) can be theoretically answered.

In retrospect, the development of structural linguistics – semiology includes four main parts – structuralism, structural linguistics, semiology and deconstruction. Interacting with and interdepending on each other, they form a consecutive and evolving process.

2.2.1 Giambattista Vico's *"Poetic Wisdom"*

Probably, one of the earliest attempts to explore structuralism was focused on the pure psychoanalytic level. Hawkes (1984) identifies Giambattista Vico (1668-1744) – a paramount Italian jurist and unhesitating objector of the Cartesians – as the initiator of structuralism.

Vico's *The New Science* published in 1725 suggested a "*poetic wisdom*" that is adapted

to the thinking on the sensatory and illusionary expressions against the "*philosophical wisdom*" that is suited to the intellect on logical and mathematic expressions.[14] Through a series of studies on the formation of myth and primitive society, he argued that the gentile mankind only understood the whole objective world by "*poetic wisdom*" rather than the "*philosophical wisdom*", and correspondingly reconstructed their own world-views in their minds. The exterior forms of those reconstructed world-views were the earliest metaphors, symbols or myths. To Vico's gentile human-being, through the gradual construction of theological explanations, not only was the whole mythical world expanded by composing more new myths to explain more new natural phenomena, but also the interrelationships among the mythical gods were modified ceaselessly to look for a wonderful arrangement corresponding to the diverse natural environment. So after thousands and hundreds years, the primitive people created a set of comprehensive system of supernatural power – the society of the gods.

Vico's study was comprehensive and convictive. Since the prehistoric tribes in both Eastern and Western civilizations kept the belief in the pantheism, which means the doctrine identifying the universe and its phenomena with numerous different Deities, without the scientific explanation, they so attributed all the forces of nature – the rain, wind, bolt, thunder, hail, snow, tide, flood, hurricane, volcano, and so on, to the gods. Furthermore, with the development of the social class among the gentile people, they

[14] Vico, Giambattista. Translated by Thomas Goddard Bergin and Max Harold Fisch, *The New Science of Giambattista Vico, Unabridged Translation of the Third Edition* (1744) with the Addition of "Practic of the New Science" (Ithaca and London, Cornell University Press, 1984), [779]

also endowed the gods' world with the classes carefully. In western world it can be represented by the Hellenic mythical gods on the Mount Olympus, which was ruled by Zeus. But in eastern world the celestial heaven of Chinese gods – Ling Xiao Palace, which was reined by Yu Huang Emperor, is a good example. The structures of gods' societies could be the first practice of the "*poetic wisdom*" and the first structural thinking of human-being.

However, Vico didn't only limit his study to the scope of illusionary myth but approached the whole secular real world as well. His "*poetic wisdom*" is a broad-sense concept, which can be used to explain all the phenomena of human society rather than only the myth and theology. Clearly, primitive people established both the structures of gods' heaven and their own villages and cities. Since they applied the "*poetic wisdom*" to the celestial world, so in the same way of lacking the philosophical knowledge, they would found their mundane world by the "*poetic wisdom*", too. Vico gave those composing processes a panoramic interpretation by a series of wonderful instances. His argument stood on that, all by his "*poetic wisdom*", people *"...by means of their natural theology (or metaphysics) imagined the gods; by means of their logic they invented languages; by morals, created heroes; by economics, founded families, and by politics, cities; by their physics, established the beginnings of things as all divine; by the particular physics of man, in a certain sense created themselves; by their cosmography, fashioned for themselves a universe entirely of gods; by astronomy, carried the planets and constellations from earth to heaven; by chronology, gave a beginning to times; and*

by geography the Greeks, for example, described the [whole] world within their own Greece".[15] It is clear that, finally, an integrated view of the world could be established ambiguously but systematically, with nature being transferred into myths recognized as the truth of the world and society being elucidated by metaphors identified as the eternal principles. In such a system, mankind and the natural world constituted an interactive balance, transformably and regulatably despite little understanding of the real scientific principles of nature.

Vico never mentioned the concept of 'structuralism' in his works, but in the last quarter of the 20th century, some structuralists perceived a deeper relationship between Vico's thinking and structuralism. For instance, Terence Hawkes' book – *Structuralism and Semiotics*, made natural connections between 'poetic wisdom' and structuralism. He explained that with poetic wisdom *"...man constructs the myths, the social institutions, virtually the whole world as he perceives it, and in so doing he constructs himself. This making process involves the continual creation of recognizable and repeated forms which we can now term a process of structuring."*[16] Hawkes also suggests that: "*The*

[15] Ibid, [367]

[16] Hawkes, Terence. *Structuralism and Semiotics,* (London, Methuen & Co. Ltd, 1997), p.14.

Note: Terence Hawkes' *Structuralism and Semiotics* is one of many books introducing the development of structuralism, structural linguistics and semiology academic system. His book is organized by both the time axis and key scholars. In this thesis, the literature review of the structural linguistics – semiology part will refer to Hawkes' organization for a legible thread; however, the original references of all important scholars mentioned in the following chapters will be respectively reviewed.

Apart from Hawks' work, here another two books introducing the structural linguistics – semiology system will be recommended as further references:

Edited by Robert E. Innis, *Semiotics, An Introductory Reader*, (London, Hutchinson, 1986); this book is organized in line with the key scholars one by one;

Edited by Mark Gottdiener, Karin Boklund – Lagopoulou, Alexandros Ph. Lagopoulos, Semiotics, (Volumes I, II, III,

gift of sapienza poetica (poetic wisdom) could thus be said to be the gift of structuralism." [17] It can be claimed, therefore, that either accidentally or consequentially Vico's "*poetic wisdom*", brought forth a new means to observe the world, in which a clear viewpoint of structuralism was latent. In this process, the people would become the structural people and the world would be known as a structural world.

2.2.2 Jean Piaget's Definition of Structuralism

After Vico, the development of 'structuralism' gathered pace yet there was no comprehensive definition until French philosopher – Jean Piaget (1896 – 1980) published his significant book – *Structuralism* in 1968. In Piaget's times, structuralism has been developed into a huge and complex system approaching various academic fields. Noticeably, this condition formed the ineluctable obstacle as well as providing the big accumulation of theories and exemplifications for the discovery of a common definition on structuralism. Briefly, Piaget studied structure as a dynamic system rather than a stable thing, which means that a being with structure should be in action forever. Based on this fundamental idea, he concluded two main points. The first and most important one is about *"transformation"*, which according to Piaget's explanation is that *"...we may say that a structure is a system of transformations. Inasmuch as it is a system and not a mere collection of elements and their properties, these*

IV), (London, SAGE Publications, 2003); this set of books are organized by the main disciplines, and relative scholars are introduced within every discipline.

[17] Ibid, p.15.

transformations involve laws: the structure is preserved or enriched by the interplay of its transformation laws, which never yield results external to the system nor employ elements that are external to it. In short, the notion of structure is comprised of three key ideas: the idea of wholeness, the idea of transformation, and the idea of self-regulation." [18] In this trinity definition, wholeness confirms the scope, transformation the inner-dynamics, and self-regulation the homeostasis. These three points are the crucial elements of the definition of structuralism. Subsequently, Piaget created the concept of *"formalization"* as the second important point, which implied that every structure, even the most complex one, contains its own inner regulation and can be studied and deduced to some formula sooner or later. This viewpoint is clarified in his following argument: *"The discovery of structure may, either immediately or at a much later stage, give rise to formalization… Formalization sometimes proceeds by direct translation into logical or mathematical equations, sometimes passes through the intermediate stage of constructing a cybernetic model, the level of formalization depending upon the choice of the theoretician."*[19] On this aspect he refused the agnosticism in the whole structure scope.

Concisely to say, either the *"transformation"* or the *"formalization"* elucidated that structure is a ceaselessly developing system controlled by its own understandable mechanisms. In the philosophy of dialectic materialism, it is the most fundamental and ubiquitous rule of the universe. Actually on some level, Piaget's definition can be

[18] Piaget, Jean. Translated and edited by Chaninah Maschler, *Structuralism* (London, Routledge and Kegan Paul Ltd. 1971), p.5.
[19] Ibid, p.5.

applied to explain everything anyway because the structuralism has been implemented in multifarious academic fields. Of course Vico's vision of a gentile mankind cannot be excluded. The structural poetic wisdom world positively followed Piaget's structuralism definition, which could be another evidence to locate Vico's thinking in structuralism field.

2.2.3 Hegel's Logic and Permanent Structure

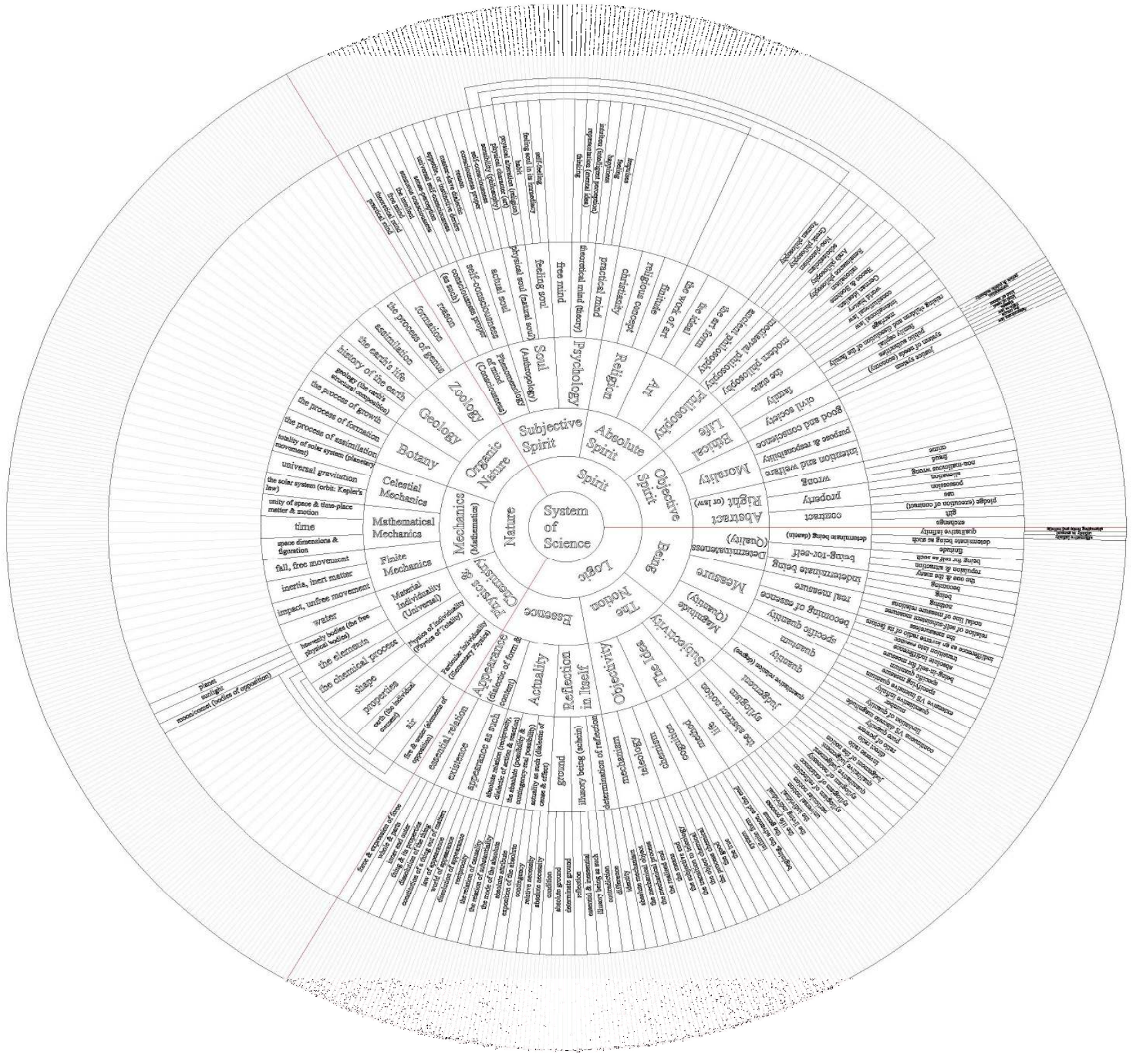
Between Vico and Piaget, groups of academics pushed this research field forward ceaselessly. Influenced by metaphysics, the earlier structuralists' ultimate destination was to seek the permanent or coverall structures including all attributes of human societies and civilizations.

Originating from Aristotle, as one of the most famous branches of philosophy, metaphysics is concerned with explaining the nature of the universe and the metaphysicians never stop to study the soul of the "being", which was logically related with all the phenomena and everything of the world. During its long history, it has developed various branches, such as existence, objecthood, property, space, time, causality and possibility, etc. Hereinto, none of these branches can be excluded from the three central parts of metaphysics – ontology, theology and universal science. All three parts more or less embody the characteristics of structure indeed. However, since ontology was concentrated on *"what categories of things are in the world and what*

relations these things bear to one another."[20], the attribute of structuralism is particularly noticeable and clear. From the introduction above, it is apparent that metaphysics holds two characteristics – the all-inclusive study and the structuralism thought.

Although many metaphysicians worked hard in various academic scopes for seeking out the supreme regulations and principles of everything, probably Georg Wilhelm Friedrich Hegel is one of the most shining stars. Hegel's (1770 – 1831) contribution to the development of the metaphysics is his study on "Logic". In 1811, 1812 and 1816, one of the paramount masterpieces in philosophical history – the *Science of Logic* was published in succession. With a very tangible structural framework, Hegel established his metaphysical theory – an embracive structure of the world. If going through the whole Logic frame, a clear trisection structure can be traced out from beginning to the end. Hegel first divided the "System of Science" into three branches – "Logic", "Spirit" and "Nature". Consequentially followed in a sub-level, the "Logic" was divided into another three smaller branches – "Being, the Notion and Essence", the "Spirit" to the "Subjective Spirit, Objective Spirit and Absolute Spirit", and the "Nature" to the "Physics & Chemistry, Mechanics (mathematics) and Organic Nature". Then following the secondary level, other four lower levels were developed in a similar pace. Level by level, Hegel organized them all into one huge system.[21] So to say, from some angle the coverall structure was realized inside. To embody Hegel's structure in a clear graphic

[20] Metaphysics, from Wikipedia, the free encyclopaedia, [online]. Available at: http://en.wikipedia.org/wiki/Metaphysics [12 Feb 2007]
[21] The detail of trisection system is available at: [online]. www.hegel.net [20 Mar. 2007]


System of Science
Logic
Nature
Spirit
Being
The Notion
Essence
Objective Spirit
Absolute Spirit
Subjective Spirit
Abstract Right (or law)
Morality
Ethical Life
Philosophy
Art
Religion
Psychology
Soul (Anthropology)
Phenomenology of mind (Consciousness)
Zoology
Geology
Botany
Organic Nature
Celestial Mechanics
Mathematical Mechanics
Finite Mechanics
Material Individuality (Universal)
Physics of individuality (Physics of Totality)
Particular Individuality (Elementary Physics)
Physics & Chemistry
Mechanics (Mathematics)
Quality
Measure
Subjectivity
Objectivity
The Idea
Reflection in itself
Actuality
Appearance (dialectic of form & content)
Essence
Logic
Being
Determinateness (Quality)
Magnitude (Quantity)
Measure
Subjectivity
Objectivity
The Idea
Reflection in itself
Actuality
Appearance (dialectic of form & content)
Essence
Logic
Being
Abstract Right (or law)
Morality
Ethical Life
Philosophy
Art
Religion
Psychology
Soul (Anthropology)
Phenomenology of mind (Consciousness)
Zoology
Geology
Botany
Organic Nature
Celestial Mechanics
Mathematical Mechanics
Finite Mechanics
Material Individuality (Universal)
Physics of individuality (Physics of Totality)
Particular Individuality (Elementary Physics)
Physics & Chemistry
Mechanics (Mathematics)
Nature
Spirit
Objective Spirit
Absolute Spirit
Subjective Spirit

form, different means can be applied. In this thesis, all of the items were arranged in a series concentric circles chart (Figure: 2-1).

Hegel's structure was a prototype that marked the dramatic efforts of those metaphysicians and seemed to be unimpeachable and comprehensive. However, philosophers still didn't give up looking for more irrefragable permanent structures. Instead of struggling in the objective world, they turned to explore within the subjective scope. At the end of 19th century, some scholars focused their attention on the linguistics and anthropology, which subsequently became two distinctive fields from which so many fundamental concepts of structuralism were derived. Indeed, as Hawkes commented, *"…as we do so, we might remind ourselves that, of all the arts, that involving the use of words remains most closely relate to that aspect of his nature which makes man distinctive: language. And it is not accidental that many of the concepts now central to structuralism were firstly fully developed in connection with the modern study of language: linguistics; and with the modern study of man: anthropology."*[22] The scope of any spheres of academic study could therefore hardly be closer to 'permanent structures' than them.

2.2.4 Structural Linguistics and Structural Anthropology

Crossing the Atlantic, two academic groups independently developing linguistics and anthropology in Europe and America represented the new developments in

[22] Hawkes, Terence. *Structuralism and Semiotics*, op. cit., p.18.

structuralism exploration. In the late 19th century and early 20th century, both groups were well known as the founders of modern linguistics and anthropology study in the old and new continents. In Europe, Ferdinand de Saussure inaugurated the new era of Structural Linguistics and Claude Lévi-Strauss investigated in the field of Structural Anthropology. Successively, Roman Jakobson formed Functional Linguistics at the Prague School, and Louis Hjelmslev put forward Glossematic Linguistics based at the Copenhagen School. However in America, Franz Boas founded the Descriptive Linguistics and Edward Sapire made arduous effort on the establishment of the American Structural Linguistics. After them, groups of scholars continued the explorations and gradually modified those theories. All of these marvellous efforts constituted the principle development of the structuralism in 20th century. In the following sections their works will be introduced compendiously but essentially.

2.2.4.1 Ferdinand de Saussure's Structural Linguistics

One of the most paramount masterpieces on structural linguistics is Ferdinand de Saussure (1857 – 1913), the eminent Swiss professor's *Course in General Linguistics*, which was published in 1915 according to his students' notes and was considered as a compulsory book of language study. Saussure mainly strove for a daily communication phenomenon known as spoken & written language. But in his opinion, 'language' is only one of the two separate parts of people's communication phenomenon, which he called 'Langage'. Saussure described langage as *"...many-sided and heterogeneous; straddling several areas simultaneously – physical, physiological, and psychological –*

it belongs both to the individual and to society…"[23] This concept consists of the *'Langue'* (language), which is the social side of the langage, and the *'Parole'* (speaking), which is the individual side of the langage.

The detail definitions and explanation of langue and parole can be extracted out from several chapters of the *Course in General Linguistics*, which can be summed up to be a series of comparisons.

By Saussure's definitions:

Langue *"is both a social product of the faculty of speech (langage) and a collection of necessary conventions that have been adopted by a social body to permit individuals to exercise that faculty."*

And for parole, Saussure claimed that *"Execution is always individual, and the individual is always its master: I shall call the executive side speaking (parole)."*[24]

Based on the definitions, more characteristics of langue and parole can be studied from following text:

1. *"Langue is not a function of speaker; it is a product that is passively assimilated by the individual."* and *"parole, on the contrary, is an individual act. It is willful and intellectual."*

[23] Saussure, Ferdinand de. Edited by Charles Bally and Albert Sechehaye in Collaboration with Albert Reidlinger, Translated by Wade Baskin, *Course in General Linguistics* (London, Peter Owen Ltd. 1964), p.9.
[24] Ibid, pp.9,13.

2. *"The study of speech (langage) is then twofold: its basic part – having as its object language (langue), which is purely social and independent of the individual – is exclusively psychological; its secondary part – which has as its object the individual side of speech (langage), i.e. speaking,(parole) ... – is psychophysical."*
3. *"Doubtless the two objects are closely connected, each depending on the other: language (langue) is necessary if speaking (parole) is to be intelligible and produce all its effects; but speaking (parole) is necessary for the establishment of language (langue), and historically its actuality always comes first."*
4. *"Finally, speaking (parole) is what cause language (langue) to evolve... language (langue) and speaking (parole) are then interdependent; for former is both the instrument and the product of the latter. But their interdependence does not prevent their being two absolutely distinct things."*[25]

By these definitions and explanation, it is clear that langue should be some concrete things controlled by its inherent rules; and parole should be individual activities to use or produce langue. The former is focused on objective aspect and the latter is focused on subjective aspect. As the first pair of terms introduced by Saussure, in fact, langue and parole play a paramount role in his theory. They construct both foundations of Saussure's linguistics and further development in semiology. Not only have all other terms of Saussure been established above them, but also many key linguists and

[25] Ibid, pp.14,18,19.

semiologists, such as Hjelmslev and Roland Barthes, developed them with new annotations, which will be studied later.

Accompanying with these vital terms – langage, langue and parole, other useful binate concepts were also mentioned and explained in Saussure's book. One is the *Signifier* and *Signified*, which imply a relationship between what we can perceive from external expressions and what we can sense from the internal contents. Charles Jencks introduced them into the study of Postmodernism architecture language as well. Another is *Synchronic Law* and *Diachronic Law*, which imply the short-term stability and the long-term changeability of the langage.

On the foundation of the study of spoken & written langage, Saussure also predicted a possible approach to the broader world of "Sign" in linguistics. His work was also crucial in semiology study, which will be introduced thereinafter.

2.2.4.2 Claude Lévi-Strauss' Structural Anthropology

Despite the preeminence of Saussure's work, it didn't systematically spread to other cultural fields besides linguistics; nevertheless, his followers never gave up explaining diverse human cultures from a structural standpoint. In 1958, the French anthropologist – Claude Lévi-Strauss (1908 –) published his paramount work – *Structural Anthropology*, in which one of the most important contributions – analyzing non-linguistic data by modern linguistic methods was set forth. He believed that the

langage is tightly bound within the cultural phenomena, and asked "…*whether the different aspects of social life (including even art and religion) cannot only be studied by the methods of, and with the help of concepts similar to those employed in linguistics, but also whether they don't constitute phenomena whose inmost is the same as that of language* (langage)."[26] Actually, to Levi-Strauss, all facets of human culture, including marriage, funerals, kinship, hostility, totemic systems, religious cults, etc., are analogous to the structure of langage and can even be studied as *"a kind of language* (langage)*,…a certain type of communication…*"[27] Levi-Strauss was a precursor to the introduction of a structural linguistic view-point into culture. This provided a platform for later structuralists to study every social and cultural facet including the built environment.

2.2.4.3 The Prague School and Functional Linguistics

In 1920s and 1930s the centre of structural linguistics was moved to Eastern Europe, especially in Russia. In the remarkable flourish times of the Russian arts and literature, all sorts of academic circles and active artists, architects enjoyed the thriving period of creation. In architecture and art branch, the Russian Avant-garde designed a series of fascinating architecture and sculptures represented by the Monument to the Third Communist International in 1919 by Vladimir Tatlin and the Soviet Pavilion at the Exposition des Arts Decoratifs in Paris (1924 – 5) by Konstantin Melnikov[28] (Figure:

[26] Hawkes, Terence. *Structuralism and Semiotics*, op. cit., p.33.

[27] Ibid, p.34

[28] Cruickshank, Dan. ed. *Sir Banister Fletcher's A History of Architecture*, Twentieth Edition, op. cit., p.1431.

2-2, 2-3). But in linguistics scope, none could be more noticeable than the Russian Formalism.

Figure: 2-2, Monument to the Third Communist International, USSR;
2-3, Soviet Pavilion, Paris Expo 1937

As a school of literary criticism, Russian Formalism absorbed a group of young but promising linguists and historians, which included Roman Jakobson whom late became one of the most significant academicians of structuralism. In different cities, two major centres were founded by them. One was the Moscow Linguistic Circle established in 1915, whose members were mostly the linguists. One year later another was founded in Saint Petersburg known as the Petrograd Society for the Study of Poetic Language which was comprised by literary historians.

However in the 1930s, because of political reasons both of those academic groups were

suppressed by the government and most of the members have had to flee to other countries. They towards the western evoked the communication and development between the Eastern Europe and Western Europe in linguistics. Thereinto some of them reorganized the academic centre in foreign land. In Prague, these exiled academicians established the famous Prague School in 1928, whose representative was Roman Jakobson (1896 – 1982). Based on Hawkes' annotation, the Prague School was one of the two crucial structural linguistics studies centres after Saussure's death. The other one was the Copenhagen School, which led by the Danish Linguist – Louis Hjelmslev.[29]

Led by Jakobson, the Prague School developed a set of independent theory known as the *"Functional Linguistics"*. A concise summing-up of Victor Erlich quoted by Hawkes is a good commentary of their viewpoint – *"Structuralism was their 'battle cry'. The most characteristic feature of their approach was the combination of the central notion that language was to be seen as an ultimately coherent structure, not as an aggregate of isolated entities, with a recognition and analysis of the variety of 'functions' that it fulfils in society."*[30] About these functions of language, the Prague School has given their detailed explanations. Totally six different functions can be identified within respectively spectacular social contexts. Firstly, the Prague School linguists believed that language can be distinguished to two major functions – the *"Cognitive Function"*, which usually is applied in formal condition and *"is used for the*

[29] Hawkes, Terence. *Structuralism and Semiotics*, op. cit., pp.59-75.
[30] Ibid, p.74.

transmission of information" without ambiguity, and the *"Expressive Function"*, which in contrary *"is seen when language is used to indicate the mood or attitude of the speaker, or the writer"*. It is normally used to compose poem and art to convey complex and multiple meanings. Further more, as Hawkes' summary, *"the conative or injunctive function is involved when it is used to influence the person to whom it is addressed, and there are also phatic and metalingual functions."* Consequently, the last one was the *"poetic or aesthetic function"*, which always exists together with the *"expressive function"*[31]. The structure of these functions can be clarified in the below figure (Figure: 2-4).

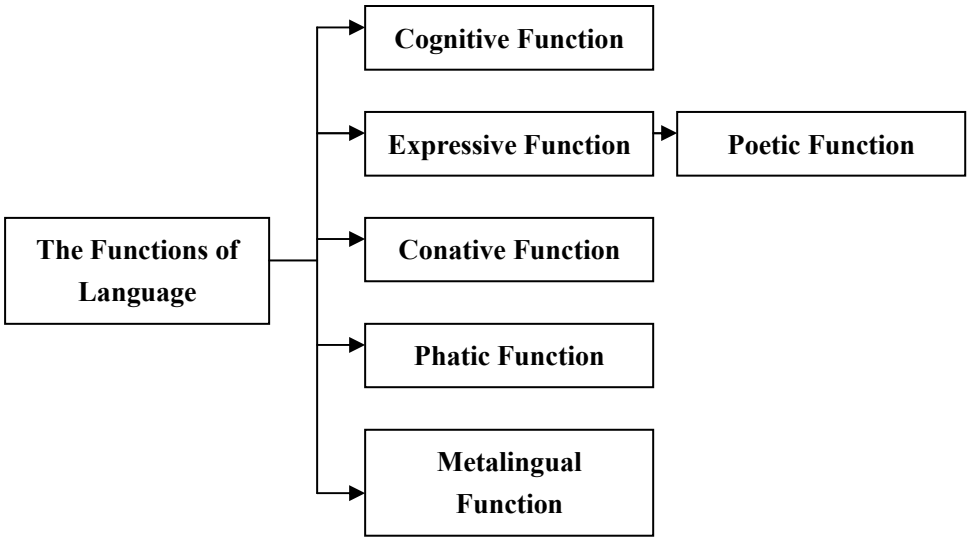


Figure: 2-4, the Functions of Language of the Prague School

The Prague School was disbanded in 1939 just before the outbreak of World War II. Significantly, Jakobson had to go into exile again. This time he moved to USA and settled down in New York, where he met and collaborated with Levi-Strauss at the Ecole Libre Des Hautes Études. In this period, his interest continually focused on the

[31] Ibid, pp.74,75.

communication process and he tried to define a common axiom to explain the phenomena of mankind's communication. In 1960, he published *Closing Statements: Linguistics and Poetics* and set forward his famous statement on communicative functions model.[32] Based on the Prague School's achievements, Jakobson argued that any speech or even communication event contains six basic elements corresponding to six foundational functions (Figure: 2-5[33]). Instead of enumerating the six functions one by one, he organized them in the communication process at last.

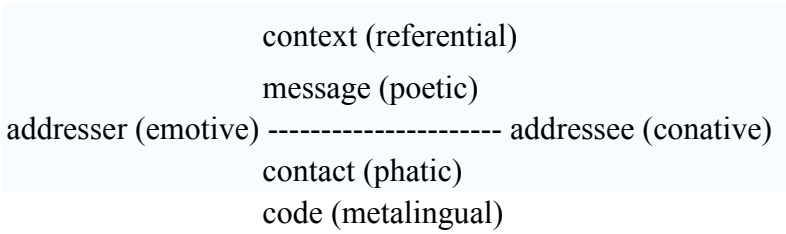


Figure: 2-5, Roman Jakobson Model

In fact, Jakobson's communication processing chart can be applied to all forms of information transfer, including all acoustical, optical, haptical, olfactory and gustatory signals. The vital contributions of the binary scholars – Lévi-Strauss and Jakobson – established an academic preparation for development of the later semiology.

2.2.4.4 The Copenhagen School and the Glossematic Linguistics

In 1931, the Danish Linguist – Louis Hjelmslev (1899 – 1965) founded another very important structural linguistics study centre – the Copenhagen School – with his

[32] Roman Jakobson, from wikipedia, the free encyclopaedia, [online]. Available at: http://en.wikipedia.org/wiki/Jakobson [08 Nov 2006]
[33] Hawkes, Terence. *Structuralism and Semiotics*, op. cit., pp.83,85.

colleagues. His ideas in linguistics formed the basis of the *"Glossematic Linguistics"*. Indeed, Hjelmslev's most remarkable contribution was established on the foundation of Saussure's linguistics. He devotedly inherited Saussure's basic framework of linguistics as well as rectifying the definitions of some very important concepts. So, if it is possible to say that, in linguistics study, Saussure mainly focused on spoken & written language after all, well then Hjelmslev opened a perspective to a broader scope – the signs.

Hjelmslev's theory can be introduced from four aspects. The first one is the *"Glossematic Linguistics"*, which is the general purport of his theory. Then two renewals for Saussure's important binate concepts – the *"Process (or Text) and System"* versus the *"Parole and Langue"*, the *"Expression and Content"* versus the *"Signifier and Signified"* – are worthy of notice. Finally, a pair of important concepts – the *"Denotation and Connotation"* constitutes one point of his remarkable innovations in structural linguistics.

The word – *"Glossematics"*, which was translated from Danish – "Glossematik", was partially stemmed from the Greek word – "glossa" which means "tongue" or "language".[34] Hjelmslev created it to nominate the academic scope that would be *"'an algebra of language operating with unnamed entities', a science having the 'immanent*

[34] Louis Hjelmslev, from Wikipedia, the free encyclopaedia, [online]. Available at: http://en.wikipedia.org/wiki/Louis_Hjelmslev [08 Nov 2006]

algebra of language' as its object."[35] As its definition implies, Hjelmslev wanted to invent a set of common vocabularies and principles to the language study, in which every one could be a generalization of "arithmetic" fitting to a specified set of linguistic phenomena. This universal aim proved the natural relationship between structural linguistics and metaphysics again. Additionally the *"Glossematics"* became well-known for its *"endeavours to provide a rigorous, simple and exhaustive framework and terminology for explaining language reality and language usage."*[36]

Being similar to Saussure, Hjelmslev also believed that language is a system of signs and devoted himself to explaining the essence of the sign. It is easy to sense the succession between him and Saussure from his work. Saussure's *Course in General Linguistics* was idiographic for its binate structure. So did Hjelmslev. Furthermore, he did not merely follow and modify Saussure's old ones but also innovated in the remarkable new realm.

Firstly, he modified the concept of *"langue and parole"* into the *"system and process (or text)"* positively because Saussure incomprehensibly gave the privilege to the spoken word at the level of parole. Hjelmslev still insisted that the langue is a sign system, but freed the parole from the shackle of only human's speech. By this modification, he defined it *"a process of realization"*[37], which can be any activities of

[35] Lechte, John. *Fifty Key Contemporary Thinkers, from structuralism to postmodernity*, (London and New York, Routledge, 2003), p.139.
[36] Ibid, p.139.
[37] Ibid, p.136.

creating or using the sign system (langue). Furthermore, he reaffirmed the inseparable coalition between this pair of concepts *"for while a language without a text is 'imaginable', a text without a language is not."*[38] Since the concept of langue and parole is the basis of the whole structural linguistics, this modification was clearly a vital development for semiology. The langue is both the instrument and the product of the parole, so if anyone wants to apply the linguistics theory to explain the various signs, the first contradiction they must solve is just what these signs – the langue – are produced by; what these signs can be used by. Theoretically the answer is parole, but according to Saussure it is only our speaking, which function apparently is limited very much to create the material world of signs. Therefore, Hjelmslev's renewal is epochal. He removed one of the biggest fetters for semiology.

The second modification was focused on Saussure's "Signifier and Signified". Hjelmslev explained the linkage between them by the concept of "function". He noticed that *"no sign exists by itself in isolation; rather, signs are always in a context in relation to other signs."*[39] To elucidate this point he invented the "sign function", which he defined as *"a dependence that fulfils the conditions for an analysis."*[40] For easier understanding, John Lechte has given a good comparison to interpret this point. Lechte wrote that *"just as there is a function between a class and its components, so there is a function between a sign and its components, 'expression' and 'content'. A sign, in short, is not some mark, or gesture with intrinsic qualities (an arrow might not*

[38] Ibid, p.140.
[39] Ibid, p.136.
[40] Ibid, p.136.

always be a sign), but is what functions as a sign in a given context."[41] Here indeed, Hjelmslev extended the area of sign with a dynamic standpoint. According to him, the sign would be neither a physical nor a non-physical entity. In especial context, they exist within the transformation between the expression and the content, which actually is the significant procedure.

His own thorough innovation could be nothing but the concepts of "Denotation and Connotation". The former, as the term implies, *"is the area of expression which refers to a content."*[42] It is a simple and linear transfer process. However the later, which is more complex, *"refers to the fact that the expression and content taken together become another expression referring to another content."*[43] Based on these two concepts, he attempted to go into the scope of semiology and further developed the terms of "Denotative Semiotics and Connotative Semiotics". As Hjelmslev defined that *"a denotative semiotic is 'a semiotic none of whose planes is a semiotic', whereas a connotative semiotic is a semiotic 'whose expression plane is a semiotic'."*[44] Hjelmslev invented this pair of concepts, but they give a remarkable inspiration to Roland Barthes. In his *Elements of Semiology*, the Denotation and Connotation were carried forward.

From a developing point of view, Hjelmslev was a connecting link between the preceding and the following in the development of structural linguistics. On the one

[41] Ibid, pp.136,137.
[42] Ibid, p.139.
[43] Ibid, p.139.
[44] Ibid, p.139.

hand, he carefully reviewed and modified Saussure's theory; on the other hand, his theory was mostly referenced by the later semiologists. Actually, although the Copenhagen School was famous as a linguistic study group, according to Hjelmslev's contribution, it was not so much to title him a linguist as a semiologist.

2.2.4.5 American Scholar's Contributions and Descriptive Linguistics

Mainly because of the negative effect of the first and the second World Wars, academic communication between the Europe and America was cut off during the prosperous developing period of the structuralism in linguistics and anthropology. So, American linguists and anthropologists worked in a comparatively independent academic atmosphere. Comparing with their European colleagues, they took the advantaged situation of having the opportunity to study the original American Indians face to face. Actually those first-hand investigations about the native Indians' languages promoted and composed the main development of the American structural linguistics and anthropology.

The term – *"Descriptive Linguistics"* was crowned to American linguists, such as Franz Boas (1858 – 1942), for their efforts on arranging and recording those endangered ancient Indian languages. However, the work of Edward Sapire (1884 – 1939), one of the most influential American "descriptive" linguists, formed the basis of the theory came to be termed "structural linguistics" in America.

Through the studies among the different Indian tribes, Sapire set forward his opinion relating the linguistics with the social cultures. He believed that the different languages play the vital role in forming the diversity of the world. The different interior structures of the various languages, even the most inconspicuous nuance, will be strong enough to form the totally different worlds. These distinctnesses will embody in every aspect of the society – the building, the habit, the food, the garment and the culture.

Sapire emphasized the supreme power of the linguistic structure in human society. This point obviously reflects the prime destination of the metaphysics. But in later time, Hawkes pushed his viewpoint further and interpreted this point in the whole social scope. In fact Hawkes believed that by Sapire's theory the whole human civilization can be looked as a huge language. This point is clear in his following annotation: *"In short, a culture comes to terms with nature by means of 'encoding', through language. And it requires only a slight extension of this view to produce the implication that perhaps the entire field of social behaviour which constitutes the culture might in fact also represent an act of 'encoding' on the model of language. In fact, it might itself be a language."*[45]

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Evidently, based on the review thereinbefore, both the linguistic studies of Europe and

[45] Hawkes, Terence. *Structuralism and Semiotics*, op. cit., p.32.
~~~~~~~~~~

America embodied a tendency of extending the subject from only spoken & written languages to all the sign systems. Those investigations inevitably pushed the structural linguistics study into a wider and more comprehensive stage, in which the relating theory can be used to explain all the substances, signals, symbols, icons, totems, and even every thing that has been endowed with significations in the world. In terminology, this relative new subject is known as both the "semiology and semiotics", and the objects of research are generally nominated as the "signs". But interestingly, if slightly tracing back to the above part of the thesis, it is easy to discover that, since the last time conversion from the objective universe to the subjective linguistics and anthropology, the structuralism study has gradually turned back to the objective scope again. It seems to be a transmigration of Hegel.

2.2.5 The Study about Signs

The word – "Sign" can be used as the different parts of speech in grammar. As noun or verb – this very common English word designates so many differences in meaning and so many usages in grammar. Although everyone probably uses this word daily, it is still difficult to say that they have thoroughly understood it. Indeed, this simple word catalyzed an epoch-making revolution in linguistics field. With the usage as noun, the Structural Linguists turned to study all kinds of visual objects and developed a new subject known as the semiology or semiotics. Conspicuously by these theories, to study the non-spoken & written communication phenomena by linguistic theory became approachable and practicable. This development in linguistics was vital for the built

environment language study as well, because the elements in built environment, such as architecture, gardens, cities or sculptures, can be intuitively placed in the scope of signs. In fact, many remarkable studies about language of architecture, language of urban and language of landscape reflected the silhouette of the semiology more or less. This potential relationship implies that the study of signs plays an important role in the built environment language scope, and need to be reviewed carefully. But as same as all other subjects, the semiology or semiotics is also undergone a long developing process and contains a complex inner-system. So for a systematic review through academic development process, it is unreasonable to start an exploration without thinking about the most primitive concept – "Sign" per se.

The definition of "Sign" can be learned from various resources, in which different ones could contain the different explanations. However, if summing up those terms together, a common explanation still can be extracted out.

According to Merriam-Webster's Collegiate Dictionary,[46] the etymology of the word "sign" is an English word evolved from an Anglo-French word – signe and Latin signum by 13th century. As a noun, it contains seven different meanings:

1, A: a motion or gesture by which a thought is expressed or a command or wish made known;

B: a fundamental linguistic unit that designates an object or relation or has a

[46] Sign from Merriam-Webster's Collegiate Dictionary, [online]. Available at http://www.britannica.com/dictionary?va=sign&query=sign [14. May. 2008]

purely syntactic function (signs include words, morphemes, and punctuation);

C: one of a set of gestures used to represent language;

2, a mark having a conventional meaning and used in place of words or to represent a complex notion;

3, one of the 12 divisions of the zodiac;

4, A: a character (as a flat or sharp) used in musical notation;

B: a character (as ÷) indicating a mathematical operation; one of two characters + and - that form part of the symbol of a number and characterize it as positive or negative;

5, A: a display (as a lettered board or a configuration of neon tubing) used to identify or advertise a place of business or a product;

B: a posted command, warning, or direction;

6, A: something material or external that stands for or signifies something spiritual;

B: something indicating the presence or existence of something else (signs of success) (a sign of the times);

C: an objective evidence of plant or animal disease;

7, plural usually sign : traces of a usually wild animal (red fox sign);

In general, Sign applies to any indication to be perceived by the senses or the reason.

According to the "dictionary.com unabridged (v 1.0.1)", the "Sign" contains fourteen different meanings:[47]

[47] Sign, from dictionary.com Unabridged (1.0.1), [online]. Available at: http://dictionary.reference.com/browse/Sign [21 Nov 2006]

1. *A token; indication.*
2. *Any object, action, event, pattern, etc., that conveys a meaning.*
3. *A conventional or arbitrary mark, figure, or symbol used as an abbreviation for the word or words it represents.*
4. *A motion or gesture used to express or convey an idea, command, decision.*
5. *A notice, bearing a name, direction, warning, or advertisement, that is displayed or posted for public view: a traffic sign; a store sign.*
6. *A trace; vestige.*
7. *An arbitrary or conventional symbol used in musical notation to indicate tonality, tempo, etc.*
8. *Medicine/medical. The objective indications of a disease.*
9. *Any meaningful gestural unit belonging to a sign language.*
10. *An omen; portent: a sign of approaching decadence.*
11. *Sign of the zodiac*
12. *Sign language*
13. *Usually, signs. Traces, as footprints, of a wild animal.*
14. *Mathematics.*
    - *A plus sign or minus sign used as a symbol for indicating addition or subtraction.*
    - *A plus sign or minus sign used as a symbol for indicating the positive or negative value of a quantity, as an integer.*
    - *Multiplication sign.*

- *Division sign.*
- *A symbol, as √ or !, used to indicate a radical or factorial operation.*

In American Heritage Dictionary, eleven explanations are given below:[48]

1. *Something that suggests the presence or existence of a fact, condition, or quality.*
2. *An act or gesture used to convey an idea, a desire, information, or a command.*
3. *Sign language.*
4. *A displayed structure bearing lettering or symbols, used to identify or advertise a place of business.*
5. *A posted notice bearing a designation, direction, or command.*
6. *A conventional figure or device that stands for a word, phrase, or operation; a symbol, as in mathematics or in musical notation.*
7. *pl. sign An indicator, such as a dropping or footprint, of the trail of an animal.*
8. *A trace or vestige.*
9. *A portentous incident or event; a presage.*
10. *A body manifestation that serves to indicate the presence of malfunction or disease.*
11. *One of the 12 divisions of the zodiac, each named for a constellation and represented by a symbol.*

[48] Sign, from American Heritage Dictionary, [online]. Available at: http://dictionary.reference.com/browse/Sign [21 Nov 2006]

WordNet explores twelve various meanings of "Sign":[49]

1. *Used of the language of the deaf*
2. *A perceptible indication of something not immediately apparent (as a visible clue that something has happened);*
3. *A public display of a (usually written) message;*
4. *Any communication that encodes a message;*
5. *Structure displaying a board on which advertisements can be posted;*
6. *(Astrology) one of 12 equal areas into which the zodiac is divided;*
7. *(Medicine) any objective evidence of the presence of a disorder or disease;*
8. *Having an indicated pole (as the distinction between positive and negative electric charges);*
9. *An event that is experienced as indicating important things to come;*
10. *A gesture that is part of a sign language;*
11. *A fundamental linguistic unit linking a signifier to that which is signified; "the bond between the signifier and the signified is arbitrary"--de Saussure;*
12. *A character indicating a relation between quantities;*

But in Crystal Reference Encyclopaedia the "Sign" is interpreted mainly from the angle of semiology:[50]

Something that stands for something else, which it may or may not resemble, the relationship often being agreed by convention; for example, an arrow indicates

[49] Sign, from WordNet, [online]. Available at: http://dictionary.reference.com/browse/Sign [21 Nov 2006]
[50] Sign, from Crystal Reference Encyclopaedia, [online]. Available at: http://www.reference.com/browse/crystal/34735 [21 Nov 2006]

direction, and greying hair the ageing process. In semiotics a sign comprises a signifier (its physical appearance, sound, etc) and a signified (the mental concept it evokes). Each sign's meaning is determined partly by its differential relationship with other signs in the same code, partly by its relationship with the thing it stands for. Signification is the process by which signs acquire meaning in a specific cultural context.

At last, in Wikipedia, the explanation designating to the item – "Sign" is focused on the essence of signification:[51]

A sign is an entity that indicates (represents) another entity to an agent (a human, animal or robot) for some purpose. It enters as a correlative in the relation of signification and significance (meaning for constructs) causing something else to come to the mind as its effects. According to the classic views of Aristotle, Augustine, and Aquinas, 'signification is a relationship between two sorts of things, which are signs and the kinds of things they signify'. To express a significance, the signs may both point out and stand for the entities signified, or just take the place and substitute as the symbols do. Also, signs or symbols may signify only mental constructs or they signify both constructs and external things. Then, since the signs signify (express, denote, connote, or designate) but the constructs mean, the significance of a sign in a language (natural or formal) equals the meaning of the mental construct designated by the sign.

Going through these elucidations, it is not difficult to grasp that the "Sign" in noun

[51] Sign, from Wikipedia, the free Encyclopaedia, [online]. Available at: http://www.reference.com/browse/wiki/Sign [21 Nov 2006]

could be anything which is endowed with meanings by humans. For us, the present world is now full of signs. However even for our ancestors, since they have developed their intelligence and began to think about the environment, the signs just existed around. So taking the signs as the study object, semiology or semiotics will be suitable to every significant thing, in which certainly includes one kind of the most important meaningful artificial products – architecture and the entire built environment as well.

2.2.5.1 Semiology and Semiotics

Through the review above, an interesting point can be detected. The study on Sign has been crowned to two different terms – the semiology and semiotics. In reality, limited by the means of the global information communion, the earlier scholars often thought about a same concept coincidently. The semiology and semiotics is just one of these coincidences.

Tracing back the history, it is easy to notice that although the relative theoretical development was launched in the 1960s, the term – semiology or semiotics appeared a half-century earlier. In parallel, two leading linguists – one from Europe and another from America – described this important concept with these two different words. In *Course in General Linguistics*, Saussure invented 'semiology' with the prophecy that *"…a science that studies the life of signs within society is conceivable; it would be a part of social psychology and consequently of general psychology; I shall call it semiology. Semiology would show what constitutes signs, what laws govern them…*

Linguistics is only a part of the general science of semiology."[52] Corresponding dramatically, 'semiotics' was crowned by the American scholar, C. S. Peirce (1839 – 1914) who argued that *"Logic, in its general sense, is, as I believe I have shown, only another name for semiotic, the quasi-necessary, or formal doctrine of signs."*[53]

Both of these terms are approbatory in academic field. The semiology is applied mostly by European scholars but the semiotics is popular in America. In this thesis, since the venation mainly traces the European theoretical development, only the term – semiology will be applied thereinafter, and in semiology scope, the next significant scholar should be Roland Barthes.

2.2.5.2 Roland Barthes' Semiology

One of the most prominent works on semiology is Roland Barthes' (1915 – 1980) *Elements of Semiology* published in 1967, which is a systematic summary and review of key theorists. In addition to retaining the original thoughts of Saussure, Jakobson, Hjelmslev and others, Barthes also propounds his own development. He suggests four pairs of new explanations for structural linguistic binary concepts from a semiological viewpoint; these are *"langue and parole", "signifier and signified", "syntagm and system", "denotation and connotation"*.

Based on Saussure's primal description of langue and parole (2.2.4.1), Barthes modified

[52] Saussure, Ferdinand de. *Course in General Linguistics*, op. cit., p.16.
[53] Hawkes, Terence. *Structuralism and Semiotics*, op. cit., p.123.

and introduced them into the field of semiology. As the foundation of structural linguistics, Barthes also used lots of words to elaborate the definitions of langue and parole and the differences between them.

Barthes' definition of langue is that langue *"is at the same time a social institution and a system of values. As a social institution, it is by no means an act, and it is not subject to any premeditation. It is the social part of langage, the individual cannot by himself either create or modify it; it is essentially a collective contract which one must accept in it entirety if one wishes to communicate… As a system of values, a language is made of a certain number of elements, each one of which is at the same time the equivalent of a given quantity of things and a term of a larger function, in which are found, in a differential order, other correlative values…"* And parole is that, *"in contrast to the langue, which is both institution and system, parole is essentially an individual act of selection and actualisation; it is made in the first place of the 'combination thanks to which the speaking subject can use the code of the language with a view to expressing his personal thought' (this extended speech could be called discourse),.and secondly by the 'psycho-physical mechanisms which allow him to exteriorise these combinations.'"*[54]

About langue, Barthes changed concepts to illustrate the concrete aspect and abstract aspect of Saussure's definition. Comparing with "social product", he used the "system

[54] Barthes, Roland. Translated from the French by Annette Lavers and Colin Smith, *Elements of Semiology* (London, Thirty Bedford Square, Jonathan Cape, 1967), pp.14,15.

of value" to indicate the quantity of things and the interactive relationship between the things' functions. Then, the "social institution" embodies Saussure's "*necessary conventions*". Barthes' langue focused much more on a kind of social contract than the concrete things themselves. This modification not only benefits his effort to introduce linguistics into the world of sign, but also limited his thought in semiology, too. This point is crucial for the built environment linguistics and will be carefully studied in later chapters. (3.2)

Clearly, Barthes' parole is similar with Saussure's by both pointing to individual activity on langue, but Barthes further emphasized the more concrete process of operation of parole, which is *selecting* elements of langue, *combing* them together to *actualiz*e something else. Barthes also defined this process as psycho-physical mechanism, which just mirrors that Saussure addressed parole with "psychophysics".

Besides the definitions, through a series of detailed analyses about the garment system, food system, car system, furniture system and mass-communications system, Barthes suggested the existence of *"...a general category langue/parole, which embraces all the systems of signs."*[55] He also explained that inside the majority of the semiological systems the langue was elaborated by some "*deciding group*" using "*logo-technique*" rather than by the "*speaking mass*" but the user *"has no part in their elaboration",* and that the decisions of deciding groups must be limited by both the "*signifying contract*"

[55] Ibid, p.25.

and the "*determination of the community*", which includes the social, economic and ideological effects.[56]

The second pair – signifier and signified, which are the components of the sign in Saussure's terminology, were endowed with deeper meanings. As such, two important innovations were emphasized by Barthes:

- The taxonomy of signs. He divided the signs into "isologic signs" and "non-isologic signs", which in the former case the signifier/signified cannot be dissociated and differentiated each other, but in the later case they can be separated clearly and the meaning is easy to grasp.[57]
- The concept of "value", which in Saussure's terminology was the "*reciprocal situation*" among words, was highlighted corresponding to Hjelmslev's idea (2.2.4.4). In Barthes' theory, it also meant the context of the signs. He stressed the need to understand the real essence of any sign by pursuing its interrelationship and interaction with surroundings, and argued that *"...we must to conclude, tackle the sign, no longer by way of its 'composition', but of its 'setting': this is the problem of value."*[58]

The third pair – syntagm and system were also the succession from Saussure's "syntagmatic and associative" viewpoints. They are company axes of thinking

[56] Ibid, pp.31,32.
[57] Ibid, pp.45,46.
[58] Ibid, p.54.

designated to the signs, in which the former was developed in a linear and articulated way and the latter can be unfolded in people's potential memory stores. In Barthes' analysis, architecture was highlighted firstly as an example of signs to explain the semiological syntagm and system. Besides the garment system, food system and furniture system, he wrote that the syntagm of architecture was a *"...sequence of the details at the level of the whole building*" and the system of architecture was "*…variations in style of a single element in a building, various types of roof, balcony, hall, etc."*[59]

The last pair involved the review about Hjelmslev's "denotation and connotation" (2.2.4.4), which related closely to the signification process. The author used three abbreviations to represent the three essential facets of signification process. They are E – representing Expression (Signifier), R – representing Relation and C – representing Content (Signified) contained in the ERC procedure. Following Hjelmslev's theory, two different ERC processes were explored respectively. The first was that one or some ERC systems could be considered as the single E of an upper level ERC, which the former ERC was named as *"connotators"* of the later and the whole system as the *"connotation system"*. In this situation the upper level ERC was noted as the "*connotation plane*" and the lower levels the *"denotation plane"*. The second was that an ERC system could be the C of an upper level ERC, which the process was repeatable and the whole procedure could be considered as *"metalanguage"*.[60] Actually, this part

[59] Ibid, p.63.
[60] Ibid, pp.89-94.

could be looked at as a summary of all the former contents. They push the signification phenomena into an interactive and dynamic-balanced state. Expression (E) of a sign system could come from many fragmental and different ideas, just like independent purports of chapters forming the integrated content of a book or the large amount early design sketches developing to a final beautiful edifice. Successively, content (C) of a sign system also could be studied by different metalanguages, including spoken & written languages, scientific operations and artistic expressions, etc.; then, these metalanguage studies and explanations also can be explored by sub-level receivers with other metalanguages again. Combining the two scopes together, an intact signification course can be intricately and endlessly realized.

Roland Barthes' masterwork developed semiology from a primitive position into a systematic theory. He thoroughly and concisely introduced the theory of structural linguistics into the infinite world of signs enabling everything – including the built environment, which can be looked as a sign, – to be studied as a linguistic system.

2.2.5.3 The Eiffel Tower

In Barthes' view, the Eiffel Tower is an excellent example to explain his semiological theory within the scope of architecture. In an essay – *The Eiffel Tower*, which was published at the same year (1964) with the *Elements of Semiology*, he unfold a wonderful frame of the Tower's versatile meaning.

Loftily standing on the bank of Seine, the Tower has become the symbol of Paris to everyone. Barthes didn't deny this point but consider it with semiological character – as a piece of dramatic architectural sign. As he argued *"beyond its strictly Parisian statement, it touches the most general human image-repertoire: its simple, primary shape confers upon it the vocation of an infinite cipher: in turn and according to the appeals of our imagination, the symbol of Paris, of modernity, of communication, of science or of the nineteenth century, rocket, stem, derrick, phallus, lightning rod or insect, confronting the great itineraries of our dreams, it is the inevitable sign."*[61] Since being a sign, it must can be analyzed as signifier and signified. Architecture, as the entities of sign, naturally are signifiers themselves. Additionally, to be very different with other monofunctional signs, such as traffic signals, which only designate information of pass or stop on a cross, architecture could carry huge amount information and intrigue abundant imagination. This point might meet a bit of obstacle when dealing with a small house, but to a magnificent national structure like the Eiffel Tower, it is absolutely out of question.

Barthes noticed this aspect as well. He not only believed that the Tower contains a lot of information, but also emphasized that these information will be successively increased because *"the Tower attracts meaning, the way a lightning rod attracts thunderbolts; for all lovers of signification, it plays a glamorous part, that of a pure signifier, i.e., of a form in which men unceasingly put meaning (which they extract at*

[61] Barthes, Roland. *The Eiffel Tower and Other Mythologies*, Translated by Richard Howard, (Berkely, Los Angeles, London, University of California Press, 1997), p.4.

will from their knowledge, their dreams, their history), without this meaning thereby ever being finite and fixed: who can say what the Tower will be for humanity tomorrow?"[62] Clearly, on this point, it seems as if it is impossible to summarize all meanings of the Tower together and extract a central authorized meaning covering all others. Actually, this opinion contradicted with his argument about that most of the semiological systems were elaborated only by "deciding group" rather than the users. Maybe we can argue that Barthes might think architectural signs as exception from the "most of the semiological system", but it obviously is unreasonable because architecture is the biggest artificial product of human-being and the most complex carrier of our civilizations. It won't be excluded from a kind of so called general characteristics of semiological systems.

In fact, in the following paragraphs of his essay, Barthes roundly introduced the complicated signified of the Tower from two aspects – *"an object which sees"* and *"a glance which is seen"*.[63] On both sides he emphasized the endless imagination of the Tower's visitors.

- Focusing on the former, the Tower became a platform for every one to overlook the whole Paris city and to experience the personal *"decipherment"* through a tunnel of history. Comparing with Hugo's *Notre-Dame de Paris* and Michelet's *Tableau Chronologique*, people who climb on the top of the Tower will inevitably bird-view the panorama of the Capital and decipher the magic of

[62] Ibid, p.5.
[63] Ibid, p.4.

Paris. After this, all the visitors will obtain their own understanding to the city. No matter synchronic or diachronic, scientific or religious, materialistic or idealistic, etc., they all have undergone a rite of *"Initiation"* of Paris.[64]

- Focusing on the latter, the Tower per se becomes an object to understand from different distance. Out of the Tower, people can capture an overview of its out-appearance, which will inspire infinite metaphors. However if going into the Tower, the visitors will have chance to carefully observe every single element of the Tower, such as *"plates, beams, bolts, which make the Tower"*, and to enjoy a comfortable and circumspect service provided by the Tower, such as having a good lunch, shopping for some souvenirs or going back to the former aspect – bird-viewing the great Paris. In general, the Tower is like an *"ocean liner"*, which gives you every facet of dream and you give it back endless meanings.[65]

From Barthes' explanation of the Eiffel Tower, it is sensitive that he began to notice the existence of different individual understanding to a sign system, which has been more detailedly introduced in the S/Z.

2.2.5.4 Roland Barthes' S / Z

In Barthes' other critical work – *S/Z* – published in 1970, he unreservedly expressed his repulsion to the absolute authority of authors. He argued that literature can be divided into two different "texts". One was named as the *"readerly texts"*, which people only

[64] Ibid, pp. 8-14.
[65] Ibid, pp. 14-17.

can read within the subdued situation, and the authority of authors will be transferred clearly and unchangeably from the signifier to the signified. Within these texts people's own opinions become worthless and useless, and the only right left for them is unconditional acceptance or rejection. Another one was nominated as the *"writerly texts"*, which, on the contrary ask the reader to read with strong self-consciousness, and even take part in the process of composition. Inside this kind of texts, the original orthodox signified (meaning) is replaced by the various readers' interpretations, which form the real joys of cooperation and co-authorship. Through these two concepts, Barthes elucidated his germination of the deconstruction viewpoint, which makes of another vital academic contribution of him.

Substantially, as early as in the *Elements of Semiology*, Barthes has unveiled his intentness in deconstruction scope. In his explanation of denotation and connotation, both the possibilities of multi-writers (connotation) and multi-readers (metalanguage) have been implied inside. Probably this thinking directly deduced the later deep study on the "readerly text" and "writerly texts".

The two kinds of texts imply a series of different performances in reading. Hawkes gave a detailed and comprehensive panorama of them. In the following four pairs of comparisons, the difference between two kinds of texts was incisively and vividly embodied.

- *"Where readerly text (usually classics) are static, virtually 'read themselves' and thus perpetuate an 'established' view of reality and an 'establishment' scheme of values, frozen in time, yet serving still as an out-of-date model for our world, writerly texts require us to look at the nature of language itself, not through it at a preordained 'real world'. They thus involve us in the dangerous, exhilarating activity of creating our world now, together with the author, as we go along."*
- *"Where readerly texts presuppose and depend upon the presumptions of innocence outlined above, and with them the unquestioned relationship between signifier and signified that those presumptions reinforce, saying 'this is what the world is like and always will be like', writerly texts presume nothing, admit no easy passage from signifier to signified, are open to the 'play' of the codes that we use to determine them."*
- *"In readerly texts the signifiers march: in writerly texts they dance."*
- *"And paradoxically, where readerly texts (which require no real reading) are often what we call 'readable', writerly texts (which demand strenuous reading) are often called 'unreadable'."*[66]

"Readerly texts" and "writerly texts" formed the basis of Barthes' thinking of deconstruction. Being a crucial semiologist, he held an important position in the development of deconstruction theory by the well-known *S/Z*.

[66] Hawkes, Terence. *Structuralism and Semiotics*, op. cit., pp.114,115.

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To sum up, similar to Hjelmslev's role between the structural linguistics and the semiology, Barthes also can be seen as remarkable linkage between both the structural linguistics & semiology and the semiology & deconstruction. The last one also became the most influential philosophical school since 1960s. Barthes' contribution in semiology is clear and undoubted. What he devoted himself to is to establish the theoretical basis of introducing the semiology theory into other scopes. However, his study on deconstruction can only be considered as a bravo attempt. Although he has acutely discovered the even more positive and active potential role of reader, he didn't systematically develop it. Actually, his thinking of deconstruction was brought forward three years later than Jacques Derrida's (1930 – 2004) deconstruction. In historical view, his *S/Z* also should be assessed as an echo of the growing influence of Derrida, who was well-known as the founder of the "Deconstruction". Due to this stage, the structuralism actually has been evolved into a so ambiguous and flexible stage, which has to driven many thinkers to seek its logical end.

2.2.6 The Deconstruction Study

Deconstruction is a form of philosophy, developed mainly from works begun in the 1960s by the French philosopher Jacques Derrida. Inherited from the work of Heidegger and his notion of Destruktion, Derrida's deconstruction was firstly a
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philosophical thought to explore the world, and then, gradually influenced many different scopes. The definition of deconstruction is relatively ambiguous and only could be learned from different resources.

Since 1967, Derrida began to publish a series of works – "*Of Grammatology*", "*Writing and Difference*", "*Dissemination*" and "*Margins of Philosophy*", etc., which gradually systemized the theory of deconstruction. The main subject of deconstruction opposes the philosophy of meaning, which can be elaborated that meaning is actively constructed by writers in texts, and only passively understood by readers. In structuralism scope, this thought was presented as opposition towards the earlier structuralists' aim of pursuing an encyclopaedically permanent structure. The key point of Derrida's thought can be focused on the existence of multiple meanings of text and denied the clear intention of an author. He believed that *"…the 'subject' of writing does not exist if one understands it to imply some sovereign solitude of the writer. The subject of writing is a system of relationships between layers…of the psyche, of society, of the world. Within that scene, the punctual simplicity of the classical subject cannot be found."*[67] As the more readings occur, the more different understandings will be obtained and the more ambiguous author's original intention will be.

For illuminating this esoteric phenomenon, Derrida introduced a series of terms into his theory. One was "différance", coined by Derrida to address both a difference between

[67] Howells, Christina. *Derrida, Deconstruction from Phenomenology to Ethics* (Cambridge, Polity Press. 1999), p.77.

the meanings of words and an act of deferring the different meanings, characterizes an understanding process in which meaning of text is only created through the "limitless", "infinite", and "indefinite" "play" of differences between words rather than by an original idea or authorized intention. Concretely to say, for example, in a sentence, the meaning of a word always function by contrasting with the meanings of other words, and the meanings of those words together are also dependent on contrast with the meanings of still other words, then among the differences of words, we can grasp a meaning of whole sentence. This phenomenon indicates that the meaning of a word is not isolated thing that is fully present to us but is endlessly deferred in an infinitely long chain of meanings, each of which contains the "traces" of the meanings on which it depends. Derrida further introduced the term – "logocentrism" to consolidate his idea. Briefly, it means there is a realm of "truth" existing prior to and independent of its only representation by linguistic signs. And logocentrism encourages us to treat linguistic signs as distinct from and inessential to the phenomena they represent, rather than as indispensable bound up with them.[68]

Another was "*chain of meanings*", which also implied that endless continued meanings should derive from readers' various decoding and recoding processes rather than the author's purposes. Additionally "*dissemination*" elucidated the randomness of new meanings compared with "*polysemy*". Howells (1999) gave a transpicuous interpretation for the difference between the "*dissemination*" and "*polysemy*".

[68] Deconstruction, from Britannica [online]. Available at http://www.britannica.com/eb/article-9029711/deconstruction [14 May 2008]

"...polysemic meanings can be gathered together and totalized, whereas disseminated meanings remain fragmented, multiple and dispersed. Dissemination disrupts semantic in so far as it produces an indefinite number of semantic effects. ...Unlike polysemy, then, dissemination is not dominated by the author, and its multiple meanings cannot be totalized as forming part of the author's intentions.…dissemination is positive: it is not a loss of meaning but rather the affirmation of an indefinite number of meanings."[69]

These terms may absolutely destroy the desire for any authorized logic, order, theme and the purport of structuralism. With the increasing effect of Derrida's thinking on various academic circles, deconstruction was applied in more and more fields as a kind of analysis, method and critique. However, Derrida himself seemed to reject these applications. Further more, even more subtle relationship between his deconstruction and structuralism can be sensed.

Firstly, to the term – deconstruction, which he originally found from the Littré[70], Derrida introduced his quotation to try to elaborate its fundamental meaning by highlighted that *"Of deconstruction, common way of saying construction,"*[71] which hinted the etymological relationship between deconstruction and construction (structure). Secondly, Derrida preferred negative explanations rather than positive definition to his deconstruction. He argued that:

[69] Howells, Christina. *Derrida, Deconstruction from Phenomenology to Ethics* , op. cit., pp.78,79.
[70] Derrida, Jacques. 'Letter to a Japanese Friend', *Derrida and Différance*, edited by Daivd Wood, Robert Bernasconi, (Evanston, IL, Northwestern University Press, 1988), p. 2.
[71] Ibid, p. 2.

- *"Deconstruction is neither an analysis nor a critique…";*
- *"Deconstruction is not a method and cannot be transformed into one";*
- *"It is not enough to say that deconstruction could not be reduced to some methodological instrumentality or to a set of rules and transposable procedures… It must also be made clear that deconstruction is not even an act or an operation."*
- And *"Deconstruction takes place; it is an event that does not await the deliberation, consciousness, or organization of a subject, or even of modernity. It deconstructs itself. It can be deconstructed."*[72]

From these quotations, it could be understood that Derrida was very cautious to his deconstruction. Through refusing to define deconstruction as analysis, critique, method, instrumentality, rules, act and operation, he ably avoided to fall into the "trap" of structuralism. Because once the theory of deconstruction is defined as a kind of analysis, critique, method, instrumentality, rule or operation, it will be inevitably used by people with some structural characteristics, and that is the moment of deconstructing itself. By this way, it seems that deconstruction has successfully escaped from the siege of ubiquitous structuralism and can freely "deconstruct" any structure without being infected. However, is this kind of "freely deconstructing ubiquitous structures" itself ubiquitous? Does this the ubiquitous feature of deconstruction reflect similarity with Hegel's Logic?

[72] Ibid, pp. 3,4.

The last clue can be dug out from the explanation of "différance". According to the introduction above, it means that the meaning of texts only come from endless contrast between the different meanings of words. For a reader, this actually is a subjective operation of selection and combination, a psychophysical process of stimulus and perceiving, and an active application of using knowledge and creating newness. If tracing back to Saussure's and Barthes' theories, it is not difficult to notice strong characteristics of parole.

So, from structuralism to deconstruction, from a perpetual coverall super-system to multiple thinking-debris, this subject had completed a transition of extreme-to-extreme. Although as a thought of philosophy, deconstruction is mainly against the structuralism and currently has almost swept over all scopes of arts, ranged from painting to sculpture, from novel to architecture, there is still no clear evidence to claim a clear boundary between deconstruction and structuralism. Actually as the different branches on a same trunk, there are very subtle and sensitive ties bounding them together. Derrida of course has sensed this relationship and claim an equivocal paradox, which maybe point to the essence of deconstruction – *"to deconstruct was also a structuralist gesture or in any case a gesture that assumed a certain need for the structuralist problematic. But it was also an antistructuralist gesture, and its fortune rests in part on this ambiguity."*[73]

Hence, from structuralism to structural linguistics, then to semiology and the later

[73] Ibid, p. 2.

deconstruction, these different intellectual undercurrents not only designate an evolving relationship but also coexist with each other, conspicuously, ubiquitously and controversially everywhere, especially within the realms of the built environment.

2.2.7 Summary about the Theoretical System of Structuralism, Structural Linguistics, Semiology and Deconstruction

Hereby summing up the review in the structuralism and its derivatives before, the historic progress has been clarified. Those two original academic fields – the structural linguistics – semiology have been proven belonging to one theoretical system as well as actually developing out a series of homogenous academic fields including the structuralism, structural linguistics, semiology and deconstruction. Through those complicated evolving process, the structural linguistics, semiology and deconstruction have became an embracive philosophy to explain the universal phenomenon of communication by either spoken & written language or material signs. Comparing with this unlimited extent, built environment is actually a drop in the bucket. However, as the largest and most complex artificial products of mankind, although maybe they are so tiny encountering with the great nature, our cities and mansions are still one of the best samples to materialize and realize great thoughts after all.

Designed and built by people, abundant meanings were, are and will be materialized into built environment products. Successively, used and understood by people, these materialized meanings were, are and will be converted into personal thoughts again.

Within this communication process, many structural linguistic and semiological terms can be consolidated. Hereinto, the “built environment langue” and “built environment parole” can be detected from the producing-perceiving process, what is more, deconstruction idea can be applied to support the possible numerous different individual ideas. These are all possible developments of built environment language.

This part of review actually has given a detailed answer to the question of “how can the built environment work as a mean of communication” (2.2). With this positive outcome, the next stage of research is to explore the existing various studies of built environment languages, which will uncover that how much the former built environment language studies are liaised with the structural linguistics – semiology system. This is corresponding with the second question of the first aspect of the contradiction between built environment and the concept of language (1.1).

2.3 Literature Review in the Built Environment Language Study

To be similar with the scope of structural linguistics – semiology, tracing back to the history, the study of the languages of built environment have not only undergone a long and flexuous evolution but also spread to almost every major built environment discipline.

The academic study of built environment language originally initiated from an architectural scope. Informed by Vitruvius' *De Architectura,* many Renaissance scholars, such as Leon Battista Alberti, Sebastiano Serlio and Andrea Palladio, emphasized the paramount function of the Orders of architecture. Arguably, this was the first theory of built environment language, which remained its unchangeable preoccupancy until the twentieth century when the modernized generation emphasized the idea of pure building function and nearly eradicated all the meanings of construction. However, since 1960's, some architects began to criticize the stiffness, inhospitality and machine-made attributes of modernism. As such, they advocated a variety of building styles, introduced the humanistic thinking into architectural design and engendered a revitalization and prosperity of the language study in the whole scope of built environment.[74]

[74] Jacobs, Jane., *The Death and Life of Great American Cities: The Failure of Town Planning* (New York, Vintage, 1961),
Venturi, Robert., Brown, Denise Scott., Izenour, Steven., *Learning from Las Vegas: The Forgotten Symbolism of Architectural Form, Rev. Ed.* (Cambridge, Massachusetts, and London, The MIT Press, 1977),
Jencks, Charles., *The Language of Post-Modern Architecture, the Sixth Edition, Academy Editions* (London, Academy Group Ltd. 1991),
Jencks, Charles., *What is Post-Modernism, Fourth Edition* (West Sussex, Wiley-Acxademy, 1996),
Klotz, Heinrich., Translated by Radka Donnell, *The History of Postmodern Architecture* (Cambridge, Massachusetts,

Successively, not only within the realms of architecture, but also in landscape design, city planning and urban design, all disciplines of the built environment were developed to certain language theories. According to these different topics, the new academic field – built environment language can be labelled as seven parts:

1, the Classical Language of Architecture

2, the Architectural Language of Modernism and Postmodernism

3, the Pattern Language

4, the Urban Language

5, the Landscape Language

6, the Form Grammar

7, Other Architectural Language Studies

They will be systematically reviewed in the following contents.

2.3.1 The Classical Language of Architecture

Compared to primitive human-beings, civilized people not only put up more grandiose buildings and monuments endowed with more various meaning, but also recorded the subtle sense by written words. Thus, it indicates that the complex meaning of architecture is left as a legacy for future generations and can be actually studied.

and London, The MIT Press, 1998),
Ellin, Nan., *Postmodern Urbanism, Revised* Edition (New York, Princeton Architectural Press, 1999),
Pile, John., *A History of Interior Design, Second Edition* (London, Laurence King Publishing, 2005),

According to the current study, it is known that since ancient Roman Empire, scholars have analyzed and recorded the meaning of architecture. The Rome architect, Vitruvius (80/70 BC.? – 25 BC.) was known as the first person who summarized and preserved the immense knowledge and traditions of buildings. In the third and fourth books of *De Architectura*, three of the well-known Orders – Doric, Ionic and Corinthian were described in detail and Tuscan was briefly mentioned. Though not presented as a set of canonical codes embodying all the virtues and meanings of architecture, Vitruvius recorded their development, basic usage and their precise proportions. Undoubtedly, he was the founder of the study of classical architecture. After his study, Roman architects and many Renaissance scholars continued this research and the Orders became the paramount and omnipotent elements for almost 2000 years. In relation to the study of the classical language of architecture, the Orders were (and still are) the touchstone.

John Summerson's (1904 – 1992) remarkable book – *The Classical Language of Architecture* provided a thorough summary of historic literature. As a systematic and brief explanation of classical language prepared for later followers, Summerson recorded and emphasized the development, the features and the usages of the Orders in different historical periods. Not limited to Vitruvius' four original Orders, he also studied a fifth Order – the Composite, which was juxtaposed with others by the Florentine architect and humanist – Leon Battista Alberti[75]. Subsequently, a series of historic interpretations about all the five Orders were systematically recorded and

[75] The details see: Summerson, John., *The Classical Language of Architecture*, (London, Methuen & Co Ltd, 1964), p.9.

analyzed. Summerson seriously highlighted the works by the High Renaissance architect – Sebastiano Serlio who was considered to be the composer of *"the first full-scale fully illustrated architectural grammar of the renaissance."*[76] To Summerson, the academic importance of Serlio's argument was not only the descriptions on the Orders' different characters, but also the prominent role of the Orders in Serlio's architectural grammar. From the later aspect, Summerson noticed that Serlio put an engraved plate about the illustrations of Five Orders on his book and explained that this plate looked *"as the ancient dramatists used to preface their plays with a prologue telling the audiences what it was all going to be about"*.[77] But in Summerson's own understanding these engraved images *"……make the Orders seems as categorical in the grammar of architecture as, say, the four conjugations of verbs in the grammar of the Latin language."*[78] Clearly both Serlio and Summerson assimilated architecture with language. However, although Serlio gave the very detailed depiction to the Orders, still no one can undertake a systematic review without mentioning Vitruvius' contribution. Summerson paid attention to this point, too. He recorded several sets of prevalent grammars of the Orders usage as well. These include Vitruvius' personalization: *"The Doric he saw as exemplifying 'the proportion, strength and grace of a man's body'... The Ionic, for him, was characterized by 'feminine slenderness' and the Corinthian as imitating 'the slight figure of a girl'."* [79] and Serlio's recommendations, *"The Doric, he says, should be used for churches dedicated to the*

[76] Summerson, John., *The Classical Language of Architecture*, (London, Methuen & Co Ltd, 1964), p.10.
[77] Ibid, p.10.
[78] Ibid, p.10.
[79] Ibid, p.12.

more extraverted male saints—St Paul, St Peter or St George and to militant types in general; the Ionic for matronly saints—neither too tough nor too tender and also for men of learning; the Corinthian for virgins, most especially the Virgin Mary. To the Composite Serlio awards no special characteristics, while the Tuscan he finds suitable for fortification and prisons."[80] (Table: 2-1)

Orders	Tuscan	Doric	Ironic	Corinthian	Composite
Personalization		Strength and Grace of Man's Body	Slenderness of Feminine	Slight Figure of a Girl	
Fitted Functions	For Fortification and Prisons	Churches for the Male Saints and to Militant Types	For Matronly Saints—Neither too Tough nor too Tender and also for Men of Learning	For Virgins, most Especially the Virgin Mary	No Special Features
Table: 2-1, the Personalization and Fitted Functions of the Five Orders					

Based on the vivid descriptions of the Orders' physical appearances, Summerson further explained their usages. He believed that the Roman people have endowed the Columns with the most crucial role in architecture. As he argued that *"They invented ways of using the orders not merely as ornamental enrichments for their new types of structure but as controls. The orders are, in many Roman buildings, quite useless structurally but they make their buildings expressive, they make them speak; they conduct the building, with sense and ceremony and often with great elegance, into the mind of the beholder."*[81], this is the role of dominance and spirit. Concentrating on the

[80] Ibid, p.13.
[81] Ibid, p.14.

implementation, this power of reign embodies as *"the degrees of integration of an Order in a structure"*[82] and *"the intercolumniation"*[83]. The former group introduced a series of different relationship between the columns and the structures. They were named as 'detached columns', 'three-quarter-columns', 'half columns' and 'pilasters', which implies four strengths of shadow, four degrees of expression and four kinds of atmosphere. The later one was about five different inter-spaces between the columns, which were recorded by Vitruvius and reckoned by the diameter of the columns. They were known as the Pycnostyle (1.5 diameters), Systyle (2 diameters), Eustyle (2.25 diameters), Diastyle (3 diameters) and Araeostyle (4 diameters). Summerson assimilated them with the 'step and music' because in his opinion the intercolumniation expresses the tempo of a building. Actually from his comparisons – either the Pycnostyle as a halt, the Systyle as a quick march, the Eustyle as an easy dignified walk and the Araeostyle as a very long stride, or the Pycnostyle less as presto, the Systyle as allegro, the Eustyle as andante, Diastyle as adagio and the Araeostyle less as largo, the intercolumniations endow the classical architecture with different emotions[84] (Table: 2-2).

Intercolumniations	Pycnostyle	Systyle	Eustyle	Diastyle	Araeostyle
Spans of the bay	1.5 Ø	2 Ø	2.25 Ø	3 Ø	4 Ø
Music Rhythms	Presto	Allegro	Andante	Adagio	Largo
Step Rhythms	Halt	Quick March	Easy Dignified Walk		Very Long Stride
Table: 2-2, the Characteristics of the Intercolumniations					

[82] Ibid, p.14.
[83] Ibid, p.18.
[84] Ibid, p.14, pp.18-19.

Following this fundamental knowledge, Summerson subsequently analyzed post-Renaissance architecture tendencies. In his opinion, the eminent architects of the 16th century could be appraised as the linguists who spoke the orthodox classical language of architecture because they copied or developed the classical Orders inventively. The Baroque and Rococo, however, are seen as beautiful and fashionable rhetoric because of their distortions of the Orders.

In summary, the classical language of architecture developed with the Orders, by the Orders and for the Orders. The five sorts of elaborate columns unquestionably dominated the appearance, function, meaning and all the aspects of architecture in western world. To Romans, Summerson believed that *"they felt no building could communicate anything unless the orders were involved in it. To them the Orders were architecture."*[85], on this point probably so say himself (Figure: 2-6).

[85] Ibid, p.14.

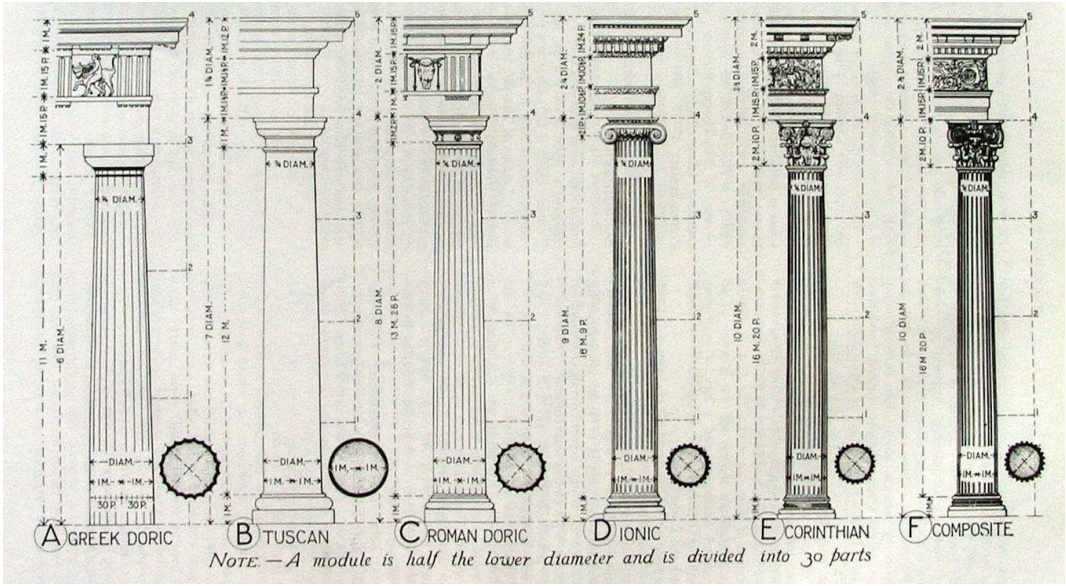

Figure: 2-6, Classical Orders (Including Two Different Doric Orders)

2.3.2 The Architectural Language of Modernism and Postmodernism

The continual study of the meaning of classical architecture evoked some scholars to think about whether architecture possesses deeper language attributes. Therefore, the theory of linguistics was examined as a vehicle for the greater understanding and interpretation of the language of architecture. This approach flourished with the plethora of architectural styles in the second half of the 20th century.

Although all four pioneers of the modernism movement – Walter Gropius, Frank Lloyd Wright, Le Corbusier and Mies Van Der Rohe did not treat of the study of architecture language as their priority, the modernism movement was the catalyst of the present research of the architecture language. It is the cold machine-made physical appearances,

the stiff unmeaning styles and the emotionless built environment that begot the severe public averseness, and meanwhile prompted many radical architects to give up the relentless design principles. Hence, since the 1960s, architects began to search for how to grant buildings more diverse meanings again. Some wanted to modify Modernism gently and smoothly; what they created was formal, elegant and grand architecture, such as Louis Kahn's Salk Institute (1959-65), Minoru Yamasaki's World Trade Center (1973), Alvar Aalto's Finlandia Hall (1970-5), and James Stirling's Stuttgart Staatagalerie (1977-84), etc. (Figure: 2-7, 2-8, 2-9, 2-10). On the contrary, another group launched an absolute overthrow towards the Modernism. They sought the inspirations and furors from the historical shadow, dramatic pleasure and unordered chaos, which was well-known as the Tendencies of Postmodernism and Deconstruction in architecture. What they contributed for the world was eye-catching architecture, such as Renzo Piano and Richard Rogers' Centre National d'Art et de Culture Georges Pompidou (1971-7), Charles Moore's Piazza Italia (1975), Philip Johnson's AT&T Building (1984), Michael Graves' Municipal Office for the City of Portland (1980-2), and Frank Gehry's Guggenheim Museum (1992-7), etc.[86] (Figure: 2-11, 2-12, 2-13, 2-14, 2-15). Both of these two branches of architecture design have evolved ever since and have sub-developed to a number of new styles and tendencies. Even at present, it is almost impossible to summarize what '–ism' the new architecture should belong to. Undoubtedly, the world is undergoing a significant change again since the anywhere-Movement of Modernism. Companied with the completions of all of these

[86] Information from: Edited by Cruickshank, Dan., *Sir Banister Fletcher's A History of Architecture, Twentieth Edition*, op. cit.,

extraordinary buildings, architectural styles were never changed too fast to adapt. People's emotion was never disordered too consuming to recover. The meaning of architecture was never too powerful and complex to follow. This intricate architectural phenomenon intrigued a group of theorists to study it and to find out the inner regulation and essence of the confusion. Many of their contributions established the professional foundation of the present architectural language theory.

Figure: 2-7, Salk Institute, USA; 2-8, World Trade Center, USA;
2-9, Finlandia Hall, Finland; 2-10, Stuttgart Staatagalerie, Germany

Figure: 2-11, Centre Pompidou, France; 2-12, Piazza Italia, USA; 2-13, AT&T Building, USA; 2-14, Portland Building, USA; 2-15, Guggenheim Museum, Spain

Study of modernism in architecture and its several variations is attributed to the work of critics. Sven Hesselgren, Charles Jencks and Geoffrey Broadbent contributed the common principles of the communication of architecture, and explored the languages of Post-Modernism, Late-Modernism and Neo-Modernism.

Sven Hesselgren [87] in his book '*The Language of Architecture*' purports an architectural language that is about the general scope of architecture rather than modernism or post-modernism. On the one hand, for explaining how architecture influences people's emotions, the knowledge of psychology was operated as a

[87] The details see: Hesselgren, Sven., *The Language of Architecture, Volume 1, Volume 2* (London, Applied Science Publishers Ltd, 1969),

methodology; on the other hand, for systematization of the analysis, he decompounded the architectural entity to some abstract archetypes with classical architectural theory. What he achieved is not an integral analysis of the structure and meaning of language but a detailed psychoanalysis about what the abstract elements of architecture – such as colour, light, texture, material, etc. – can express; what people can perceive from architecture by sight, sound, taste, touch and smell; and how people's emotions are evoked and effected in the physiological process. Hesselgren therefore focused on the semantics of architecture.

Charles Jencks (1931 –) – one of the most forceful architecture critics of the 20th century – considered the complicated and numerous architectural phenomena with help of dialectical philosophy and the theory of linguistics. He embodied his view of the language of architecture specifically related to Post-Modernism in *The Language of Post-Modern Architecture*. Jencks further developed the languages of Late-Modernism and Neo-Modernism in *The New Moderns, From Late To Neo-Modernism*. Abstracting the theory, Jencks' language can be studied from four relative parts: the general modes of architectural language and the other three languages.

In the purpose of finding out a common architectural communication mode, Jencks introduced four typical linguistic concepts – the Metaphor, Words, Syntax and Semantics, into the field of architectonics. First, the 'metaphor' means a normal subconscious phenomenon where *"...people invariably see one building in terms of*

another, or in terms of a similar object…"[88] which, in Hesselgren's theory was described as the relationship between meaning and imagination. It is a common reflection that happens when people behold any visual signal and symbol. Second, 'words' in architecture were considered as the constructional units: *"To make the linguistic analogy more complete, we could call these units architectural 'words'. There are dictionaries of architecture which define the meanings of these words: doors, windows, columns, partitions, cantilevers, and so forth."*[89] The 'words' convey the relative stable meaning, and also come from the 'metaphor', for instance in Jenks' words: "*…yesterday's creative metaphor becomes today's tired usage, a conventional word."*[90] Third, 'syntax' can be learned as some basic laws of construction. Jencks explained it by comparing with phonetics: "*…a building has to stand up and be put together according to certain rules, or methods of joinery. The law of gravity and geometry dictate such things as an up and down, a roof and floor and various storeys in between, just as the law of sound and speech formation dictate certain vowels, consonants and way of speaking them. These compelling forces create what could be called a syntax of architecture – that is, the rule for combining the various words of door, window, wall, and so forth."*[91] Finally, Jenks applied the classical Orders to interpret 'semantics', whereby the different styles represent different characters and render the distinguishing atmosphere. For simplicity and clearness, a smart three axes reference system (masculine-feminine, ornamented-straightforward, complex-simple)

[88] Jencks, Charles., *The Language of Post-Modern Architecture*, op. cit., p.39.
[89] Ibid, p.54.
[90] Ibid, p.54.
[91] Ibid, p.54.

of Vitruvius was quoted (Figure: 2-16[92]).

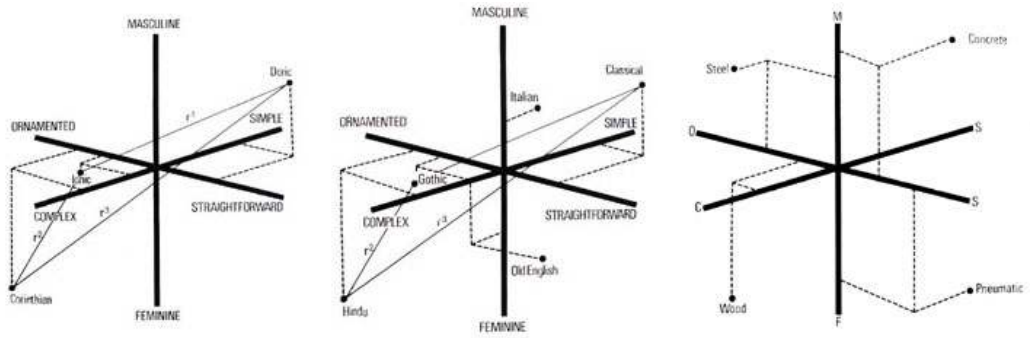

Figure: 2-16, Three Axes Reference System

Based on the general knowledge above, Jencks introduced and explored three theories related to Post-Modernism, Late-Modernism and Neo-Modernism. The key point of post-modern language is a couple of linguistic concepts – *'signifier and signified'*, which were brought forward in 1910s by Swiss linguist – Ferdinand de Saussure – a principle founder of structural linguistics. Enlightened by the view that the original expression of a word (signifier) can be understood with several quite different meanings (signified), the idea of 'double-coding' was highlighted. Jencks identifies that: *"The primary strategy architects have created to articulate the pluralism of culture is that of double-coding: mixing their own professional tastes and technical skills with those of their ultimate clients – the inhabitant."*[93] He implied that the mixture of meanings of post-modern architecture could be read by different groups of people on different levels – high and low, elite and popular. So, contrasting with the monism of the pure modern, the pluralism of post-modernism is immediately obvious.

[92] Ibid, pp.60, 61.
[93] Ibid, p.12.

As an important contemporaneous genre with post-modernism, late-modernism revealed a quite different tendency of the art of architecture. Compared to the romance and representationalism of post-modern architecture, late-modernism approached the pragmaticism of extreme logic and abstract. In fact, what the late-modernist pursued was a respectful modification rather than a revolution of the international style: *"The late modernists have, for the most part, taken the theories and style of their precursors to an extreme and in so doing produced an elaborated or mannered Modernism."*[94] Different from the semantics study of post-modernism, Jencks paid attention to the rhetoric study of late-modernism. His twelve rhetoric techniques can be divided into two parts, first, the study of personal design fashions from a linguistic viewpoint – including *'Synecdoche, Hyperbole, Syncopation, Oxymoron, Reductive and Malapropism'* - and secondly, a collection of extraordinary construction forms – including *'Structure Ornament, Extreme Isotropic Space, Extreme Repetition, Slick Skin, Enclosed Skin Volumes and Sculptural Form'*.[95]

Jencks' exploration of the so-called Neo-Modernism concentrated on the Deconstructionists, such as Frank Gehry, Peter Eisenman, Richard Meier, Daniel Libeskind, Bernard Tschumi, etc. Matching their enthusiastic innovation and reinterpretation of their predecessors, the Neo-Modernists practiced incredible dramas of construction. Jencks, therefore used more obscure rhetoric phrases -*'Hermetic Coding, Disjunctive Complexity, Explosive Space, Frenzied Cacophony, Thematised*

[94] Jencks, Charles., *The New Moderns, From Late To Neo-Modernism, Academy Editions* (London, Academy Group Ltd. 1990), p.43.
[95] Ibid, pp.69-90.

Ornament, Traces of Memory, Comic Destructive and Non-Place Sprawl' [96] - to explain the merriment, frenzy, tumult and jocosity of the Deconstructions.

Broadbent didn't agree with Jencks' idea of *"analogy"* in architectural language study. In his essay – The Deep Structures of Architecture, he claimed that *"any attempt to describe architecture in linguistic terms can only be achieved at the level of analogy or, more particularly, of metaphor. Certain early attempts to equate phoneme (the smallest unit of speech-sound) with, say, brick (the smallest unit of construction); morpheme (the smallest whole unit of meaning) with, say, window (a small unit of construction) and so on, were naive; buildings are not constructed from the elements of language, nor are there clear, obvious and generally agreed correspondences between the elements of architecture and the elements of language."*[97] Based on this fundamental opinion, he went through linguistics study and tried to extract the deep structures behind the surficial materiality of architecture.

Chomsky's study on syntax of spoken & written language inspired Broadbent. Following Chomsky's opinion that *"each of us possesses a basic understanding, which may be inborn, of certain fundamental relationships between ourselves and the world outside ourselves which, in Aspects particularly, he describes as deep structures;"*[98], he class the most essential functions into three categories:

[96] Ibid, pp.269-285.
[97] Broadbent, Geoffrey. 'The Deep Structures of Architecture'. *Signs, symbols, and Architecture*, edited by Geoffrey Broadbent, Richard Bunt, Charles Jencks, (John Wiley & son, 1980) p. 126.
[98] Ibid, p. 127.

1. *"Provision of a comfortable environment in which temperature, humidity, lighting and other conditions can be controlled as necessary;"*
2. *"Protection of particular activities from a hostile external environment;"*
3. *"Provision of symbols to stimulate the emotional, imaginative, fantastic or religious aspects of life;"*[99]

by analogizing with the deep grammar structure of written sentences. Furthermore, based on this achievement, he put forward his four deep structures in architecture:

- *"The building as container for human activities"*
- *"The building as modifier of the given climate"*
- *"The building as cultural symbol"*
- *"The building as consumer of resources"*[100]

And four modes of designing:

- *"Pragmatic design"*
- *"Typologic design"*
- *"Analogical design"*
- *"Canonic design"*[101]

which *"either separately or in combination, seem to underlie all the ways in which architectural form has been, or can be generated"*.[102]

Clearly, comparing with Jencks' straight analogy between building units and words,

[99] Ibid, pp. 131-133.
[100] Ibid, p. 137.
[101] Ibid, pp. 139-145.
[102] Ibid, pp. 145-146.

phrase or sentence, Broadbent's analogy is more abstract to touch the latent rules behind the various entities of architecture. His four deep structures are actually four basic functions of building, from which, as he said, *"a full theory of architecture begins to emerge."*[103]

In brief, although some scholars, like Broadbent disagreed with him, Jencks' theory on architectural language was one of the most systematic and understandable. Corresponding to its outstanding fame, the common principles have become a typical model for further study, and are widely accepted as a stereotype of the language of architecture. Indeed, analyzing the deeper meaning of the construction elements and the entity to constitute a rhetoric list or grammar book were even the general characteristics of the architectural language of Modernism and Postmodernism. Their works became well known for citing the thinking of humanity and the theory of linguistics.

2.3.3 The Pattern Language

Contemporaneously with Jencks' work, Christopher Alexander (1936 –) created a set of meticulous networks including 253 Patterns in *A Pattern Language*. In Alexander's work, five particular attributes: Handling, Summarizing, Cooperating, Evolving and Humanizing can be abstracted. The first emphasizes that all the patterns are easy to grasp and to operate by everyone in their daily life. Alexander clarified: *"You can use it to work with your neighbors, to improve your town and neighborhood. You can use it to*

[103] Ibid, p. 137.

design a house for yourself, with your family; or to work with other people to design an office or a workshop or a public building like a school. And you can use it to guide you in the actual process of construction."[104] The second attribute means that the 253 patterns are summarized from the most repetitive but paramount problems. According to what Alexander mentioned in the book, it is that *"The elements of this language are entities called patterns. Each pattern describes a problem which occurs over and over again in our environment, and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice."*[105]. The third claims that although all the patterns were divided into three branches: *Towns, Buildings and Construction*, they should be used cooperatively as a whole entity. Focusing on this point, Alexander argued: *"Each pattern is connected to certain 'larger' patterns which come above it in the language; and to certain 'smaller' patterns which come below it in the language. The pattern helps to complete those larger patterns which are 'above' it, and is itself completed by those smaller patterns which are 'below' it."*[106] The fourth provides a possibility to develop more patterns not only by scholars but also by users themselves. Alexander hoped: *"……, of course, that many of the people who read, and use this language, will try to improve these patterns – will put their energy to work, in this task of finding more true, more profound invariants – and we hope that gradually these more true patterns, which are slowly discovered, as time goes on, will enter a common language, which all of us can*

[104] Alexander, Christopher., Ishikawa, Sara., Silverstein, Murray., with Jacobson, Max., Fiksdahl-king, Ingrid., Angel, Shlomo., *A Pattern Language, Towns Buildings Construction* (New York, Oxford University Press, 1977), p.x.
[105] Ibid, p.x,
[106] Ibid, p.xii,

share."[107] He also pointed out that *"...the patterns are very much alive and evolving. ...all 253 of them – and are therefore all tentative, all free to evolve under the impact of new experience and observation."*[108] The fifth is actually a summarization of the pattern language's essence. On the one hand, Alexander thought that the patterns were a *"...archetypal core of all possible pattern language, which can make people feel alive and human."*[109], on the other hand, so many trivial but vivid daily details were noticed and noted as some corresponsive patterns, such as:

In the *Towns* section,

33, night life

58, carnival

63, dancing in the street,

74, animals

94, sleeping in public

In the *Buildings* section,

125, stair seat

147, communal eating

170, fruit trees

178, compost

203, child caves

In the *Construction* section,

222, low sill

[107] Ibid, p.xv,
[108] Ibid, p.xv,
[109] Ibid, p.xvii.

235, soft inside walls

243, sitting wall

All the 253 patterns summarized in Alexander's book were organized in an extreme complex network. It means that every single pattern connects with both its upper-larger patterns and its lower-smaller patterns. Alexander has given a clear introduction about how to use the patterns. The basic principle is the up-down connection. The first step for the operators should be scanning the list of patterns and choosing the first group of patterns that can give an overall description of the project. Then they can read through the interpretations of the patterns and find out both the related upper patterns at the beginning and the lower ones at the end. Ignoring the upper patterns and only noting the lower patterns is the key. Therefore they merely go through to the related lower-small patterns. Certainly in the interpretations of this group of lower-patterns they can also find the sub-lower ones, what they need to do is quite same with the former. At the end of the process, the operators will definitely get a pretty long and complicated list (or a net) of patterns. All of them form the pattern language of the operators themselves for just the special project. Of course according to the fourth character above – Evolving, the operators can modify the existing patterns and add the new ones into the system. On this point, the pattern language will grow up with every time it's practiced. The more the patterns are implemented, the more comprehensive they are. It is a living system.

However, beside the every-time-different webs introduced therein before, Alexander gave the patterns another more structural framework, which organizes all the 253 patterns together. Based on the three major scopes – *the Towns, Buildings and Construction*, he classified the patterns to many groups and connected them by design and building logic. In Alexander's book he only explained the relationships between groups rather than figured out a clear framework. But through carefully study it can be assuredly charted (Table: 2-3, 2-4, 2-5).

The attention to daily life and details promotes the careful consideration and understanding of the function and user of a building by an architect. Nevertheless, despite its gracious intentions, Alexander's 'new design bible' courted endless controversy within the architectural profession and academia. Because Alexander wanted to establish a set of timeless, placeless and exhaustive building principles – that were simple to implement by everyone – this extreme ambition inevitably resulted in contradictions. Subsequently, since the 1970's, an intense debate between Alexander's' supporters and opponents has never ceased and clusters of correlative papers were published in the 'post-pattern language period'.

Some architects supported Alexander by practicing the *Pattern Language* in realized design projects. Indeed, Mulfinger[110] described how they helped their clients who wanted to use the *Pattern Language* to complete a new house in a cheaper and more

[110] Mulfinger, Dale. 'Putting a Pattern Language to Work, an Inspired Approach Achieves High-Quality Space on a Tight Budget'. *Fine Home Building*, Vol. 1987, No. 38, Spring, (1987), pp.49-53.

<table>
<tr><td>REGIONAL LEVEL</td><td colspan="4">1. INDEPENDENT REGIONS</td></tr>
<tr><td></td><td colspan="2">REGIONAL POLICIES
2. THE DISTRIBUTION OF TOWNS
3. CITY COUNTRY FINGERS
4. AGRICULTURAL VALLEYS
5. LACE OF COUNTRY STREETS
6. COUNTRY TOWNS
7. THE COUNTRYSIDE</td><td colspan="2">MAJOR STRUCTURE
8. MOSAIC OF SUBCULTURES
9. SCATTERED WORK
10. MAGIC OF THE CITY
11. LOCAL TRANSPORT AREAS</td></tr>
<tr><td rowspan="4">COMMUNITY LEVEL</td><td colspan="4">COMMUNITY & NEIGHBOURHOOD
12. COMMUNITY OF 7000
13. SUBCULTURE BOUNDARY
14. IDENTIFIABLE NEIGHBORHOOD
15. NEIGHBORHOOD BOUNDARY</td></tr>
<tr><td colspan="4">FOUNDAMENTAL PRINCIPLE
21. FOUR-STORY LIMIT
22. NINE PER CENT PARKING
23. PARALLEL ROADS
24. SACRED SITES
25. ACCESS TO WATER
26. LIFE CYCLE
27. MEN AND WOMEN</td></tr>
<tr><td>TRNASPORTATION</td><td>AMENITIES</td><td>LIVING</td><td>WORKING</td></tr>
<tr><td>TRANSPORTATION
16. WEB OF PUBLIC TRANSPORTATION
17. RING ROADS
18. NETWORK OF LEARNING
19. WEB OF SHOPPING
20. MINI-BUSES</td><td>LOCAL CENTERS
28. ECCENTRIC NUCLEUS
29. DENSITY RINGS
30. ACTIVITY NODES
31. PROMENADE
32. SHOPPING STREET
33. NIGHT LIFE
34. INTERCHANGE

OPEN LAND
58. CARNIVAL
59. QUIET BACKS
60. ACCESSIBLE GREEN
61. SMALL PUBLIC SQUARES
62. HIGH PLACES
63. DANCING IN THE STREET
64. POOLS AND STREAMS
65. BIRTH PLACES
66. HOLY GROUND</td><td>HOUSING
35. HOUSEHOLD MIX
36. DEGREES OF PUBLICNESS
37. HOUSE CLUSTER
38. ROW HOUSES
39. HOUSING HILL
40. OLD PEOPLE EVERYWHERE</td><td>WORK COMMUNITY
41. WORK COMMUNITY
42. INDUSTRIAL RIBBON
43. UNIVERSITY AS A MARKETPLACE
44. LOCAL TOWN HALL
45. NECKLACE OF COMMUNITY PROJECTS
46. MARKET OF MANY SHOPS
47. HEALTH CENTER
48. HOUSING IN BETWEEN</td></tr>
<tr><td>LOCAL LEVEL</td><td>LOCAL PATHS AND ROADS
49. LOOPED LOCAL ROADS
50. T JUNCTIONS
51. GREEN STREETS
52. NETWORK OF PATHS AND CARS
53. MAIN GATEWAYS
54. ROAD CROSSING
55. RAISED WALK
56. BIKE PATHS AND RACKS
57. CHILDREN IN THE CITY</td><td>SMALLER COMMON LAND
67. COMMON LAND
68. CONNECTED PLAY
69. PUBLIC OUTDOOR ROOM
70. GRAVE SITES
71. STILL WATER
72. LOCAL SPORTS
73. ADVENTURE PLAYGROUND
74. ANIMALS</td><td></td><td></td></tr>
<tr><td>SMALLEST UNITS</td><td colspan="2">TRANSFORMATION OF FAMILIES
75. THE FAMILY
76. HOUSE FOR A SMALL FAMILY
77. HOUSE FOR A COUPLE
78. HOUSE FOR ONE PERSON
79. YOUR OWN HOME</td><td>TRANSFORMATION OF WORKSHOPS & OFFICES
80. SELF-GOVERNING WORKSHOPS AND OFFICES
81. SMALL SERVICES WITHOUT RED TAPE
82. OFFICE CONNECTIONS
83. MASTER AND APPRENTICES
84. TEENAGE SOCIETY
85. SHOPFRONT SCHOOLS
86. CHILDREN'S HOME</td><td>TRANSFORMATION OF SHOPS
87. INDIVIDUALLY OWNED SHOPS
88. STREET CAF
89. CORNER GROCERY
90. BEER HALL
91. TRAVELER'S INN
92. BUS STOP
93. FOOD STANDS
94. SLEEPING IN PUBLIC</td></tr>
</table>

Table: 2-3, the Pattern Language – Towns

PRIMIARY DESIGN

GENERAL LAYOUT

95. BUILDING COMPLEX
96. NUMBER OF STORIES
97. SHIELDED PARKING
98. CIRCULATION REALMS
99. MAIN BUILDING
100. PEDESTRIAN STREET
101. BUILDING THOROUGHFARE
102. FAMILY OF ENTRANCES
103. SMALL PARKING LOTS

FIXING THE POSITION

104. SITE REPAIR
105. SOUTH FACING OUTDOORS
106. POSITIVE OUTDOOR SPACE
107. WINGS OF LIGHT
108. CONNECTED BUILDINGS
109. LONG THIN HOUSE

DEVELOPED DESIGN

THE VOLUMES OF THE BUILDING AND THE SPACE

110. MAIN ENTRANCE
111. HALF-HIDDEN GARDEN
112. ENTRANCE TRANSITION
113. CAR CONNECTION
114. HIERARCHY OF OPEN SPACE
115. COURTYARDS WHICH LIVE
116. CASCADE OF ROOFS
117. SHELTERING ROOF
118. ROOF GARDEN

PATHS & SQUARES

119. ARCADES
120. PATHS AND GOALS
121. PATH SHAPE
122. BUILDING FRONTS
123. PEDESTRIAN DENSITY
124. ACTIVITY POCKETS
125. STAIR SEATS
126. SOMETHING ROUGHLY IN THE MIDDLE

GRADIENTS OF SPACE

127. INTIMACY GRADIENT
128. INDOOR SUNLIGHT
129. COMMON AREAS AT THE HEART
130. ENTRANCE ROOM
131. THE FLOW THROUGH ROOMS
132. SHORT PASSAGES
133. STAIRCASE AS A STAGE
134. ZEN VIEW
135. TAPESTRY OF LIGHT AND DARK

VITAL ROOMS & AREAS (HOME)

136. COUPLE'S REALM
137. CHILDREN'S REALM
138. SLEEPING TO THE EAST
139. FARMHOUSE KITCHEN
140. PRIVATE TERRACE ON THE STREET
141. A ROOM OF ONE'S OWN
142. SEQUENCE OF SITTING SPACES
143. BED CLUSTER
144. BATHING ROOM
145. BULK STORAGE

VITAL ROOMS & AERAS (PUBLIC BUILDINGS)

146. FLEXIBLE OFFICE SPACE
147. COMMUNAL EATING
148. SMALL WORK GROUPS
149. RECEPTION WELCOMES YOU
150. A PLACE TO WAIT
151. SMALL MEETING ROOMS
152. HALF-PRIVATE OFFICE

DETAILED DESIGN

OUTSIDE OF THE BUILDING

OUTBUILDINGS

153. ROOMS TO RENT
154. TEENAGER'S COTTAGE
155. OLD AGE COTTAGE
156. SETTLED WORK
157. HOME WORKSHOP
158. OPEN STAIRS

GARDENS

169. TERRACED SLOPE
170. FRUIT TREES
171. TREE PLACES
172. GARDEN GROWING WILD
173. GARDEN WALL
174. TRELLISED WALK
175. GREENHOUSE
176. GARDEN SEAT
177. VEGETABLE GARDEN
178. COMPOST

BETWEEN THE BOTH SIDES

KNITTING THE OUTSIDE & INSIDE

159. LIGHT ON TWO SIDES OF EVERY ROOM
160. BUILDING EDGE
161. SUNNY PLACE
162. NORTH FACE
163. OUTDOOR ROOM
164. STREET WINDOWS
165. OPENING TO THE STREET
166. GALLERY SURROUND
167. SIX-FOOT BALCONY
168. CONNECTION TO THE EARTH

INSIDE OF THE BUILDING

MINOR ROOMS & ALCOVES

179. ALCOVES
180. WINDOW PLACE
181. THE FIRE
182. EATING ATMOSPHERE
183. WORKSPACE ENCLOSURE
184. COOKING LAYOUT
185. SITTING CIRCLE
186. COMMUNAL SLEEPING
187. MARRIAGE BED
188. BED ALCOVE
189. DRESSING ROOM

FINE TONING THE ROOMS & ALCOVES

190. CEILING HEIGHT VARIETY
191. THE SHAPE OF INDOOR SPACE
192. WINDOWS OVERLOOKING LIFE
193. HALF-OPEN WALL
194. INTERIOR WINDOWS
195. STAIRCASE VOLUME
196. CORNER DOORS

DEPTH OF THE WALLS

197. THICK WALLS
198. CLOSETS BETWEEN ROOMS
199. SUNNY COUNTER
200. OPEN SHELVES
201. WAIST-HIGH SHELF
202. BUILT-IN SEATS
203. CHILD CAVES
204. SECRET PLACE

Table: 2-4, the Pattern Language – Buildings

PREPARATION	**STRUCTURE PHILOSOPHY** 205. STRUCTURE FOLLOWS SOCIAL SPACES 206. EFFICIENT STRUCTURE 207. GOOD MATERIALS 208. GRADUAL STIFFENING	
	STRUCTURE LAYOUT 209. ROOF LAYOUT 210. FLOOR AND CEILING LAYOUT 211. THICKENING THE OUTER WALLS 212. COLUMNS AT THE CORNERS 213. FINAL COLUMN DISTRIBUTION	
PRIMARY CONSTRUCTION	**MAIN FRAME** 214. ROOT FOUNDATIONS 215. GROUND FLOOR SLAB 216. BOX COLUMNS 217. PERIMETER BEAMS 218. WALL MEMBRANES 219. FLOOR-CEILING VAULTS 220. ROOF VAULTS	**THE SUBSIDIARY PATTERNS** 226. COLUMN PLACE 227. COLUMN CONNECTION 228. STAIR.VAULT 229. DUCT SPACE- 230. RADIANT HEAT 231. DORMER WINDOWS 232. ROOF CAPS
	OPENINGS 221. NATURAL DOORS AND WINDOWS 222. LOW SILL 223. DEEP REVEALS 224. LOW DOORWAY 225. FRAMES AS THICKENED EDGES	
DETAILED CONSTRUCTION	**SURFACE & INDOOR DETAILS** 233. FLOOR SURFACE 234. LAPPED OUTSIDE WALLS 235. SOFT INSIDE WALLS 236. WINDOWS WHICH OPEN WIDE 237. SOLID DOORS WITH GLASS 238. FILTERED LIGHT 239. SMALL PANES 240. HALF-INCH TRIM	**OUTDOOR DETAILS** 241. SEAT SPOTS 242. FRONT DOOR BENCH 243. SITTING WALL 244. CANVAS ROOFS 245. RAISED FLOWERS 246. CLIMBING PLANTS 247. PAVING WITH CRACKS BETWEEN THE STONES 248. SOFT TILE AND BRICK
COMPLETION	**ORNAMENTS, COLOR AND LIGHT** 249. ORNAMENT 250. WARM COLORS 251. DIFFERENT CHAIRS 252. POOLS OF LIGHT 253. THINGS FROM YOUR LIFE	

Table: 2-5, the Pattern Language – Construction

efficient way. In his paper – *Putting a Pattern Language to Work, an Inspired Design Approach Achieves High-Quality on a Tight Budget* he appreciated: *"Alexander's book enable us, as architects, to communicate effectively with our clients, discovering together a creative vocabulary where good design could happen in a natural way."*[111]. Contrarily, on the other example, Thallon and Edrington[112] recorded how they not only introduced the patterns to their clients, but also propose ameliorations. In their paper – *Working with a Pattern Language, How an Oregon Architectural Firm Uses this Benchmark Book to Design House*, they carefully depicted three critics, which are difficult to integrate several patterns for lay designers, failed to use the common building materials and dated without revised edition. Weston[113], however, argues that the *Patterns* are inapplicable. Comparing Alexander's own work on the New Eishin University Campus near Tokyo with another Japanese school by the architects Team Zoo, he highlights the crudeness and helplessness of the Patterns in a different culture with different traditions.

What is more, from a theoretical standpoint, some rational scholars studied the *Pattern Language* without prejudice. Salingaros[114], in the paper – *the Structure of Pattern Languages*, analyzed how the Patterns come into our lives, how the Patterns work with each other and what a kind of hierarchical connections the Patterns possess. In doing so,

[111] Ibid, p.53.

[112] Thallon, Rob and Edrington, David. 'Working with a Pattern Language, How an Oregon Architectural Firm Uses this Benchmark Book to Design House'. *Fine Home Building*, Vol. 1986-1987, No. 36, Dec./Jan., (1987), pp.51-55.

[113] Weston, Richard. 'Poetic Patterns'. *Architects' Journal*, Vol. 186, No. 44, Nov. 4, (1987), pp.32-39.

[114] Salingaros, Nikos. 'A. The Structure of Pattern Languages'. *ARQ -London-*, Vol. 2000 4, No. 2, (2000), pp.149-161.

Salingaros identified that the Pattern Language would benefit from the incorporation of some medium cross-scale patterns. In the paper – *the Pattern Language and Its Enemies,* Dovey[115], on the other hand, enumerated a series of forces – *'Dualism, Positivism, Empiricism, Capitalism, Consumerism, Individualism, Postmodernism, Formalism, Relativism, Gigantism, Puritanism, Totalitarianism and Pessimism'*, which oppose and even damage the implementation of *A Pattern Language*. Additionally, Gelernter[116] affirmed the advantages of the Patterns, but scrutinized the latent contradiction between the Patterns and localized traditions in his *Christopher Alexander and Pattern Language*.

On the contrary, some scholars vilipended Alexander's work with very offending words, which even have surpassed the scope of academic dispute. The most conspicuous two are Saunders and one of Alexander's colleagues at Berkeley – Protzen. Alexander wrote the articles to refute their viewpoints measure for measure respectively. This was reckoned as the climax of the controversy.[117]

As an academic thinking genre, it is impossible that *A Pattern Language* could have been perfected at its initiation. Fair evaluation and rational analysis are nutritional to

[115] Dovey, Kimberly. 'The Pattern Language and Its Enemies'. *Design Studies*, Vol. 1990 11, No. 1, Jan. (1990), pp.3-9.

[116] Gelernter, Mark. 'Christopher Alexander and Pattern Language'. *Architects' Journal*, Vol. 177, No. 1, Jan. 5, (1983), pp.12-16.

[117] The details see, Saunders, William S. 'A Pattern Language'. *Harvard Design Magazine*, Winter/Spring, 2002, No. 16, <http://mitpress.mit.edu/HDM>;
Protzen, Jean-Pierre. 'The Poverty of the Pattern Language, Value in Design: a Dialogue'. *Design Studies*, 1980, Vol. 1, No. 5, Jul. p.291-298.

uncover and fine-tune the imperfections and to develop the merits; however, what the unreasonable vituperation contributed was only to shackle possible academic advancement. Indeed, *A Pattern Language* is a dictionary, which can't be ignored in the development and understanding of language within the built environment.

2.3.4 The Urban Language

On a larger scale, some urban designers and planners – such as Kevin Lynch and Gordon Cullen – devoted themselves to a kind of quasi-pattern language study, and put forward some different theories.

Based on the most paramount key image – Path, Kevin Lynch (1918 – 1984) developed another four important image elements of city in *The Image of the City* in 1960. Similar to Alexander, but 17 years earlier than *Pattern Language*, Lynch attempted to summarize some representational words as the basic principles of city creation. He suggested that – Path, Nodes, District, Edges and Landmarks can't be ignored in forming an identifiable and comfortable urban district. Although Lynch never gave his research a name relating to 'language', there are still many similar aspects. For instance, though the structure of the system is simpler and the number of divisions is less than that developed by Alexander, Lynch's work revealed these five powerful patterns evident at the macro-scale of urban form. What's more, Lynch also places an emphasis on the inter-relatedness of the parts and a strong humanist spirit can also be found. This is evidenced in his case study of Florence, where *"...every scene is instantly*

recognizable, and brings to mind a flood of associations. Part fits into part. The visual environment becomes an integral piece of its inhabitants' lives. It is by no means perfect, even in terms of imageability... but there seems to be a simple and automatic pleasure, a feeling of satisfaction, presence and rightness..."[118] Dramatically, these thoughts are analogous with Alexander's *Pattern Language*.

One year after *The Image of the City*, the British scholar and planner, Gordon Cullen (1914 – 1994), published his paramount work – *The Concise Townscape*. It is similar to the scope of Lynch's study and Alexander's organizing system. Cullen also stressed the need to create excitement and drama in the city. Contrasting with Lynch's five images, Cullen developed a pyramid structure in his book. Below the "*faculty of sight*",[119] three topics had been developed respectively and interactively. In *'Concerning Optics'*, Cullen observed that *"...the pedestrian walks through the town at a uniform speed, the scenery of towns is often revealed in a series of jerks or relations..."* [120] This was named as *Serial Vision* by Cullen. In *'Concerning Place'*, he summed up 46 subordinations, including the basic physical features of a place, such as *'Enclosure, Level, Point, Precinct, Vista'*, etc., and some inner linkages between different elements of space, such as *'Indoor and Outdoor, Here and There, Possession and Viscosity, Punctuation and Continuity, Projection and Recession'*, etc. In *'Concerning Content'*, Cullen outlined 34 elements, suggesting the inherent symbolism evoked by our

[118] Lynch, Kevin. *The Image of the City, the Twenty-sixth Printing* (Cambridge, Massachusetts, and London, The MIT Press, 1998), p.93.

[119] Cullen, Gordon. *The Concise Townscape. The Fifth Impression* (London, The architectural Press, 1968), p.8.

[120] Ibid, p.9.

surroundings, such as *'Metaphor, Intricacy, Intimacy, Illusion, the Tell-Tale, Nostalgia'*, etc.

Although all of these items Cullen summarized out were juxtaposed in a similar style of the *pattern language* to describe the important aspects of townscape design, the affiliation within different levels and the association among subordinate items relatively are still more obscure than the Patterns. Probably because from the beginning Cullen didn't want to develop his townscape with a quasi-language structure, the items only were organized in a comparative loose logic. However, just as what he stressed for the relationships amongst the essential facets of a city: *"In fact there is an art of relationship just as there is an art of architecture. Its purpose is to take all the elements that go to create the environment: buildings, trees, nature, water, traffic, advertisements and so on, and to weave them together in such a way that drama is released."*[121], from the angel of theory, Cullen never forgot to emphasize the importance of integrity and systematization in urban design. This point implies the potential structure of Cullen's system. So it is essential to understand the *townscape* with a broad-viewpoint. If arranging all these items together, a clear framework still can be established (Table: 2-6). Maybe it is not rounded, but must be crucial for urban design. This is in essence an annotation of his language study.

[121] Ibid, pp.7,8.

Faculty of Sight			
Serial Vision	Concerning Place		Concerning Content
	1, Possession 2, Occupied Territory 3, Possession in the Movement 4, Advantage 5, Viscosity 6, Enclaves 7, Enclosure 8, Focal Point 9, Precincts 10, Indoor Landscape and Outdoor Room 11, The Outdoor Room and Enclosure 12, Multiple Enclosure 13, Block House 14, Insubstantial Space 15, Defining Space 16, Looking out of Enclosure 17, Thereness 18, Here and There 19, Looking into Enclosure 20, Pinpointing 21, Truncation 22, Change of Level 23, Netting	24, Silhouette 25, Grandiose Vista 26, Division of Space 27, Screened Vista 28, Handsome Gesture 29, Closed Vista 30, Deflection 31, Projection and Recession 32, Incident 33, Punctuation 34, Narrows 35, Fluctuation 36, Undulation 37, Closure 38, Recession 39, Anticipation 40, Infinity 41, Mystery 42, The Maw 43, Linking and Joining: the Floor 44, Pedestrian Way 45, Continuity 46, Hazard	1, the Categories 2, the Categorical landscape 3, Juxtaposition 4, Immediacy 5, Thisness 6, Seeing in Detail 7, Secret Town 8, Urbanity 9, Intricacy 10, Propriety 11, Bluntness and Vigour 12, Entanglement 13, Nostalgia 14, the White Peacock 15, Exposure 16, Intimacy 17, Illusion 18, Metaphor 19, the Tell-Tale 20, Animism 21, Noticeable absence 22, Significant Object 23, Building as Sculpture 24, Geometry 25, Multiple Use 26, Foils 27, Relationship 28, Scale 29, Scale on Plan 30, Distortion 31, Trees Incorporated 32, Calligraphy 33, Publicity 34, Taming with Tact

Table: 2-6, Gordon Cullen's Framework

Based on the work of Lynch and Cullen, some followers inherited and developed new

viewpoints. In a short essay – *A Process Language for Urban Design*, Hill[122] proposed a *'Process Language'* to compliment Alexander's and Lynch's Patterns by emphasizing that: "*Pattern languages give us terms for form. Process languages give us terms for function. Together, form and function help to produce both cultural meanings and the biophysical effects of a design*."[123] Additionally, Duany[124] noticed the contradictions and conflicts among the different specialists in urban design scope. For the development of the relative new subject and communication between scholars, he advocated to establish a set of common collection of nomenclatures in a short writing – *A Common Language of Urban Design*. Very interesting one, a critique about the unsuccessful 1930 recreation plan for Los Angeles County by Young[125] uncovered a contradiction between the experts and non-experts. In the prologue, Young pointed out that: "*...the plan's mode of presentation was inappropriately technocratic for its audience, emphasizing the rationality and calculation of planning science over the emotional attraction and beauty of landscape art. The latter would have been more fitting because the plan was aimed at an inexpert public rather than a professional planning department*."[126] Dramatically, despite its urban nature this corresponds with Charles Jencks' thoughts on architecture, and both observe how people can understand the built environment on different levels. The next one, precisely, Hancock's[127] paper – *Your City does not Speak My Language: Cross-Channel Views of Paris and London in*

[122] Hill, Kristina. 'A Process Language for Urban Design'. *Arcade*, Vol. 21(4), Summer, (2003), pp.27-28.

[123] Ibid, p.28.

[124] Duany, Andres. 'A Common Language of Urban Design', *Places*, 1998, Vol. 11, No. 3, Winter, p.76-78.

[125] Young, Terence. 'Moral Order, Language and the Failure of the 1930 Recreation Plan for Los Angeles County'. *Planning Perspectives*, 16, (2001), pp.333-356.

[126] Ibid, p.333.

[127] Hancock, Claire. 'Your City does not Speak My Language: Cross-Channel Views of Paris and London in the Early Nineteenth Century', *Planning Perspectives*, 12, 1997, p.1-18.

the Early Nineteenth Century does not belong to the study of urban design language but just uses the personification of rhetoric. However, a valuable thing is how the author described the differences of the two cities, which ranged from landscape, street vista to building styles and living habits, by the spoken & written language.

Compared with the relative diversity of the studies on architectural language, those scholars who work in the urban dimension contributed several sets of urban patterns. They didn't nominate their works as a 'language', but at a macro-level, the planners definitely composed valuable urban dictionaries. They are helpful to grasp the common structure and features of cities as well as prominent to a holistic language study of the built environment.

2.3.5 The Landscape Language

With increasing attention on the nature environment, landscape design became more and more prevalent in recent. Growing interest and research into landscape design, has led to the more recent evolution of a language of landscape. Similar to the language study in architecture, the language of landscape is also developed as a proper design method. However, compared with the concept of architectural language, it is only in its infancy and has emerged in the last decade. Though relatively new, this research scope has absorbed countless academicians' attention. Besides a series of published papers, which were represented by two international symposia on languages of landscape architecture hosted by Lincoln University, New Zealand in 1995 and 1998, *The*

Language of Landscape by Anne Whiston Spirn (1998) is currently the foremost work on this topic.

Spirn described her 'language' in three logical parts – the Existence, the Compositions and the Usages. In the first chapter, she argued that landscape is a kind of language containing the various potential meanings and laws of our surroundings. They can be divided into landscapes of *'worship, memory, play, movement and meeting, production and waste, home and community'*,[128] in which the different atmospheres of *'folklore, myth, tragedy, comedy, epic and poetry'*[129] can be sensed. Spirn suggests that landscape can be read by learning nature and could be written by respecting nature. She also observes that the meaning of landscape can be simple with an individual hint or indeed complicated with endless multiple understandings and overlapping functions, which can only be decoded by fully respecting the context of landscape. Briefly, she refers this as *"...a literature of lived life"*.[130]

Based on the existence of the language of landscape, she proposed a detailed explanation around the composition of the language. Analogous with Jencks, Spirn compared nature's elements with literature. She notes how a river's flowing is like a verb, water and path like nouns, and their qualities of wetness or breadth are like adjectives and adverbs. Additionally like words in a phrase, clause, or sentence, the

[128] Spirn, Anne Whiston. *The Language of Landscape* (New Haven and London, Yale University Press, 1998), pp.54-77.
[129] Ibid, p.49.
[130] Ibid, p.80.

elements of landscape, such as tree, fountain, street do not exist in isolation, but rather combine to more complex landscape story – garden, town, or forest.[131] In addition, compared to Alexander or Lynch, she abstracted a series of archetypal patterns of spaces, which are territory, boundary, path, gateway, meeting place, prospect, refuge, source and sign.[132] Consequently, Spirn explains the grammar of landscape from the dialectic viewpoint. She affirmed that the grammar can't be ignored because wisdom and latent laws have developed and evolved over time, however, she also highlighted that grammar isn't unchangeable and different individuals can compose a particular landscape given special local conditions.

On the usage level, Spirn established a complex rhetoric system of landscape language based on the emphasis of cultivating the landscape by heart. The system was similar but more complex than Jencks' on the Late-modernism and Neo-modernism in architecture. Before going deeply into the analysis, an elegant comparison was given as a metaphor – *"A rose is rarely just a rose; it is encrusted with meaning accreted through centuries of poetry, painting, gardens, and rituals of everyday life. And still roses are mined for fresh meanings by reformulation, surprising and provocative juxtapositions and combinations."*[133] Sensitively, the poetics of landscape is all embodied from one single rose flower. The following rhetoric system of the landscape is voluminous. From alliteration to allegory, from climax to exclamation, Spirn almost introduced all the rhetoric methods in literature into the landscape scope. But through carefully study, a

[131] Ibid, p.85.
[132] Ibid, p.121.
[133] Ibid, p.216.

clear frame still can be figured out (Figure: 2-17).

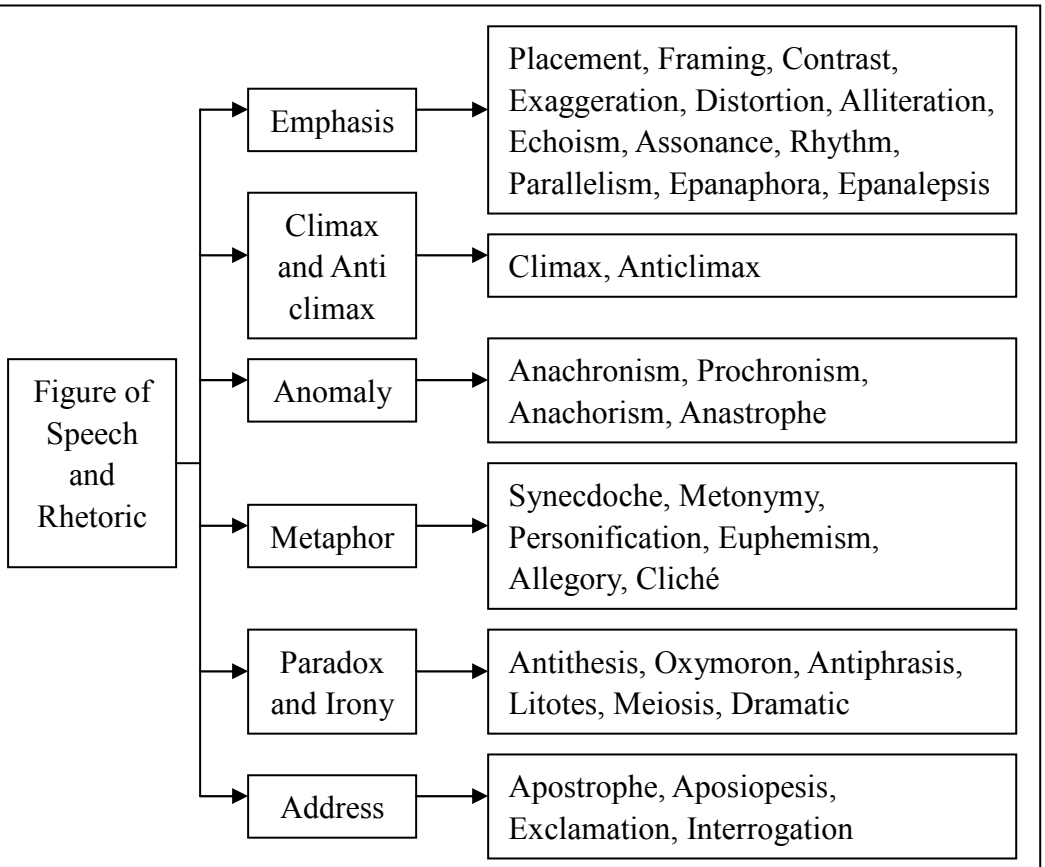

Figure: 2-17, Rhetoric of the Landscape Language

As a leading scholar in this topic, Spirn's seminal research has also been studied by other thinkers. Bennett[134] is one of them and provided a careful review of Spirn's work. In his article, the author called Spirn the leader of the movement of language of landscape and introduced the basic structure as well as some predominant viewpoints briefly. He also noticed Spirn's comparison between landscape elements and verbal language elements and argued that Spirn developed her language on two connective levels. *"First there is the syntactical level, in which she compares the structure of landscape and the structure of verbal language: features are like nouns, processes like*

[134] Bennett, Paul. 'The Language of Landscape', *Landscape Architecture*, Vol. 89, No. 5, 1999, May

verbs, their interactions like subjects and predicates intertwining. Beneath the syntactical is the metaphorical level where, like verbal language, a coherent structure can begin to take on meaning."[135] If the first level can be viewed as a superficial comparison, the second level penetrated the deep of people's mental. In addition, Bennett analyzed some typical examples of Spirn. There into, one is about a house circled by several very large trees close to provide shelter against the unrelenting sun and wind in a great expanse of treeless plains. Here Spirn emphasized people how to understand the landscape and how to change it dramatically, on the contrary, the landscape how to express a poetic metaphor to people's life and how to provide people a chance for musing the lofty and esoteric tone of them. She called the creating and influencing process the landscape literacy – a spatial power of the built environment to teach people how to read and write the landscape, how to be fluent in landscape and how a successful landscape to play a role of love creation and connection. Similar to Alexander, Lynch and Cullen, Spirn is also a humanity advocator. From her thinking, a flow of warm-heart and goodness can be undoubtedly perceived.

So combining both the characteristics of Jencks' linguistics and Alexander's humanity, evidently, Spirn's language theory of landscape embodied the double-features of the post-modernism language and the pattern language. It is not only an important attempt to integrate these two former different tendencies, but also a significant character of the study on the language of landscape.

[135] ibid, p.62.

Besides Spirn's work, typical papers on the language of landscape tended to relate to the practice of landscape design. Hammatt[136] introduced a successful landscape designer – Julie Moir Messervy who blended the attributes of Japanese gardens in the western gardens very well and communicated with clients by her own landscape language. She said: *"I give people a language so that they can describe to me their inward garden." The language, ……, is formed by seven archetypes: Sea (representing the womb or protected enclosure), Cave (emergence), Harbor (an enclosed refuge), Promontory (the edge of the known world), Island (independence), Mountain (a quest for solitude and spirituality), and Sky (transcendence)."*[137] Comparing with the systematic theory of Spirn, Messervy's language is simple and curt, but as a practitioner applying the landscape language in design, she is undoubtedly successful.

Another paper of Chappell[138] recording the revitalization of Cahokia – a famous Native American holy relic and UNESCO world heritage site – showed how a place changed its aboriginal function and latent meaning to adapt to a new period. Chappell explored the magic connection between landscape and people as well as the symbolic power of landscape architecture. In the essay – *Cahokia: The Symbolic Language of Landscape Architecture*, She said: *"This landscape illustrates the dynamic relationship between*

[136] Hammatt, Heather. 'ASLA, Constructing a Language of Gardens, Taking a Meaningful Journey through the Landscapes of Julie Moir Messervy'. *Landscape Architecture*, Vol. 94, No. 2, Feb. (2004), pp.118-121.
[137] Ibid, p.118-119.
[138] Chappell, Sally A. Kitt. 'Cahokia: The Symbolic Language of Landscape Architecture'. *Landscape Architecture*, Vol. 93, No. 5, May, (2003), pp.28-34.

land and people over a long period of time and demonstrates how people confer different symbolic values on the same piece of land and how landscape architecture survives if its monumentality is adapted for a changing population with timeless design principle."[139]

In contrast to those who advocate such 'concrete' languages, Thayer[140] proposed the development of a new ecologically revealing language. In his paper – *Landscape as an Ecological Revealing Language*, the writer elicited the topic through a detailed introduction to an exhibition – *'Eco-Revelatory Design: Nature Constructed/ Nature Revealed'*. He emphasized the invisible impacts of technological culture upon nature and the harmony between human civilization and ecosystems. At the last part of the article, four pairs of fresh ecological continuums that should be noticed in landscape design or environment rebuilding were put forward, which are Concrete – Abstract, Regeneration – Passive, Nonhuman – Human Ecosystems, and Visible – Invisible. Based on the explanation to the four twin concepts, Thayer noted "*the impact that our globalizing, technological culture has upon ecosystem,* and *the environment impacts of human existences that are often out of sight and out of mind – far away from the sources of creation of those impacts."*[141], then mentioned the limits of using the tangible, visible and spatial dimensions of landscape to address the intangible and invisible environment phenomena. So he appealed to develop a new vocabulary, syntax, grammar and usage of such an ecological revealing language to interpret the

[139] Ibid, p.34.
[140] Thayer, Robert L. Jr. 'Landscape as an Ecological Revealing Language'. *Landscape Journal*, (1998), pp.118-129.
[141] Ibid, p.129.

complexity of ecosystem. Thayer didn't bring forward any detailed structure or framework of the ecological revealing language. His paper is to declare a slogan rather than to explain an academic theory.

The theories of landscape language continue to develop and have become useful methodologies for landscape designers. They not only cover the semantics and study of inner-structure, but also consider the ecological balance and conservation of the environment. These are obvious and valuable attributes which expand the study of the language within the built environment.

2.3.6 Form Grammar

Focusing on a typological study of architecture, especially within the various traditional buildings, there was a considerable amount of research on form grammar from different cultural perspectives.

Form grammar is a kind of methodology to study some latent basic rules hiding in architecture. Always working on the plans or façades, form grammar researchers collect a huge amount of data to uncover the rules or regulations controlling the dimensions of buildings by mathematics, topology and geometry, etc. First, existing buildings are measured and drawn before the data is analyzed to find out the initial shape, elements of vocabulary and necessary transformation parameters. Counting the number of possible variations by topology and geometry is the next step, and finally a graphic

framework of the building is established. For a group of similar buildings abounding everywhere, form grammar is proper and useful, particularly for folk culture conservation, where a detailed form grammar record is vital.

Çagdas[142], the scholar at Istanbul Technical University, wrote a comprehensive study on the plan of English traditional row-houses and the traditional Turkish houses by the term – *'shape grammar'*. In his paper – *A Shape Grammar Model for Designing Row-Houses*, he argued that the architectural language containing vocabulary, syntax, semantics, context and styles are based on shape grammar, and each shape grammar defines and constructs a language of design by its vocabulary, spatial relations, shape rules and initial shape. Based on this theory, he analyzed and formed the schemata of the English row-houses generation map, but it is in his paper – *A Shape Grammar: the Language of Traditional Turkish Houses*;[143] that he expounds the different schemata of traditional Turkish houses. Virtually, as a practitioner, he endowed the form grammar study with a very vital role.

Another Turkish scholar, Yurdanur Dülgeroglu-Yüksel[144] focused his aim on other facet of the traditional houses – the wall. In his paper – *The Language of Walls in the Traditional Turkish Houses*, he compared the different houses groups in the different areas of Turkey. Although the methodology of analysis is different from Çagdas', he

[142] Çagdas, Gülen. 'A Shape Grammar Model for Designing Row-Houses'. *Design Studies*, 17 (1996), pp.35-51.

[143] Çagdas, Gülen. 'A Shape Grammar: the Language of Traditional Turkish Houses, the similar schemata of traditional Turkish houses'. *Environment and Planning B*., Vol. 23, No. 4, Jul. (1996), pp.443-464.

[144] Dülgeroglu-Yüksel, Yurdanur. 'The Language of Walls in the Traditional Turkish Houses', *Open House International*, 2002, Vol. 27, No. 1, March, pp.33-43.

still contributed a panorama on the walls of Turkish fork houses through the study on spaces, materials, shapes, locations, functions and so on. He didn't give a resembling generation map like Çagdas' studies, but just as what the author said in the conclusion, he successfully put forth *"what a wall would communicate about Turkish culture and what it means for the designers of modern houses, or the house in future"*.[145]

What the Chinese scholars did under the concept of the form grammar is also different from Çagdas'. One of the most respectable Chinese scholars – Fu Xinian,[146] (1933 –) devoted himself for decades to the study of the modulus rules of Chinese traditional architecture. His research unveiled the secret modulus controlling not only the plans but also the façades ranging from the huge city to the small pavilion. In his masterwork – *The Study on the Chinese Ancient City Planning, Architecture Layout and Design Methods*, the majority of the important traditional buildings and cities were measured and analyzed, and the different modulus in different dynasties were elucidated according to the metrology of that period. It was a special form grammar study closely connected with mathematics counting and geometrical repetition. Although not explicit in his books, clear evolutions of the styles and generation map were implied following the detailed explanation of the development of metrology.

Form grammar studies record the attributes of traditional buildings and cities by

[145] Ibid, p.43.

[146] Fu Xinian, *The Study on the Chinese Ancient City Planning, Architecture Layout and Design Methods* (BeiJing, China Architecture & Building Press, 2001)

graphic formats. The increasing numbers of academicians who study traditional architecture, trace the history of civilization and decompose the vocabulary of latent form are helping to recognize, celebrate and therefore reduce the disappearance of local culture.

2.3.7 Other Architectural Language Studies

The following category of the built environment language is quite different from the previous ones. Besides the major branches of language studies within the built environment there are many smaller groups of language studies, which cannot be disregarded.

Different from the complication and systematism of those developed language theories, they are under the development or just using the advertising effect of the name – 'Architectural Language'. However, for holding the developing conditions roundly, these diverse languages of architecture are also crucial. Indeed, many relative papers have been published in the past decade. According to their general features, the various architecture language studies can be divided into two main subcategories: one contains the study on some kinds of actual special languages, and the other one consists of those so-called advertising architectural languages.

Many scholars contributed their articles to the first group in the past years. Dramatically, it is very seldom that two papers working within the same scope.

Moravánszky[147], in his paper published in the AA Files – *'Truth to Material' Vs 'The Principle of Cladding', The Language of Materials in Architecture*, introduced material language by analyzing the different features of brick and stone. Whereas Landa[148], a signage and displays consultant for Linda Powell & Associates, pointed out the function, merits and the possible confusion of the signs, tokens and logos in or on architecture in a very short essay – *Sign Language*. In addition, Clark Brown[149] reported her experiments with two groups of students at Washington State University – *Aesthetic Composition and the Language of Light, a Subject of Academic Inquiry* – which revealed the power, charm and meaning of light in architecture. Actually, it is not only a paper introducing an academic study, but also a catalyst to break out the shackle of traditional space-entity, harmony-contrast and proportion-rhythm. It would be helpful to open our minds towards the technology aspects in the study of architectural language. What's more, Knecht[150], in the paper – *Building Regulations May Finally Shed their Impenetrable Language,* paid attention to another special aspect – the management of building codes. She elucidated the communication difficulties, which was an obvious shortcoming of the coexistence of different local or regional codes in America, and called for a uniform building code. Finally, more interesting one, in the *'Body Language: an Architectural Approach to Performance'*, Hawker asked:

[147] Moravánszky, Ákos. ''Truth to Material' Vs 'The Principle of Cladding', The Language of Materials in Architecture'. *AA Files*, No. 31, Summer, (1996), pp.39-46.

[148] Landa, Frank. 'Sign Language'. *Interiors for architects and Designers*, Sep. / Oct., (1999), p.37.

[149] Brown, Nancy Clark. 'Aesthetic Composition and the Language of Light, a Subject of Academic Inquiry'. *Journal of Interior Design*, Volume: 30-3. (2004)

[150] Knecht, Barbara. 'Building Regulations May Finally Shed their Impenetrable Language'. *Architectural Record*, Apr., Vol. 191, Issue 4, (2003), pp.181.

"Is the human body a piece of architecture?"[151]. Hawker tried to define architecture through the interaction between people performances and spaces. It was both a new approach to the language study and a fresh viewpoint to understand buildings.

Both journalists and academicians constitute the authors of the second group articles. They cited the 'architectural language' to propagandize some winning designs in international competitions or exhibitions, or commented on very remarkable architecture designed by famous architects. Here, 'architectural language' loses its deep connotations but is used as a note. Some typical ones will be mentioned thereinafter. Blackler[152] used the 'language' to introduce the new Construction Industry Council (CIC), which won by Nicholas Grimshaw & Partners in competition. Wilkinson[153] explained the foster & Partners' London City Hall carefully from the aspects of master planning, architecture design, structure, energy supplying and saving in the paper – *Logic and Language: Foster & Partners' City Hall*. Coinstantaneously, Levit[154] endowed the concept of language on the works of Álvaro Siza and gave us a panorama view of the remarkable attribute of the eminent designer's architecture – the precise accommodation to the building sites surroundings.

Various investigations such as these are diverse yet important in that they can act as

[151] Hawker, Marc J. 'Body Language: an Architectural Approach to Performance', *World Architecture*, No. 45, 1996, Apr., p.68.
[152] Blackler, Zoe. "CIC Reveals New Design 'Language'", *architects' Journal*, Vol. 216, No. 2, 2002, July 11, p.4.
[153] Wilkinson, Chris. 'Logic and Language: Foster & Partners' City Hall', *Architecture Today*, No. 131, 2002, Sep., pp.64-80.
[154] Levit, Robert A. 'Language, Site and Types: A Consideration of the Work of Álvaro Siza', *The Journal of Architecture*, Vol. 1, Autumn, 1996, pp.227-252.

catalysts of aspiration, and they are therefore essential to a rounded study of the language of the built environment.

2.4 The Logic Relationship between Built Environment Language Studies and Structural Linguistics – Semiology Scope

In general, all the built environmental language branches reviewed above are invaluable resource for theoretical development and formed up a certain academic foundation. Clearly, in the previous centuries, they were developed under a same academic term – language, but covered almost all disciplines of built environment and delivered many different annotations into the built environment language scope. However, if going through all of them together, the commonness and differences still can be summed up. And by these attributes, a systematic comparison with the structural linguistics – semiology scope can be approached.

According to the contents, these seven branches of built environment languages can be summarized into two categories:

- those which extract and juxtapose the vital elements of successful architecture or cities. For instance, establishing a language dictionary including the classical architecture language, the pattern language, the urban design language, and the code language, etc.;
- those which analyze the deeper structure or meaning of the built environment. For instance, composing a book of grammar including the

modernism and postmodernism architectural language, the form grammar study, the body language, the technological language, and the material language, etc.

Therein, it is noticeable that the only exception is the language study on landscape, which mixed both these two groups. Clearly, Christopher Alexander is the representative of the former group, and Charles Jencks and Geoffrey Broadbent mainly advocated the latter group. However, Anne Whiston Spirn who considered the bilateral merits of these two groups will continue the unique of landscape language.

Based on this taxonomy, the characteristics of both can be identified. Totally two pairs of differences containing within them:

- Firstly, in the former group, the conventional thinkers developed pragmatic dictionaries with very detailed interior structure and a spirit of virtuous humanitarianism. Their attention focused on exhaustive practical aspects but they didn't clearly announced reference to the structural linguistics and didn't study the language phenomena from a viewpoint of semiology. On the contrary, the later group directly introduced semiological concepts, such as "the signifier and signified", into the research, contributed some deeper explorations on architectural meanings and explored the latent universal structure of architecture. Their viewpoint is abstract and recapitulative but they didn't very much go into

the detail elements of the upper structure.

- Secondly, the former group's dictionaries were focused on the built environment per se, in which many typical building elements, such as the wall, window, material, paving brick, plants and city furniture, etc., were picked out to establish the built environment vocabulary. Contrarily, the later group's grammar books were pointed to people's active operations to the built environment, in which the rhetoric of architecture, the law of combination among the constructional elements and the connotations hiding behind the buildings, etc., were deeply explored. Evidently, the former is the stuff to compose the language but the later is rules to run the language.

Apparently, based on the analysis above, these two groups can be considered to complement with each other. But the reciprocity also can be interpreted on two aspects.

- The first reciprocal point is focusing on between the "detail structure – recapitulative structure", "without semiological reference – with semiological reference" and "practical value – theoretical value". Clearly, all these points concentrate on the academic fields of the structural linguistics and semiology.
- The second reciprocal point is corresponding with potential cooperation between the dictionaries and grammar books. Conspicuously, an idealistic situation is that the dictionaries and grammar books can be seamlessly combined together. However, what can be sensed from the combination is a

embodiment of Saussure's definition of "langue" on the practical level of built environment; furthermore, the potential individual activities of using these dictionaries or grammar books are "parole" in built environment.

Comparing the two compatible aspects together, it is very clear that all these language of architecture, language of urban and language of landscape design embody strong attributes of the structural linguistics and semiology. On this point, the answer for the second question of the first aspect of contradiction is also positive (1.1). Additionally, if tracing back to the review of structural linguistics – semiology, it is also not difficult to discover that many scholars sought support from discipline of architecture as well. Actually, on the one hand, the scholars in built environment scope applied the knowledge of the structuralism and its derivatives to establish their language frameworks; on the other hand, not only were architecture always the favourite examples of linguists and semiologists to interpret their theories, but also a close relationship with Peter Eisenman and Bernard Tschumi indeed provided strong architectural support to Derrida and this resulted in buildings becoming the 'pioneers' of a deconstruction revolution. Clearly, from this part of literature review, it has been verifies that, in seeking theoretical support, architects were assisted by semiologists and deconstructuralists, and vice versa. Moving onto a deeper level, it further strengthened the indivisible relationship between the built environment language studies and the structural linguistics & its family. Based on this review, the research aim – to seek the universal essence of built environment languages – can be developed within a more

logic and valid system.

2.5 The Opportunity of approaching a universal built environment language

Seeking universality in built environment language scope is the primary aim of this thesis. As put forward in the Introduction, this goal was embodied as three key questions:

- What is the **universal essence** of the "language of architecture", "language of city" and "language of landscape"?
- What are their **universal mechanisms of operation**?
- and can they be mastered **by everyone**?

Conspicuously, the word – universal – is extremely important to understand these questions and further to answer them. So it is essential to explore the meaning of "universal" firstly.

About the concept of "universal", a long time philosophic debate has existed since the ancient Greek philosophers. In epistemology and logic, it means *"a quality or property, which each individual member of a class of things must possess if the same general word is to apply to all members of that class."* But this "quality or property" indicated two different scopes for Plato and Aristotle. Plato believe that there must be *"a real existence distinct from their manifestations in individual objects,"* which is an extreme idealism designating a kind of general principle above the materiality of things. In philosophic terms, this thought has been known as *"universalia ante rem"*. On the

contrary, Aristotle's theory was more close to the concrete world. He argued that *"universals exist but only 'in' the particulars in which they are discerned,"* which is called as moderate realism pointing a distribution of universality in various particular manifestations. In philosophic terms, this thought has been known as *"universalia in re"*.[155]

This difference between Plato and Aristotle is very subtle. In fact, both of them were realists and admitted the existence of Universals as commonness, but the former believed that the commonness should be abstract concept from concrete individuals, and the latter insisted that the commonness only can exist among concrete individuals. This sounds like a pair of paradox. Actually in the real practical scopes, like built environment, it is fanciful to have this kind of debate. For example, these two opinions can be realized as a very simple question – "what is column?" For Aristotle, the answer may be any single but different column, such as, Corinthian column, ionic column, simple cubic shape concrete column and I-shape steel column, etc. Anyway, they are columns and columns are them. However, to Plato, the answer must be abstract concept. The column should be a kind of long, vertical staff for the functions of supporting, decoration or monumentalizing… Indeed, both answers are right. Plato's is the theoretical definition of Aristotle's, and Aristotle's is the practical embodiments of Plato's. At present, actually almost all the subjects are involved in both of these ideas and have moderated them towards a unity. We could have theory to direct practice; on

[155] Universal, from Britannica, [online]. Available at: http://www.britannica.com/eb/article-9074353/universal [22 May 2008]

the contrary, we also have various practices to realize and test theory. What is more, we can extract the commonness of a group of things; meanwhile these things can be very different with each other. So, it is reasonable to moderate the debate of Universals into a dialectic way – the universal is commonness extracted from particular individualities, but the particular individualities all manifest the extracted commonness. This characteristic can be studied from Merriam-Webster's Collegiate Dictionary.

As an adjective, the word – universal has totally five explanations:

1. *"including or covering all or a whole collectively or distributively without limit or exception; especially: available equitably to all members of a society;"*
2. *"A: present or occurring everywhere, B: existent or operative everywhere or under all conditions;"*
3. *"A: embracing a major part or the greatest portion (as of mankind), B: comprehensively broad and versatile;"*
4. *"A: affirming or denying something of all members of a class or of all values of a variable, B: denoting every member of a class;"*
5. *"adapted or adjustable to meet varied requirements (as of use, shape, or size)."*[156]

Analyzing these entries, it is not difficult to detect that they emphasized "covering every member" (the member means disciplines in academy and people in society) and "present every where". Within these two conditions, the word – "every" actually

[156] Universal, from Merriam-Webster's Collegiate Dictionary, [online]. Available at: http://www.britannica.com/dictionary?va=universal&query=universal [22 May 2008]

implies the commonness, but the phrases – “every member” and “every where” also hint the existence of different individualities.

So summarizing the analysis above, the term – universal – can be concluded as commonness of particular individualities, which covers all the members and presents everywhere. This is a realistic philosophic concept embracing everything, but under different condition, it must be refined to suit the specialities of every certain scope. Therefore, the universality of built environment language must adapt to the attributes of built environment.

Based on the literature review before, it has been proven that built environment elements can be applied as a mean of communication by referring to the knowledge of structural linguistics – semiology system. So a universal language of built environment should be a common communication way, which covers every discipline of built environment and is used by every member within the range of built environment. Since currently the most population is living or involving in civilized societies composed of buildings, cities and landscapes, etc., the members involved in built environment should include everyone who lives inside. Detecting from this definition, it is clear that a universal built environment language should satisfy two basic conditions:

- Firstly, as an academic scope, it will cover all disciplines, including architecture, urban and landscape, etc.
- Secondly, as a communication way, it will be applied by both the professional

experts and the general public, and equally for every member, the application includes both positive creating (corresponding to writing and speaking) and passive perceiving (corresponding to reading and listening) processes.

Clearly, based on these requirements, those former different built environment language studies are not deserved to be universal at all. This point has been briefly mentioned in the Introduction (1.1), but will be more detailedly analyzed in the following paragraphs.

The classical language of architecture – Orders is not universal. Although the five Orders have controlled the built environment for almost 2000 years and have became the paramount symbols to deliver information in architecture design, (sometime also in urban planning and landscape design), they were only officially used by architects and interpreted by architectural theorists. The general public merely can passively obey authorized meanings. So, it could satisfy the first condition but fails the second.

The languages of Modernism, Post-modernism, Late-modernism and Neo-modernism are not universal. Firstly, these scholars like Jencks and Broadbent only focused on architecture discipline without touching urban planning and landscape design very much. Secondly, although Jencks put forward the concepts of “double-decoding” to explain people’s different understandings, the right of “writing and speaking” is still firmly controlled by specialists in their theories.

Alexander wanted to build a very detailed universal language covering all disciplines of

built environment. He not only summarized 253 patterns including three dimensions – the city planning, building design and construction, but also endowed the public with the same rights of designing and building as professional architects. What is more, he has sensed that it is impossible to cover everything just in 253 patterns and claimed that the Patterns Language is an open system that can be expanded by every user. However, although the Patterns embodied both conditions, Alexander's language is too detailed and too complex to be an abstract commonness. Typically, these 253 patterns, which tried to cover the built environment scope, have been attacked as a serious obstacle of freedom of design by William S. Saunders and Jean-Pierre Protzen (2.3.3). If referring to the difference between Plato and Aristotle, these oppositions could manifest as one of Plato's definitions failed to correspondingly cover Aristotle's all particulars. This situation also uncovers a potential danger in this research. It is that the universal built environment language cannot be a very detailed list covering all important elements but some laws above them, because, analogizing to spoken & written language, we cannot have a huge lexicon containing all usages of English but a thin book of general grammar. Based on this analysis, the Pattern Language is only half universal.

The urban language and landscape design language are not universal because both of them only concentrated on their certain fields, which are out of the first condition. What is more, although Cullen noticed a general public view of townscape – the serial vision, he made a similar result of Alexander by summarizing a series of elements in his Faculty of Sight; and although Spirn paid attention to the possibility of public

participation in design and perceiving of landscape, she didn't extract these phenomena to a theoretical framework.

Finally, the form grammar is not universal as well. Although, as a methodology of analyzing the geometric regulation of built environment, those scholars may work on single building, villages, palaces with gardens, cities and landscapes, etc., their achievements are absolute representatives of authorized understanding. Very interesting, actually in this scope, the study objects – ancient villages or conventional building groups – were mainly created by non-professional people of local communities, but the right of reading is fully controlled by today's specialists.

Summing up these six groups studies here, they are neither the universal language of built environment nor the universal language of their own fields. Apparently, they all failed to fully satisfy the definition and both conditions of "Universal", but it is actually only one reason. If tracing back to the theory review of structural linguistics – semiology system, deeper reasons can be dug out.

- Focusing on the definition and conditions, if the first condition is limited by different objective research field, well then, the second condition is shackled by subjective opinions. Hereinto, the different objective academic fields can be technically combined by finding out the commonness of language of architecture, language of urban and language of landscape, etc. However, the subjective shackle only can be conquered by changing mind. Undoubtedly, all

the design work in built environment including architecture design, urban planning and landscape design are sublime jobs, but this sublime cannot be shifted to superiority. In fact the designers are serving the public rather than controlling them; and architecture is mainly used by the public rather than its architect. By all these reasons, how can I exclude the public from the users of built environment language?

- Deeply to say, apart from the above reason, although they all more or less referring to the knowledge of structural linguistics – semiology system, none of them actually carried the intact structural linguistics – semiology framework through their studies. This should be another reason to prevent these works to be universal. In fact, both the structural linguistics and semiology are real universal theories. Hereinto, structural linguists explored the commonness, which is the latent law and theoretical framework of all kinds of particular spoken & written languages. These laws and theoretical framework are unconsciously used by every person who has the language capability, at every place where people use language. Furthermore, semiologists explore the commonness of using signs as communication systems, in which similar potential laws and theoretical framework have been developed as well. So, clearly, recurring to the structural linguistics – semiology theory in built environment should be a right approach towards a universal built environment language.

All together, in the following chapters, utilizing the structural linguistics - semiology

system to denominate the built environment langage, langue and parole as the foundation, adopting semiological binary concepts to deduce the built environment signs' signification process as the main part and cooperating with deconstruction viewpoints to explore the multi-meanings as the necessary supplement, the essential theoretical framework of built environment linguistics could be formed step by step. Within this theory, what will be gestated out is the universal essence of built environment linguistics, which – facing a diversity of architectural styles, city images, landscape sights and emergence of new materials and technologies – is an interaction between mental thoughts and concrete constructions; is a media connecting professional architects and the public; is not a design method but a communication way; is a fresh start rather than an end.

PART TWO

BUILT ENVIRONMENT LINGUISTICS

3 The Framework of Built Environment Linguistics

"This will kill That. The Book will kill the Edifice."[157]

Tracing back to the built environment language studies review thereinbefore, this remarkable dictum of Hugo is unforgettable. In his charming novel he inconceivably involved a definite architectural academic field and even argued the existence of the architectural language. It is extraordinary because this viewpoint not only came from a great litterateur rather than an architect but also provided another angle to study the subject. Despite Hugo's last destination being to glorify the great power of the printing books which, in his opinion, would substitute for the buildings to record the numerous pieces of information about human civilizations, he would not bethink that his simple dictum would become an impetus to improve the study on built environment language.

Actually, as a writer, Hugo's admiration on the development of printing technology accorded with his status much more. However, in fact, till now books could never totally replace architecture. Even the Notre Dame de Paris is also quietly standing there and silently telling its story to thousands of visitors. Substantively, both book and architecture are important means to carry human civilization. The only difference is that book materializes spoken & written language but architecture solidifies another, which

[157] Hugo, Victor. *The Hunchback of Notre-Dame*, op. cit., p. 174.

is not less complex than the former, which is universal built environment linguistics.

3.1 A Dialectical Relationship between Langue and Parole in the Scope of Built Environment

The theoretical development of structuralism, structural linguistics, semiology and deconstruction and the development of built environment language studies have been systematically retrospected before. Based on these two parts of the literature review, there is an opportunity to explore the universality of built environment linguistics. So, based on this foundation, a new attempt to explore an integrated framework of built environment language should be prepared and could be implemented step by step. However, on behalf of the theoretical succession, it is still better to give the former contents a concise summing up.

The study of the language of architecture initially focused on the psychological impressions and potential symbolization of the classical buildings, especially on the Orders. Vitruvius and Sebastiano Serlio are the most significant representatives. Successively, over a long period of development, besides many critics who kept adapting the traditional research to the architecture of their historical periods, more scholars gradually extended the study field into the whole built environment field: the post-modernism architectural tendency (Jencks' language of postmodernism), the built environment encyclopaedia (Alexander's Pattern Language), urban planning (Lynch's five images and Cullen's townscape), landscape design (Spirn's language of landscape) and heritage conservation (form grammar study), etc.

These branches interrelate with each other and can be considered as an integrated scholar scope named "the built environment language study". Taking them together, it is conspicuous that the common knowledge background of them is structural linguistics – semiology system.

Logically following the structuralism and followed by semiology, linguistics has undergone a long development process. Probably beginning from Vico, whose *The New Science* was considered to be an initiation of structuralism, many scholars started to study the whole world with a viewpoint of structure. Represented by Hegel's Logic, their final destination was permanent structure including all attributes of human society and civilization, which finally focused on "linguistics". Then, developed by Saussure, the "structural linguistics" was established. Despite Saussure's linguistics mainly approaching spoken & written language, he also prospected a future development to the world of signs. According to his description, it should be a subject that *"...comprises all manifestations of human speech, whether that of savages or civilized nations, or of archaic, classical or decadent periods. In each period the linguist must consider not only correct speech and flowery language, but all other forms of expression as well."*[158] Actually, here *"all manifestations"* and *"all other forms"* cover architecture and other built environment faculties. Successively, Barthes accomplished the adaptation of linguistic theory to semiology. All of these important theorists' contributions finally form a strong plinth for studying the signs of whole built environment.

[158] Saussure, De Ferdinand. *Course in General Linguistics*, op. cit., p. 6.

Both inheriting from Saussure, either Hjelmslev's Glossematics linguistics or Barthes' semiology manifest a clear and vital feature – binary classification. This is the trace verifying that they are natural generations of structuralism. Therefore to analyze the built environment signs, similar classification is also an inevitable initial step. However, since both Hjelmslev and Barthes modified Saussure's original terms and developed their own new explanations, the built environment linguistics, as a specific development of them, has to face up to the first obvious problem – how to understand the relationship between them in the built environment scope; and if we want to chose one, which set of terms should be applied in this thesis.

According to literature before, Saussure gave linguistics a basic ternate taxonomy of "langage" (speech), "langue" (language) and "parole" (speaking). He defined the langage as the entire linguistic phenomenon, which is a term to cover all the linguistic elements together. Below it, the langue and parole are sub-deployed. The former is social aspect. Its definition was given as an objective accumulation of "social product" and "necessary convention" that can be directly studied. It is the "instrument" and "product" of parole. The latter is individual, and was considered as a subjective execution – a development and source of langue. (2.2.4.1) However, Hjelmslev modified langue to "system" and parole to "process", in which the system can be subdivided into three planes – the schema, norm and usage. (2.2.4.4) Further, Barthes kept langue and parole with more elaborations in semiology and argued that *"we shall*

therefore postulate that there exists a general category langue/parole, which embraces all the systems of signs."[159], but his theory also leads to some problems. A conspicuous difference focused on the definition of langue, which he emphasized very much on the abstract aspect – "necessary convention" as "social institution" and "collective contract"; (2.2.5.2) another important aspect is two "problems" of applying langue and parole in semiology. The first is about *"the origin of the various systems, and thus touches on the very dialectics of langue and parole;"* the second is about *"the proportion between 'langue' and 'parole' in the various systems."*[160] In the following paragraphs, these theories will be systematically studied to adapt the feature of built environment.

The first point concentrated on the unity of the definition of langue. If having an insight into Saussure's two aspects and Hjelmslev's three panels, they were actually talking about the same thing but Hjelmslev further pulled the term into concrete semiology world. According to Barthes' elaboration, *"the scheme, which is the langue as pure form"*, actually embodies the concrete aspect of "social product"; *"the norm, which is the langue as material form, after it has been defined by some degree of social realization, but still independent of this realization"*, embodies the abstract aspect of "necessary convention"; and *"the usage, which is the language as a set of habits prevailing in a given society,"*[161] somehow intrudes into the scope of parole. So, Barthes further argued that *"thus appear (in fact) two fundamental planes: i) the*

[159] Barthes, Roland. *Elements of Semiology*, op. cit., p. 25.
[160] Ibid, pp.31, 32.
[161] Ibid, p. 17.

schema, the theory of which merges with that of the form and of the linguistic institution; ii) the group norm-usage-speech, the theory of which merges with that of the substance and of the execution… we find in the end a new dichotomy schema/usage, Which replaces the couple langue/parole." Actually, Hjelmslev help us to be able to deal substantial elements by *"this formalisation of the langue and socialisation of parole"*,[162] but Barthes converted Hjelmslev's three panels of langue into the upper level of langue and parole because he sensed the potential contradiction of applying the "usage" in the scope of langue. However, very interestingly, through this conversion it is seemed that he endowed langue with pure form (schema) and lost his emphasis on rules (social institution) of langue again, which is partly paradoxical with his own definition of langue. Further more, this paradox is also obvious within his analyses of the sign systems of food, car and furniture. Hereinto, for food system, the langue is made of:

- *"rules of exclusion (alimentary taboos)";*
- *"signifying oppositions of units, the type of which remains to be determined (for instance the type savoury/sweet)";*
- *"rules of association, either simultaneous (at the level of a dish) or successive (at the level of a menu)";*[163]
- *"rituals of use which function, perhaps, as a kind of alimentary rhetoric."*

Obviously, all of them are about "rules". But for car system, the langue is:

- *"a whole set of forms and details",*

[162] Ibid. p. 18.
[163] Ibid, p. 28.

- *"the structure of which is established differentially by comparing the prototypes to each other."*[164]

Clearly, all of them are about concrete forms. But for furniture system, the langue is:

- *"the oppositions of functionally identical pieces (two types of wardrobe, two types of bed, etc), each of which, according to its 'style', refers to a different meaning",*
- *"and by the rules of association of the different units at the level of a room ('furnishing')."*[165]

Dramatically, the former one is focused on concrete form and styles, but the latter one is involved into the scope of rules again.

Facing to these various phenomena, I would like to believe that, in fact, what Barthes thought about langue actually contained two very clear aspects – the concrete entities and the abstract institutions. Although he didn't very distinctly express them in his definition, he do applied both of them in pragmatic analyses. On this point, Barthes conformed to Saussure. However, his intensive emphasis on the abstract – social contract or rules – cannot be ignored anyway, because that will provide us clue to answer his two "problems" about applying linguistic langue and parole into the world of signs.

[164] Ibid, p. 29.
[165] Ibid, p. 29.

What Barthes worried about is actually the difference between the spoken & written langage and the semiological system (langage).

One problem dropped into the origin of the sign systems and is about the dialectics between langue and parole in semiological systems. Because in spoken & written langage system, except disabilities on linguistic ability, all members of society share an almost equal status to use or produce langue by parole. However, in semiological system, the situation may be different. Barthes believed this difference and claimed that, only controlled by some *"signifying 'contract'"* agreed by all member of society, *"in most other semiological systems, the langue is elaborated not by the 'parole mass' but by a deciding group. In this sense, it can be held that in most semiological langues, the sign is really and truly 'arbitrary.' since it is founded in artificial fashion by a unilateral decision; these in fact are fabricated langues, 'logo-techniques';"* on the contrary, *"the user follows these langues, draws messages (or 'speech') from them but has no part in their elaboration."*[166] By this argument, Barthes in fact only awarded the right of using semiological parole to specialists and totally deprived it from most of us – the public. What is more, for highlighting the function of the social rules, he even further banished any free personal thinking from semiological langue, as *"although imposed on the users, the signifying 'contract' is no less observed by the great majority of them (otherwise the user is marked with a certain 'asociability': he can no longer communicate anything except his eccentricity); and because, moreover, langues*

[166] Ibid, p. 31.

elaborated as the outcome of a decision are not entirely free ('arbitrary')."[167] Very contrasting with his own S/Z, here it is hard to find out any trace of Barthes' opinion on deconstruction but easy to remind us the shortcomings preventing many former architectural language studies to be universal (2.5). The grass root of all these shackles are the too-much-emphasized institution or contract of langue.

It is predictable that by this problem, the langue and parole of any signs will be very lifeless and inanimate. And regarding the built environment, the parole can only be mastered by architects, planners, engineers and other relative specialists. Apart from them, general public only can following their thoughts and passively pick up different piece of message. However, if simply reviewing the built environment around the world, it is not difficult to discover many examples against this rule. For example, in the dimension of history, many excellent traditional communities were built by untrained members of local community rather than specialists. Such as the traditional Tu Lou of southeast part of China, the Yao Dong of northwest part of China, the conventional clay building of Yemen and the conventional village of Greece, etc. (figure: 3-1, 3-2, 3-3, 3-4) The diverse styles of these buildings rigorously follows the local climate, materials or historical situation. Maybe we can call these conditions as a kind of local social institution but obviously, any health members of the community is equal in front of this institution. By short time practice, people can grasp basic skill of building and be familiar with local materials. Then, based on these materials and skill

[167] Ibid, p. 32.

they can freely design and build. So after a few centuries work by many generations, what we can see now are unbelievable masterworks with great harmony and countless diversity, which never can be completed by any single group of specialists. They are the langue created by the public; and through the ceaseless working behaviours weaving into the movements of muscles and thinking in brains, what can be discovered is parole of public. Dramatically contrary, after these great built environments, what we can find is lots of specialists seeking aspiration and the building secrete. What is more, in the dimension of present era, the similar examples also can be found. In the scope of urban planning, especially on the scales of community plan and city plaza design, council always need to hold a meeting to hear opinions of citizens. And these opinions and suggestions will become important reference for specialists' work. In the scope of landscape design, especially in the UK, designing a garden by personal will and build it by members of family has became a national habit. In the scope of architecture design, Alexander's Pattern Language has encouraged not only architects but also countless folks to practice their own project. No matter they are beautiful/ugly by our aesthetic social institution, or convenient/inconvenient by our functional social institution, or efficient/redundant by our economic institution, they enjoy the freedom of using parole and producing langue. At last, in the scope of taste, actually in built environment, people hold their right to understand any building without any feeling of "eccentricity" and any difficulty of communication, because unlike other very limited sign system, (for example the car system by Bathes), built environment is the container of our life and our civilizations. Hugo described architecture as vast stone book to record human

race. And even bigger than architecture, the books of built environment have recorded every single piece of our history. On this point, that is a vast deposit of built environment langue, which is bigger enough to cover everyone's thought on some level, and even comparable with spoken & written langue. Based on this huge store, we should enjoy the similar freedom as in the scope of spoken & written langage.

Figure: 3-1, Tu Lou of Fujian Province, Southeast China

Figure: 3-2, Yao Dong of Shaanxi Province, Northwest China

Figure: 3-3, The Houses of Shibam, Yemen

Figure: 3-4, The Houses of Serifos, Cyclades, Greece

So, for Barthes' first problem, I would like to modify it and claim the right of using parole for the general public in the scope of built environment. Actually, by current social condition, the general public partly possess the right of applying built environment parole to create built environment langue although the "deciding group" hold the priority in producing process; but in the process of perceiving, the general

public share the same privilege of using and understanding built environment langue with the specialists.

Barthes' second problem is about the proportion between langue and parole in sign systems but actually falls into the scope of parole. Comparing with the infinite parole of spoken & written langage, he discovered that a series of poor-langue sign systems analyzed by him before only possess very restrict parole, further, we may deal *"paradoxically, with a langue without parole."*[168] Under this condition, Barthes became aware of a latent danger, which is that the langue of sign systems won't exist if insisting on the non-materiality of langue as rules. So, unexpectedly but also expectedly, Barthes paralleled the materiality with the langue of sign system. He claimed *"the couple langue/parole with a third, presignifying element, a matter or substance providing the (necessary) support of signification;"* and concluded that *"This would lead us to recognize in (non-linguistics) semiological systems three (and not two) planes: that of the matter, that of the langue and that of the usage."*[169] Conspicuously, this answer cannot prevent Barthes' successors to conjecture that he was going back to Hjelmslev at last.

In fact, solving problem by this way is not a compromising but a further realization of Barthes' idea of langue. Although he persist the non-materiality of langue after all, as what has been studied above, his analyses actually have proved the concrete materiality

[168] Ibid, p. 33.
[169] Ibid, pp. 33, 34.

of langue. Indeed, here maybe is necessary to emphasize again, if accepting that langue contains both the concrete aspect and abstract aspect, the dichotomy of langue/parole is strong enough to support semiological systems.

For Barthes this problem probably has been solved by introducing three panels system, but for built environment, what will be really crucial is not his answer but something else he mentioned in the process of deduction – the proportion between langue and parole. Because the built environment langue is extremely abundant and versatile, besides being built, they are also used and perceived by people. This point is different with other simple sign systems, in which, besides producing them, some sign langues are mainly for using, such as car system, and some sign langues are mainly for perceiving, such as traffic signals. So, to match with its langue, the built environment parole should be rich enough to be competent for this status as well. Obviously there are lots of different paroles for building and using, which includes design skill, construction technology, artistic craft and general knowledge of living, etc. But for perceiving – a typical psychophysical and psychological process, it is reasonable that another kind of parole – the spoken & written parole should be applied in the built environment scope. Although Barthes have mentioned this possibility when he talked about the langue without parole as *"which is possible, as we have seen, only because this langue is upheld by linguistic parole"*[170], he didn't seriously develop this idea. However in this thesis, this point will be very carefully studied and become one of the

[170] Ibid, p, 33.

most important principles of the universal built environment linguistics in the following chapters.

So here, after solving all these problems, the dialectic relationship between langue and parole in built environment can be consolidated. Firstly, Saussure's binary terms – langue and parole adapt to the built environment very well. However, it must be noticed that langue contains two aspects – the concrete panel as social product and the abstract panel as necessary convention. Actually for the built environment langue, by the current development of civilization, it should be a combination of the concrete built environment entities and abstract social institution. However, this social institution should be not only strong enough to guarantee running-well of the built environment, but also flexible enough to open to any personal idea. It should be something more subtle behind our life. Secondly, the very abundant and complex built environment langue should correspond with a competent rich parole, which includes all the professional built environment parole, general knowledge of life and the spoken & written parole. These two points are all crucial for establishing integrated universal built environment linguistics, and both will be carefully discussed in the later chapters.

What is more, as linguistics and semiology is launched as a research methodology to analyze the built environment signs, another essential substitution on terms must been highlighted as well, which is to formally introduce the terms of the "built environment langage", "built environment langue" and "built environment parole" into all former

various built environment language studies. However, because originally the term “langue” was translated into “language” in English, it will inevitably be confusing to use the word “language” to denominate the whole academic field as before. As a result, for establishing a totally comprehensive study-framework, and for avoiding the possible perplexity, the name of “built environment linguistics” is certainly more accurate than the “built environment language”. Additionally, in all the following chapters, the word “language” will be abandoned altogether. Instead, the terms – “linguistics”, “langage”, “langue” and “parole” will be applied from here to the end.

After all, clearly, based on the structural linguistics and semiology, integrating the former various built environment linguistics studies and further uncovering the essence of the universal built environment linguistics should be exercisable. Based on this chapter, the following step is certainly to explore the more detailed issues of langue and parole in built environment.

3.2 The Built Environment Langue

3.2.1 The Concrete Aspect of the Langue of Built Environment

"It is both a social product of the faculty of speech (langage) and a collection of necessary conventions that have been adopted by a social body to permit individuals to exercise that faculty."[171]

As what has been discussed thereinbefore, Saussure's definition of langue should be understood from two aspects – the concrete aspect as social products and the abstract aspect as necessary convention. Inescapably from this, the built environment langue also should abide them.

In the spoken & written linguistics scope, the concrete aspect of langue could exist either as physical books, tablets or any visible words attached to any surfaces or as verbally imparting experience, tales and skills; and the abstract aspect of langue could be official grammar, local idioms and contemporary slang. But in semiology scope, according to Saussure's forecast – *"Language (langue) is a system of signs that express ideas, and is therefore comparable to a system of writing, the alphabet of deaf-mutes, symbolic rites, polite formulas, military signals, etc."*[172] The word – "system" is crucial because it contains both meanings of the concrete part and the abstract part. Actually, the "system of signs" cannot be confused with the "group of signs". Because

[171] Saussure, De Ferdinand. *Course in General Linguistics*, op. cit., p. 9.
[172] Ibid, p.16.

the latter only indicates simple accumulation of visible signs but the former means organized aggregation controlled by potential rules. Essentially, since the built environment langue was, is and will be produced and accumulated in all the nations and cultures at any era; is a very rich deposition of human tradition and civilization; and can be recorded and learned by people, both the concrete aspect and abstract aspect should be complex.

As social product, the built environment is probably the biggest and most versatile and diverse. So its concrete side of langue should cover all objective parts of the built environment.

- Firstly, there should be the visible and tangible entities. In this scope, we consider all the building materials, completed architecture, urban district and landscape, and all scheme images, sketches and models, etc.
- Secondly, there should be the aggregation of knowledge. This scope includes all the presswork, manuscripts and verbal experience about built environment.
- Thirdly, it should be the aggregation of cognition. All active or passive behaviours of using and perceiving parts or whole of built environment belong to this scope.

These three parts make up the concrete aspect of the built environment langue. (Figure: 3-5) They are all tangible, sensible and learnable. They all have been endowed with different meanings. They are the material foundation of the “system of sign”. And I

would like to argue that they are all signs of built environment.

The concrete signs also can be subdivided into smaller ranges by both linguistics and semiology. In Saussure's linguistics, he emphasized the Signifier and Signified, which have been well-known already in post-modern architectural language study because of Jencks' reference. But in semiology, Barthes mentioned the Isologic signs and Non-isologic signs, which are still unacquainted in the built environment field. These two pairs of terms actually approach the scope of psychology. Behind them, there is the route to explore the "necessary conventions" of the built environment langue.

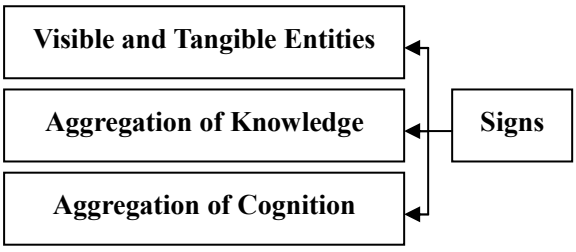

Figure: 3-5, the Concrete Aspect of Built Environment Langue

3.2.2 The Abstract Aspect of the Langue of Built Environment

3.2.2.1 Signifier and Signified

"Signifier and signified" were the binary subdivisions of the sign, Saussure firstly highlighted them formally. The signified indicates the *"concept"* or personal understanding of a sign. However, as Saussure mainly worked in the spoken & written

langage field, his signifier indicated a combination of *"sound-image"*[173]. In semiology, many signs are visible rather than audible, so the built environment is. Therefore Saussure's signifier and signified are apparently of the narrow sense and cannot fully adapt to the semiology scope. The scholar who carefully modified and systemically developed these two concepts into semiology was Roland Barthes.

Barthes chose a pair of broad sense terms to describe essences of signifier and signified. Inheriting from Hjelmslev, too, he argued that *"The sign is therefore a compound of a signifier and a signified. The plane of the signifiers constitutes the plane of expression and that of the signifieds the plane of content."*[174] This terminological exchange magnified their range in theory, and so put them in a positive situation to adapt the need of semiology. The "expression" is more ambiguous. It therefore could be any *"material"* containing all the *"sounds, objects and images"*[175]. On the contrary, the "content" is more accurate. It indicates the psychological activities emphasizing *"a mental representation of the 'thing'"*[176]. If focusing on the built environment scope, clearly the concrete side of the built environment langue are all appreciable and tangible, so they are certainly the signifiers. Meanwhile, they are designed and meaningful, so can arouse our psychological responses – the signified.

Signifier and signified uncover the potential difference between the real objects and

[173] Ibid, p.67.
[174] Barthes, Roland. *Elements of Semiology*, op. cit., p.39.
[175] Ibid, p.47.
[176] Ibid, p.42.

their psychological reflections; meanwhile very much imply the positive existence of the abundant different ideas to a same thing – such as a building.

3.2.2.2 Isologic Signs and Non-isologic Signs

Besides the "signifier and signified", Barthes also gave another kind of binary taxonomy to the sign. In his opinion, above the "signifier and signified", the whole scope of signs should firstly be divided into the "isologic signs and non-isologic signs". They share almost no matching characteristics. In the former conceptual scope of isologic signs, the signifier/signified cannot be dissociated and differentiated each other, therefore an imposed metalanguage is essential to understand the signified. However in the later conceptual scope of non-isologic signs, the signifier/signified can be separated clearly and the meanings are easy to handle just through spoken & written langage. Put simply, the 'sign world' just includes two divisions. However, if probing into the deep essence of the signs, a deeper relationship between the isologic signs and non-isologic signs will be discovered.

Penetrating into the original meanings of the two terms, these abstract concepts can be reverted to common social activities.

- Firstly, the isologic signs cannot be understood without the help of metalanguages. Moreover, the metalanguages generally are scientific researches, artistic experiences or free thinking per se. So, indeed, the process of

understanding the isologic signs can be converted to the process of studying the unknown scopes.

- Secondly, the non-isologic signs can be understood only by spoken & written langage. This means the non-isologic signs have been either discoursed or noted by others before and have been deposited in human civilization already. The process of understanding the non-isologic signs is the process of learning the known scopes.

Essentially, although all the artificial and natural things in the universe could be identified as signs containing meanings, not every single one can be rightly understood by humans from the first sight. Further, in our history, all the knowledge was developed step by step and everything, even the simplest one at present, must undergo a complex investigation. So, from unknown to known, from isologic signs to non-isologic signs, these are the ubiquitous transformations.

Some instances will be helpful to understand the transforming procedure. Firstly, it could be imaged that when the first group of primitive men emigrated from Africa to Europe in the prehistoric era, everything around them was fresh and unidentified. Maybe they stared at the strange animals and plants but could not distinguish which was edible. Maybe they stood in the snow and felt freezing cold but did not know how to keep their bodies warm. Their former experience on the African savanna became useless. Their simple langage and knowledge could not explain the new environment.

Undoubtedly, they saw everything's signified as same as the signifier, which meant all the original images or expressions of the objects. For them, all of these surroundings were isologic signs. Consequently, they began to try and study. Trying to eat the unknown fruits, trying to challenge the giant animals, trying to live in the caves, trying to sew the warm clothes, our ancestors understood the new world slowly by practice, even some of their attempts were lethal. Clearly, the practice of primitive men was the metalanguage they could use. After the study by metalanguage, they gained knowledge of the new environment and began to explain it by their langage. Step by step, they could sum up their experiences and teach their offspring to comprehend their new home. At this stage, the signified of sign became different from the signifier, whereby the latter were still the original images but the former have became the new explanations of them. Eventually, they were familiar with the environment, and settled in safely and confidently. The isologic signs became non-isologic at last.

What the primitive men faced up to were the signs of natural objects. However, similar to the primitive men's experience, transformations from isologic signs to non-isologic signs were also normal stories in the civilized period. The first English expedition that landed in India may have been startled by the great temples, which were isologic signs for them. But quickly, the former architectural & historical knowledge and the research methodology were adopted as the metalanguage to study the strange signs, and then the Indian architecture were recorded, described and introduced to Britain by English langage. The isologic signs became non-isologic. Moreover, even the spoken & written

langage per se can't be an exception. When a young Chinese student begins to study English, this new alphabetical langage is a totally different sign from Chinese characters. So it is isologic for him or her. Consequently, in the study process, the mother langage – Chinese – and a set of developed study methods inevitably are applied as a metalanguage. Little by little, after a long time of hard work, the student will master the English very well. At that time, the isologic English becomes explicable, meaningful and non-isologic.

Noticeably, the transformations between the isologic signs and non-isologic signs are ubiquitous. But different people will experience the transformations in different ways. To a single people or group at a certain moment, the transformation is simple and linear. This means that once a person has completed the conversion from an isologic sign to a non-isologic sign, it will be a very big chance for him or her to keep this sign non-isologic forever unless he or she lost their memory. The transformation will only happen once. However, if deducing the same transformation with a historical overview, it should be more complicated and different. Because not everyone learns something at the same time, it is possible that a same object can be recognized as a non-isologic sign or an isologic sign by different people earlier or later. If following the examples illustrated above, this phenomenon is also easy to grasp. For instance, the first group of primitive men completed a linear transformation from isologic signs to non-isologic signs. But they were not the only group emigration. To the later tribes, they would repeat the same story again and again. Secondly, the English expedition was only the

first group of English that stared at the temples and finished the transformation. But the aboriginals and other earlier visitors from other countries have been familiar with Indian architecture for generations. Similarly, before that Chinese student, millions and thousands of Chinese have experienced the transformation and have grasped the English langage. So for a sign, in a broad sense the border between the isologic and non-isologic is naturally ambiguous. Analyzing from the examples, there are also four common principles anchoring the phenomenon.

- First, to every artificial innovation, from the moment it is invented it is isologic to everyone except the original inventor. However, for every natural matter, at the moment it is discovered, it is isologic to anybody.
- Second, with the current knowledge accumulation, information communication and education development, the transformation is not predominant in those homo-langage circles. Excepting those professionals who explore the unknown by their special metalanguage – the research methodology, and infants who learn about the world by their metalanguage – various learning methods, most people have established their knowledge store and can learn the signs directly by their abstract spoken & written langage. Therefore, most of the surrounding signs are non-isologic for them.
- Third, to a sign introduced between different langage circles, the transformation will be very obvious to the langage circle in which the sign was introduced. Without translation or multi-linguistic capability, the people can transform an

isologic sign to a non-isologic one with variant signifieds by their different tongues respectively.

- Fourth, with translation or multi-linguistic capability, an isologic sign can be transformed to a non-isologic sign with same signified by scientific explanation or with various signifieds by religious enlightenment, artistic experience or individual tastes between different langage circles.

So, it is clear that, in an overall dimension, not only will an isologic sign transform to its corresponding non-isologic one, but also a sign that has been considered as non-isologic in a group still can be perceived as isologic in others. That implies that the linear transformation process should operate as a transforming circulation, which contains a constant conversion of "isologic – non-isologic – isologic". Especially in the built environment scope, this fact is definitely ordinary. Just as a totally new architecture style was non-isologic to the original architect but was isologic to all the others; then the local people firstly was familiar with the style and transformed it into non-isologic; consequently, over a long time, the visitors coming from different countries began to study and transfer it from isologic to non-isologic signs again and again, some having the local opinion but some differing until maybe one day in the future all the people of the world will be familiar with it. On that day, the circulation from isologic to non-isologic will reach the very end in spite of the possible existence of uncountable different signified.

3.2.2.3 The Emergence of Signification

Comparing the two pairs of terms – signifier/signified, isologic sign/non-isologic sign – together, some similar features will be detected. Firstly, the possible emergence of a large amount of different thinking to a single sign can be explained by both of them. Second, the operational mechanisms of them imply the process of signification. In fact, these two binary concepts can be investigated in one system.

The interaction between the transforming circulation of isologic sign & non-isologic sign and the transforming process of signifier & signified can be put in plain words from the analysis below. When a sign is isologic to somebody, the sameness between the expression (signifier) and content (signified) means a lack of necessary background experience and knowledge. This shortness limits the associations and imaginations that are essential to create the personal signified. The following transformation to non-isologic sign is a process of exploration and study, meanwhile is an effort to build a different signified per se. Therefore, it can be claimed that the transformation between isologic sign and non-isologic sign is synchronous with the transformation from signifier to signified, and vice versa. The transformation from isologic to non-isologic is the outer embodiment, but producing the signified from the signifier is the inner essence. Successively, if considering the total amount of the signs of the universe as in one system, with the ceaseless circulation among isologic signs and non-isologic signs, although the new things are constantly discovered at present and also will be continually discovered in the foreseeable future, it is still supposable that the total

quantity of the non-isologic signs will keep increasing, which inevitably responds to the decreasing of the quantity of the isologic signs until all the isologic signs have been transformed into non-isologic signs to everyone in the world. This is merely a logic tendency. So to say, there should be a theoretical prediction that in one moment of the extreme far future all the signs will be known and be considered as non-isologic by all of the people. That moment will just be the end of the circulation between isologic and non-isologic.

The whole process above can be demonstrated in following figure. Within it, the transformation from isologic signs to non-isologic signs compounds with the conversion from signifier to signified; a gradually narrowing grey circle indicates the total amount of the transformations and their theoretical end in the future. Then, in the entanglement among isologic and non-isologic, signifier and signified, what are produced belong to the numerous different significations operated in individual mind (Figure: 3-6).

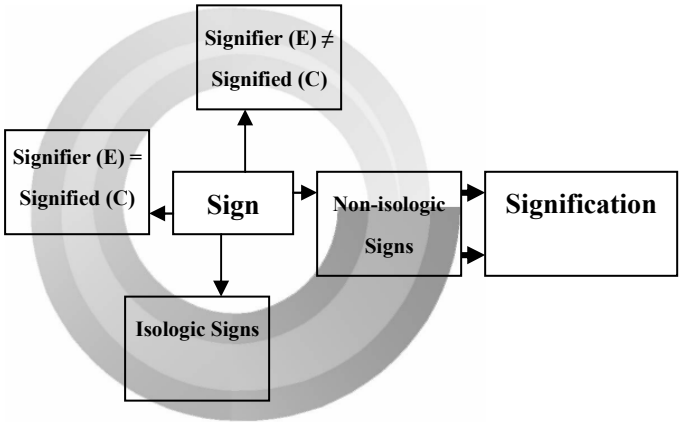

Figure: 3-6, Emergence of Signification

3.2.2.4 Barthes' Signification Mechanism

Substantially, the signification processes give birth to diverse individual attitudes. Pointing to this phenomenon, both the semiologists and deconstructionalists have given rich explanations. The theory of deconstruction firstly explored this psychological phenomenon in the literature scope. Derrida invented the concept of "dissemination" to clarify the elements. However in semiology, Barthes approached multifarious signs.

Barthes interpreted the concept of "signification" as an *"act which binds the signifier and the signified"*[177]. Referring to Hjelmslev's perspicuous formula – E (the plane of expression, signifier) R (relation) C (the plane of content, signified), he explored the operation and existence of the signification.

Tracing back to the literature review thereinbefore, Bathes' concepts of denotation and connotation have been briefly introduced. There are two kinds of different operations of ERC, which virtually composed the prime of his investigation on signification. By acute insight, his study unfolded an integrated signification process of the signs. In the following paragraphs a deeper study on Barthes' theory will be launched to explore the common essence of the signification of the built environment signs.

Before studying those two operations, first and foremost, we need to investigate the essential meaning of the ERC. Apparently ERC means a psychological conversion from

[177] Ibid, p.48.

E (signifier or expression) to C (signified or content). In the world of signs, the ERC process could be creating, using and perceiving processes, in which the E could be any existing objects and the C could be any results from operating them, physically or psychologically. The creating ERC is relatively independent and easy to study. However, in built environment, it is difficult to designate where the boundary between the using scope and the perceiving scope is, because it is too big and ubiquitous to fully escape from within. At present, as a person, we everyone has to more or less live in the built environment. Unconsciously or consciously, we are using them and perceiving them at the same time. Unlike some simple systems, for example the pen, after a almost unconscious recognition moment, which is a very short perceiving process, we purely use it to draw or write without considering its appearance, which is a pure using process, in built environment, for example a house, our understanding increases with continue living inside and we are increasingly familiar with ceaseless growing understanding. So perceiving is tightly bound with using in built environment, and I would like to apply the word – perceiving to indicate both. Based on this result, there are two ERC processes in built environment scopes, which will be studied respectively thereinafter.

- Firstly, it is the perceiving process. This ERC process can be further divided into three branches: sensing (using), learning (using) and research (using). The first one happens normally to everyone in daily life. It is only a simple appreciation to the surroundings. The second is the primary stage, which is about the basic education of indoctrinating the existing knowledge to us. Its E is

the current accumulation of knowledge and its C is people's individual comprehensions. According to our social regulation, the individual C should be same or at least similar in everyone's mind. Most of us will be involved in this stage sooner or later during our lives. The last is the advanced stage, which is about the innovative development in academe. Only a few people who can be called experts will be involved in this stage. Its E here is both the existing knowledge and research objects. However, C is the development in theory, which only exists in the form of mental thinking or the original manuscripts of those specialists. So what must be emphasized here is that the published books or academic papers cannot be considered as the C of the research stage because they are turned out by the publishing and printing technology, which is included in another ERC process that will be introduced thereinafter. The perceiving ERC only exists in theory.

- The second ERC process can be named as the creating process, in which the E could be any physical materials, documents or mental ideas and the C would be any real products. To be similar to the perceiving ERC, the creating ERC also contains sublevels and can be divided into two branches: the batch production and the mass production. The former emphasizes the individual creating activity and talent, such as the actions of design, drawing or sculpting; but the latter concentrates on the industrial level, which mainly depends on the mechanical works operated by different groups of employees on production line. Publishing belongs to this field. In both of these processes people receive and reproduce the

old E to the totally new C. Then this C, usually tangibly, is in fact the manufactured goods of working. The creating ERC exists in practice. It is the different point with the perceiving ERC.

Based on different individual aim, an ERC can substantially belong to both the creating ERC and the perceiving ERC. For example, if a gentleman just simply beholds a building and gets his personal impression, this ERC belongs to the basic level of the perceiving ERC. If an architect or artist who beholds the building not only gets the individual impression but also applies the impression as an inspiration to create his or her next project, this ERC is involved in the creating ERC as well.

In real life, these two kinds of ERC processes tightly combine together.

- On the one hand, these two processes interact with each other. If somebody goes to research the C of the creating process, the C will become the E of the perceiving process. On the contrary, the C of the perceiving process also can be used as the materials – the E of the creating process.
- On the other hand, these two processes also can be reduplicated one by one respectively. In the creating process, the products of a factory – the C – can be used as the materials – the E – in another creating process of another factory. In the perceiving process, someone's research achievements – the C – are usually reviewed or restudied by others and consequently become the new E of the new

topic.

So, as a result of the interactions, it is evident that the ERC processes are ubiquitous and intertwined in our society, which inevitably results in an extremely complicated ERC web covering every aspect of our lives. Barthes' research explained this intricate social phenomenon from a different logical angle, which was developed into a series of theories about the connotation and metalanguage systems. However based on the analysis about the perceiving ERC and the creating ERC above, they can be explored more comprehensively and thoroughly.

The first system essentially corresponds to the creating ERC. It means that one or some ERC systems could be considered as a single E of an actualizing ERC, of which these ERC systems were named as *"connotators"* and the whole system as the *"connotation system"*. Basically, this operation indicates that an expression (E) of a sign system could come from many different processes of signification. For the natural signs, such as animals, plants, waves, sun, and stars, etc., this process doesn't exist because they have been there before human-beings' first appearance in the world. What we can do for them is only to study their original expression (E). However for the artificial signs, especially in the built environment scope, this process is observable. For example, in a design stage, many optional plans finally can be realized to be a town. These former options are all creating ERC. Additionally, in a construction stage, the completion of a real building must depend on the cooperation among different professional works,

which are also all the different creating ERC. Virtually, in connotation system, all the earlier producing ERC processes can be colligated together, but their many corresponding signified (C) are always concentrated into a single signifier (E) of the actualizing ERC. It radically demonstrated that the different signifiers could be associated with the same signified.

The second system is firstly related to the perceiving ERC. This means that an extra ERC system could be only the C of the actualizing ERC, in which the process was repeatable and the whole procedure was considered as *"metalanguage"* by Barthes. Basically, this operation indicates that content (C) of a sign system can be explored by different metalanguage scopes, including scientific operations, free meditation and artistic expressions, etc., and these metalanguage studies also can be investigated by sublevel receivers with other metalanguage again. For both the natural signs and artificial signs, the operation works in the same way – to perceive. However, if digging this scope down to a deeper level, it is also evident that the metalanguage theory relates to the creating ERC tightly, because both developed in a linear way, the creating ERC also can be repeatedly practised in its own field or can be mixed with the perceiving process ERC. So, on this point, Barthes' metalanguage theory virtually provided strong support to the interaction and linear duplication of either the creating ERC or the perceiving ERC. It is more flexible than the connotation system. Additionally, to be corresponding with the connotation system, the signified (C) of the ERC in metalanguage can be understood as a signifier (E) of the following metalanguage, and

the signified (C) of this following metalanguage will become the subsequent metalanguage's signifier (E). Furthermore, all of those following study ERC can be considered as an integrated signified (C) of the original actualizing ERC. Theoretically, on the one hand, the development should be a ceaseless course in this system; on the other hand it also indicates that a single signifier can respond to so many signified.

Both the connotation system and the metalanguage system explored the interior essence of the signification. Combining these two sides together will result in an unlimited signification network. In the chain reaction between creating and perceiving, not only the transformations between isologic signs and non-isologic signs, signifier and signified are blended together but also it is actually a reduction of the whole human civilization. Additionally, these two systems also deciphered that the different ways could develop into a single result, and a single result can induce various understandings as well. Apparently, it is a logical clarification of the phenomena that people with different cultures, knowledge and personal interests will understand the signs in different ways. From another angle, even within this immense net, the feature of a permanent structure could be detected, more or less.

In Eisenman's paper – *Architecture as a Second Language, the texts of between*, he claimed a similar thinking of the 'metalanguage' – the concept of 'dislocating text'. Deriving from comparing architecture as a kind of 'second language' to people, Eisenman further argued that architecture could be treated as the 'text', which *"...is no*

longer a vague and generic term for meaning, but is in fact a term which always dislocates the traditional relationship between a form and its meaning"[178], and *"...never allows a single signified."*[179] Similar to Derrida's 'dissemination', the 'dislocating' was chosen by Eisenman to elucidate the same idea, but he especially focused on the architecture scope rather than Derrida's literature field. Eisenman denied the mono-correctness of the meaning of architecture coming from the authorized architects or critics. On the contrary, he believed that the endless new interpretations of architecture would be created by millions and thousands of occupiers, visitors and even passing travellers. For this, he claimed that *"dislocating texts refuse any single authoritative reading. They do not appeal to the logic of grammar or the reason of truth. Their "truth" is constantly in flux. Although they are directed, they are authorless. They are directed in the sense that they suggest a way of reading which seems to be internal to the object. But, at the same time, they deflect any single reading."*[180] Deeply analyzing Eisenman's theory, an interesting point can be detected. That is, what he refused was the single authoritative meaning rather than the authoritative meaning itself. This means that Eisenman never negated the existence of the original meaning of architecture coming from the designer. So, his thinking doesn't contradict with the 'connotation system' but is a strong support to the 'metalanguage'. The endless readings and the endless procedure of ERC are the same thing.

[178] Eisenman, Peter. *Eisenman Inside Out, Selected Writings 1963-1988,* (New Haven and London, Yale University Press, 2004), p.227.
[179] Ibid, p.228.
[180] Ibid, p.230.

Barthes' another important development about signs is the concept of "value", which is also an inheritance of Saussure and Hjelmslev and has been introduced before. Saussure called it the "*reciprocal situation*" among words, but Hjelmslev argued this point as the signs existing in context. Barthes developed this concept again and stressed the need to understand the real essence of any sign by pursuing its interrelationship and interaction with surroundings. In the built environment langue, this is one of the most important items, because architecture and cities are probably the artificial products that are most deeply influenced by context. Directly or indirectly, the context always plays the paramount role in design, construction or use. Actually it is impossible to understand any building, square or garden without regarding its tradition, location and history. Moreover there is also always a big possibility to design and build a disgusting building without careful study and respect of the local context. So, the "value" (or context) should be considered both in the "connotation system" and "metalanguage" without any doubt.

Concisely reducing the contents thereinbefore, a figure can be laid out to demonstrate the complex mechanism of the signification. In this figure, the basic structures of the connotation system and the metalanguage are welded together to form a simple but integrated signification process. One central ERC, which can be considered as some ordinary product, will be considered as the core to connect the creating ERC arranged at the upper part and the perceiving ERC arranged at the lower part. What is more, Barthes' Value also is inserted inside to run through the whole procedure. At last, what

is gestated out is certainly the signification (Figure: 3-7).

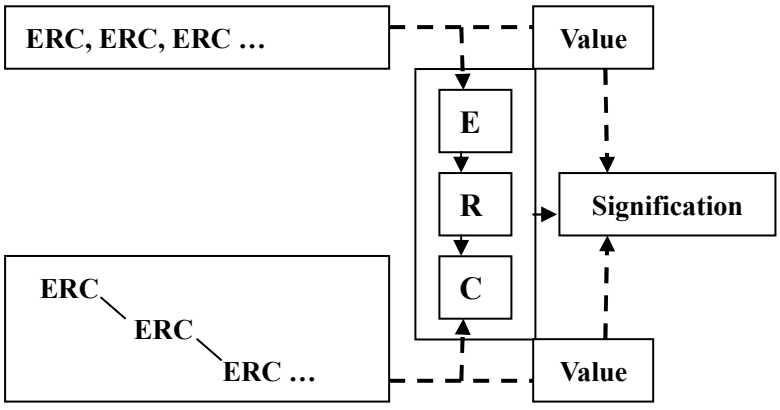

Figure: 3-7, the Signification Process of ERC

3.2.3 Model of Built Environment Langue

Summing up the content hereinbefore, an intact model of built environment langue can be established by combining the three figures – "Concrete Aspect of Built Environment Langue", "Emergence of Signification" and "Signification Process of ERC" together by two steps. Hereinto, the first step is to find out the abstract aspect – the rules – of the built environment langue, which indeed is composed of "Emergence of Signification" and "Signification Process of ERC". The joint between them is their common outcome – signification. Transformations between the signifier and signified, isologic signs and Non-isologic signs are psychological performance of any individual ERC, and the system of Creating ERC and Perceiving ERC designates the complicated network and ubiquity of the transformations between the signifier and signified, isologic signs and Non-isologic signs. Putting them together, what can be deduced out is the "necessary convention" (referring to Saussure) and "social institution" (referring Barthes) of the

built environment langue, which, according to the requests deduced before, (3.1) is either strong enough to guarantee running-well of the built environment, or flexible enough to open to any personal idea. (Figure: 3-8) It is universal, because of covering every aspect of our life within built environment, meanwhile it is subtle, because of equally providing both professional recommends and personal freedom to everyone. Based on this development, the second step – putting the concrete aspect and abstract aspect together is relative straight forward. By expanding the signs with more detailed category – the visible and tangible entities, the aggregation of knowledge and the aggregation of cognition, an integrated framework of built environment langue can be established. (Figure: 3-9)

Within this model, the main body of integrated built environment linguistics is scabbled because Saussure has endowed the langue with the first place in langage. Further, behind the model, many former attempts of seeking universal built environment langage can be detected. For example, Alexander's Pattern Language and Cullen's Townscape could be studied as attempts to explore the concrete aspect of langue; Jencks' theories about Post-modernism, Late-modernism and Neo-modernism are extension on perceiving ERC; Broadbent's Deep Structure embodies the characteristics of creating ERC; and the Form Grammar group focuses on potential rules behind the perceiving ERC as well. On this point, this model has shown its high compatibility with many other studies and should be a good foundation to explore another important part of built environment langage – the parole of built environment.

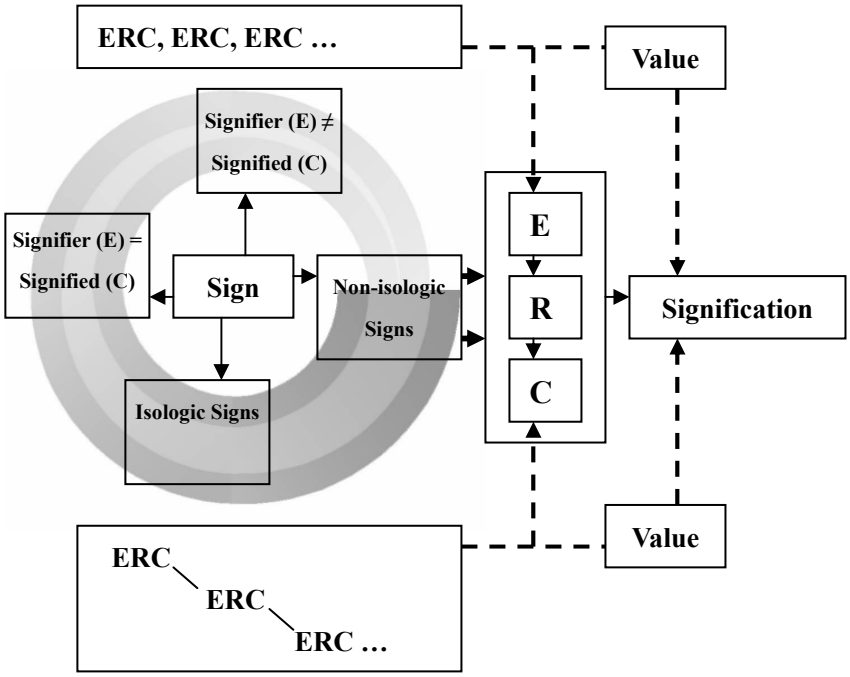

Figure: 3-8, the Abstract Aspect of Built Environment Langue

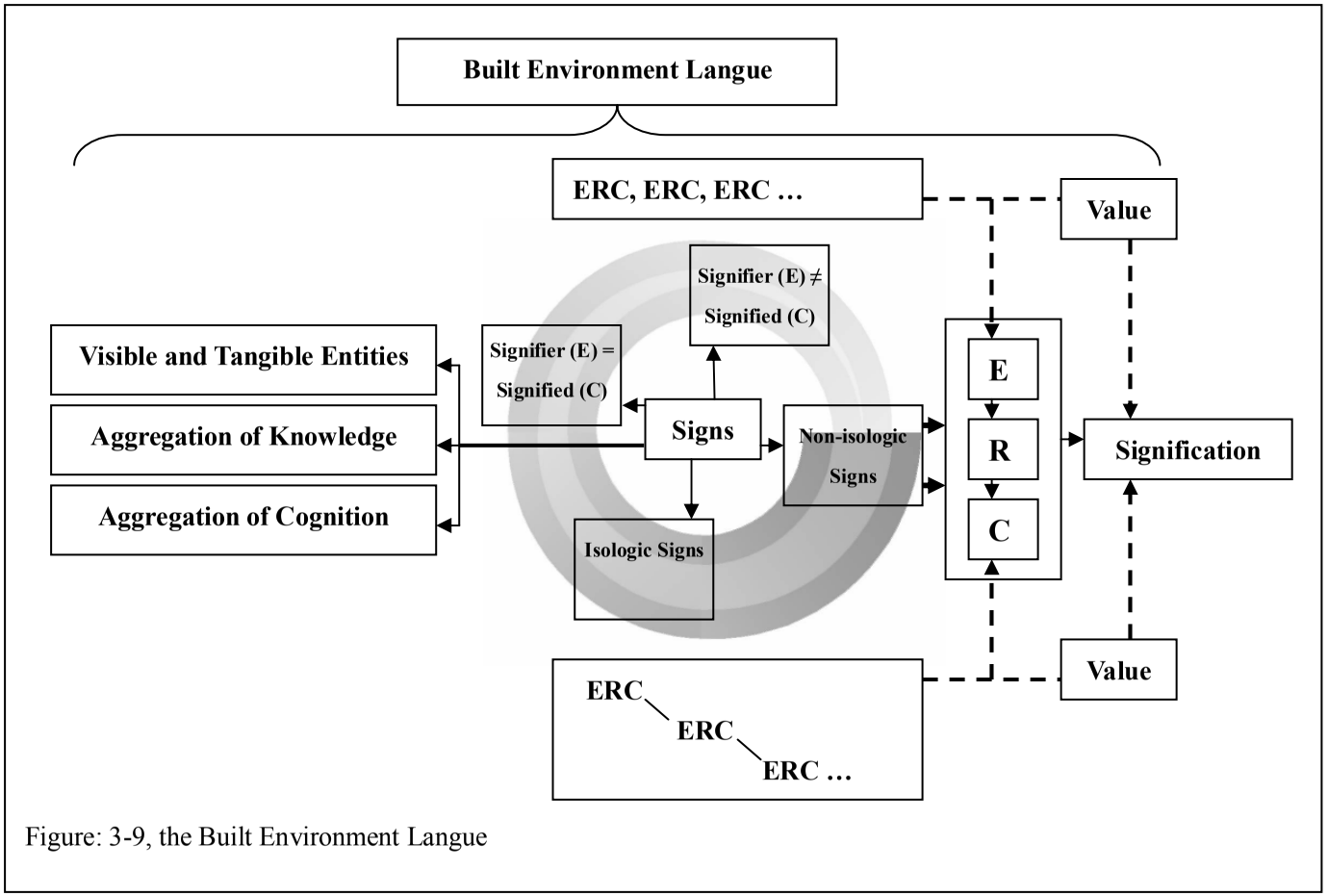

Figure: 3-9, the Built Environment Langue

3.3 The Built Environment Parole

3.3.1 Introducing the term – Parole into Built Environment

"Execution is always individual, and the individual is always its master: I shall call the executive side speaking (parole)."[181]

Parole *"is an individual act. It is willful and intellectual."*[182]

In Saussure's terms, parole plays a relatively flexible and pragmatic role compared with langue. If considering the langue as a huge storeroom in which the goods are continually increasing, then the parole is like the factory which not only ceaselessly produces new goods for the storeroom but also instantly use old goods from the storeroom.

Apart from giving definition, Saussure didn't want to discuss anymore about the linguistics of parole because he believed that parole cannot be studied. It is not unreasonable because, since it operates the old langue as well as producing the new one, theoretically, any parole will immediately become langue after being used by study-parole. This dilemma must be noticed in built environment as well, and the study of built environment parole should be very well controlled. It is deducible that, because in semiology, langue is a system of signs controlled by connatural rules, any effort of using parole is indeed handling signs under the rules. Furthermore, based on the

[181] Saussure, De Ferdinand. *Course in General Linguistics*, op. cit., p.13.
[182] Ibid, p.14.

discussion about the abstract aspect of built environment langue before, the rules controlling built environment scope can be divided into creating process and perceiving process, so the operation of built environment parole is in fact to practice the built environment signs by its creating process and perceiving process.

Based on this point, it is clear that there is a close relationship between parole and the theory of ERC. Firstly, signs are the common things that they all deal with. The operation to signs is called parole but the operation must abide ERC theory. Secondly, signification is the general outcome that they all turn out. The behaviour to crystallize signification in signs and to understand signification of signs is called parole but must go through ERC process. Between parole and ERC theory, the former is a term invented to describe the phenomenon and the latter is the principle to explore the essence. So, the concepts that have been brought forward to study ERC process also can be applied to explore the essence of parole. Thus following the creating ERC and the perceiving ERC, it is also reasonable to claim that built environment parole can be studied through two different orbits – the creating parole and perceiving parole as well.

3.3.2 The Creating Parole

According to the interpretation of the creating ERC, we have known that creating means the birth of new things. Hence the semiological creating parole means every measure of production. Barthes interpreted that the semiological parole is operated by some "*deciding group*" by "*logo-technique*", and is limited by both the "*signifying*

contract" and the "*determination of the community*". This point indicates that, on the one hand, the semiological parole is controlled by different professional groups; on the other hand, their producing activities must follow the special industry regulations and traditional habits. However, to the built environment, which is a huge and complicated system involving many subjects, its creating parole should be mastered not only by various professional groups but also by general public at present. Although maybe playing different roles, actually the whole built environment we live in is achieved by efforts of both of them. Their works form a complex system, in which some commonness can be discovered.

Whether to realize a city, to build a house or to cultivate a garden, all these working processes will inevitably experience the similar stages – design and construction. The former stage is usually controlled by architects or planners – professional or amateur – who can be generally called "designers". The later is often the responsibilities of engineers, builders or gardeners – professional or amateur – who can be generally called "operators". It should be emphasized that the border between these two stages is becoming ambiguous at present because more and more current projects cannot be completed by one or two people only, and cooperation between designers and operators has became closer and more essential than before. This results in the engineers, gardeners and builders taking part in the design process and in contrast the architects and planners also can't be absent from the construction stage. So, it is better to keep these two stages together as an integrated wholeness. Consequentially, according to this

point, the creating parole of the built environment should be further expressed as a more detailed term – the "design and construction parole". It is a metalanguage group including architecture, planning, civil engineering, horticulture and every specialty in built environment scope. Both the designer and operators realize parole by means of graphic images, models and construction, etc.

However, here one point must be noticed. It is that, although designers and operators sometimes can think and communicate only by professional metalanguage paroles, most of the time they still need to rely on the spoken & written parole anyway, which could be English, Chinese or French, etc. In fact, when the spoken & written langages have been developed to an advanced level, they inevitably became a basis of every subject. It is more complex and subtle than other metalanguage, so in civilized society, babies have to learn their own mother spoken & written langage as a foundation or method to approach more knowledge. Therefore, it is sound to give the spoken & written parole a position juxtaposing with the design and construction parole. People realize the spoken & written parole by speaking, writing and thinking.

3.3.3 The Perceiving Parole

According to analysis before, perceiving could be any means of using – receiving information. Thus the semiological perceiving parole includes any intellectual activities in our minds. According to the theory of perceiving ERC thereinbefore, whether facing up to a built environment signs, different people will probably have different

understandings. For instance, scholars may study an stone arch doorway by variant scientific methodologies; architects will notice the texture and colour of material, geometric proportion or its historical style; engineer will focus on its physical rationality and construction procedure; artists will study the relief and decoration; but more people probably just understand it as a gateway that go through. So the perceiving parole should be more flexible and personal. It means that, in built environment, any relative knowledge and intelligence can be applied to perceive built environment signs, simply or profoundly.

Thus, if keeping harmony with the creating parole, it is also reasonable to divide the perceiving parole of the built environment into non-spoken & written parole and spoken & written parole. The former branch indicates all human knowledge as scientific research, artistic experience, and free meditation. The later branch will keep the same characteristics that demonstrate in the creating parole branch.

3.3.4 The Indispensable Role of the Spoken & Written Langage

Summing up the analysis hereinbefore, a clear framework of the built environment parole can be established. Within it, the most noticeable characteristic is the important role that spoken & written parole plays inside. At the beginning of this chapter, the close relationship between built environment parole and spoken & written parole has been highlighted as one way to solve Barthes' "problems".(3.1) He has mentioned a potential combination between them, more detailed studied will be unfolded

thereinafter.

Based on the analysis of either langue or parole, it is clarified that constitutionally both creating parole and perceiving parole have to be practised with spoken & written parole. However, since the spoken & written langage is physically different from embodied built environment signs, actually, when people deal with signs, it is clear that the spoken & written parole is only a middle-media to ASSIST people's activities, and plays a vital ASSISTANT function in the semiological signification process. Based on this analysis, a proper assessment about the function of spoken & written parole operating in the built environment parole can be given: on the one hand, the spoken & written parole is an affiliated requirement but not an interior part; on the other hand, it is not very accurate to name the whole parole system with a prefix title of "built environment". Therefore, to avoid confusion between different academic scopes, it is better to describe the whole system as "paroles combo", which contains built environment parole and spoken & written parole.

This relationship between these two different paroles also can be proved from many former literatures. Barthes noticed it. Apart from his discussion about disproportion between langue and parole in semiological scope, (3.1), the second case can be found from his study of syntagm and system. The possible combination between signs and spoken & written language was highlighted again by study the complex systems. He argued that *"a system of objects, like the food or the garment system, can be relayed by*

a linguistic system proper…; we have in this case a garment- or a food-syntagm and a written syntagm (the spoken chain) directed towards them (the dress or the menu recounted by the ［spoken & written］ *language).”*[183] This viewpoint was responding to the former.

Besides semiologist, many scholars working in the built environment academia have brought forward the similar viewpoint, too. They not only proved the close relationship between spoken & written parole and built environment parole from other angles, but also explored the deep rules among them.

Some of them focused on the correlation between general spoken & written parole and built environments.

In the book – *Words and Buildings, a Vocabulary of Modern Architecture*, Forty established a convincible relationship between spoken & written langage and architecture. Through comparing with cloth fashion design, he found a three-in-one system of architecture and argued that *“architecture is a three-part system constituted out of the building, its image (photograph or drawing), and its accompanying critical discourse (whether presented by the architect, client or critic)…language is not something that simply gets in the way of architecture, but is a system of its own on a par with that of buildings.”*[184] Based on that, he enumerated five strengths of critical

[183] Ibid, p.68.
[184] Forty, Adrian. *Words and Buildings, a Vocabulary of Modern Architecture* (London, Thames & Hudson Ltd,

discourse to emphasize the superiority of spoken & written langage over architecture image, which are *"free imagination, different signifying, rich metalanguage, linear understanding and less intellectual contortion"*.[185] According to this viewpoint, Forty established an architectural dictionary. His study was not clearly related with semiology, but he elucidated the close relationship between spoken & written langage and architecture in the architectural langage scope. This is significant.

Hill[186] mentioned a union of three basic skills for a capable architect – drawing, writing and building, which is similar to the three-in-one system of Forty but Hill only emphasized the written aspect. In his paper – *Criticism by design: Drawing, Wearing, Weathering*, Hill said: *"...many of the most interesting architects write and draw as well as build. The relations between the drawing, text and building are multi-directional. Drawing may lead to building. But writing may also lead to drawing, or building to writing, for example. If everyone reading these words listed all the architectural works that influence them, some would be drawings, some would be texts, and others would be buildings either visited or described in drawings and texts."*[187] Within this quotation, Hill clearly revealed scenarios where people practise the written parole in both creating parole and perceiving parole.

In the book – *Invisible Cities*, by describing the imaginative conversations between

2000), p.13.
[185] Ibid, pp.37-41.
[186] Hill, Jonathan. 'Criticism by Design: Drawing, Wearing, Weathering'. *The Journal of Architecture*, Volume 10, No. 3 (2005), pp.285-293.
[187] Ibid, pp.285-286.

Kublai Khan and Marco Polo, Calvino established an illusionary ancient world bestrewn with the various cities, meanwhile operated a deep study of the potential relationship between spoken parole and built environment. To satisfy the Great Khan's big curiosity about those remote cities, Marco carefully narrated the appearances, skylines, streets, buildings, peoples, cultures, natural environments, topographies, and all other details he could remember to the emperor by words and gestures. On the one side there was ceaseless speaking; on the other side what arose was endless imagination. Kublai never had the opportunity to visit the cities Marco portrayed to him but this didn't prevent the emperor precisely grasping the figure and features of those cities. Obviously, Marco transformed the real images of cities into spoken paroles, and then Kublai visualized the spoken paroles as his own images. In this psychological procedure, speaking was the key. However, on a further level, Calvino also noticed the shortcoming of pure speaking in the information passing process. It was that only verbal communication is far from an accurate narrative. He depicted a dramatic circle whereby Marco communicated with Khan only by gestures and objects at the earlier time, and as time went by he learned the emperor's langage step by step and gradually used more and more spoken parole but less and less gestures to communicate with Khan until one day he could communicate with Kublai purely by speaking; however, then both of them felt that the conversation was less favourable than before because although *"words were more useful than objects and gestures in listing the most important things of every province and city – monuments, markets, costumes, fauna and flora – and yet when Polo began to talk about how life must be in those places, day*

after day, evening after evening, words failed him…"[188] so, little by little, they went back to depend on the gestures again. That is a palpable limitation of speaking parole. It is big enough to explain why people always use various body langages to assist their expressions and why the image drawings and models are paramount for architects. Calvino's work is strong proof to verify the impartibility of spoken parole from built environment parole as well as implying the importance of other built environment metalanguages in describing a concrete building or city. As he summarized via Marco's speech: *"'Memory's images, once they are fixed in words, are erased,' Polo said. 'Perhaps I am afraid of losing Venice all at once, if I speak of it. Or perhaps, speaking of other cities, I have already lost it, little by little.'"*[189]

Bachelard believed *"that the house is one of the greatest powers of integration for the thoughts, memories and dreams of mankind."*[190] In *The Poetics of Space, the Classic Look at How We Experience Intimate Places*, he emphasized the combination between spoken & written parole and built environment parole on the level of potential consciousness (memory, imagination and dream) rather than clear expressions (speaking and writing). Bachelard detected a relationship between thinking and houses and argued that *"In this remote region, memory and imagination remain associated, each one working for their mutual deepening. In the order of values, they both constitute a community of memory and image. Thus the house is not experienced from*

[188] Calvino, Italo. *Invisible Cities,* Translated from the Italian by William Weaver (London, Vintage, 1997), p.39.
[189] Ibid, p.87.
[190] Bachelard, Gaston. *The Poetics of Space, the Classic Look at How We Experience Intimate Places*, Translated from the French by Maria Jolas (Boston, Beacon Press, 1994), p.6.

day to day only, on the thread of a narrative, or in the telling of our own story. Through dreams, the various dwelling-places in our lives co-penetrate and retain the treasures of former days. And after we are in the new house, when memories of other places we have lived in come back to us, we travel to the land of Motionless Childhood, motionless the way all Immemorial things are."[191] Although Bachelard didn't plainly point out the participation of spoken & written parole, his words actually implied a psychological phenomenon that people who are influenced by the surrounding built environments always constantly think about them via spoken & written parole. They daily received and perceived the real streets and buildings, and stored them into their memories as the illusionary images, precisely or ambiguously. Then when they want to understand a new building or want to describe the old ones to anyone else the memories become a reliable source. It is the same phenomenon happened between Kublai Khan and Marco Polo. The transformations between built environment paroles and spoken & written parole are ubiquitous.

Other scholars contributed to the relationship between the built environments and literatures, such as poems and fictions.

Concentrating on the comparison between the lyric poems and architecture, Vesa[192] put forward the similarity between poem and architecture. She claimed that *"The same spatial concepts and the diverse motifs embodied in the universe occur in lyric poetry*

[191] Ibid, pp.5,6.
[192] Vesa, Marita. 'The Poem's Space – Poetry of Space? Reflections on the Relationship between Architecture and Lyricism'. *Architecture Design Art Path*, 2 (2001), pp.15-23.

just as they do in the tangible and spatial world of architecture"[193] in her paper – *The Poem's Space----Poetry of Space?* In support of this viewpoint, Vesa firstly differentiated the 'poetic language' from the 'normal language', in which the former can still generate the new meanings and inspire the readers' imagination, but the later cannot. Consequently, she detected the essential features of poetry and matched up them to architecture.

- Regarding the poem, Vesa wrote that *"…the poem is shaped not only by the internal structural elements of language but also the imagery of the poem, the poetic 'world'. The structural factors of poetic language are the syllables and sounds with tone colours, the words and word combinations, the stanzas and punctuation marks and pauses. Impinging on our subconscious are the poetic images, assorted symbols and metaphors, or figures of speech."*[194] This is a transformation process from an actual words world to an alluded image world.

- Regarding architecture, she argued that *"In the same way as the poem's 'space', architectonic space comprises structural elements whose key relationships are perceived by the beholder as rhythmic impressions. Architecture is experienced by mirroring, as it were, that rhythm in our bodies, creating it anew.*

  Space too, just like the language of poetry, can be experienced more deeply on a semantic level…architectonic space by its nature approaches poetic reality to

[193] Ibid, p.15.
[194] Ibid, p.16.

the extent that it forms a powerful, even a mythic, impression."[195] This is a transformation process from an actual image world to an alluded image and words world.

Similar to Bachelard, what Vesa noticed is the power of association in our minds. Either from the poems or from the built environment, people always receive the original impressions and reconstruct those to uncountable new imaginations. During the transformations, we turn to digest the meanings and gain understanding.

Kanekar[196] noticed a phenomenon of circulation among poems and buildings by a comparison study between Giuseppe Terragni's Danteum design and Dante's Divine Comedy. In his paper – *From Building to Poem and Back: the Danteum as a Study in the Projection of Meaning across Symbolic Forms*, he brought forward an interactive procedures, in which the real image and space of the Hagia Sophia building or other Byzantine architecture might inspire Dante to compose the illusionary image and space of the Inferno, Purgatory and Paradise; and on the contrary, the illusionary image and space of the Inferno, Purgatory and Paradise motivated Terragni to design the actual image and space of the Danteum building. Within the circle, from one side, the poet read and understood the buildings, and then reconstructed them by words in the poem, which, from entity to literature, was refining to the meaning of architecture. From another side, the architect created new architecture to reflect the deep sense of the poem,

[195] Ibid, p.16.
[196] Kanekar, Aarati. 'From Building to Poem and Back: the Danteum as a Study in the Projection of Meaning across Symbolic Forms'. *The Journal of Architecture*, Volume 10 (2005), pp.135-159.

which, from literature to entity, was sublimation to the meaning of poem. In the model of "architecture-poem-architecture", the literary works apparently were the intermediates. So, reading the description in Divine Comedy could be helpful to understand the soul of Byzantine architecture. However visiting the Danteum also could help someone to comprehend the profound metaphors in Divine Comedy. Within the conversions, meaning inevitably increased. Although Kanekar only analyzed one example, the similar phenomena could ubiquitously happen. This is the interactivity between architecture and poem, between the description of objective setting and the expression of subjective condition, between built environment parole and spoken & written parole.

To be similar to Kanekar's opinion, Psarra[197] concentrated on the relationship between architecture and fictional narrative. Based on Borges' fiction, Psarra launched an interesting contrastive study on the physical difference and psychological sameness of literatures and buildings. She believed that, although being created in dissimilar forms, *"... fictional and spatial narratives are inseparable from each other – one cannot think of Joyce's Ulysses without thinking of Dublin, and we cannot think of Hoare's Stourhead Garden or Terragni's Danteum (Kanecar, 2001) without thinking of Virgil and Dante."*[198] Actually, people will experience similar stories whenever they are immersed into the imaginational world of words or walk through the actual corridor of architecture. Psarra studied this phenomenon from two aspects:

[197] Psarra, Sophia. "The Book and the Labyrinth Were One and the Same' – Narrative and Architecture in Borges' Fiction'. *The Journal of Architecture*, Volume 8 (2003), pp.369-391.
[198] Ibid, p.370.

- On the one hand, buildings could be compared to novels. Entering the portal is like opening the cover. Following the interior routes arranged by the architect, people will taste the beginning, development, climax and end of architecture, and will apperceive the good and bad of the design. This is similar to reading procedure.
- On the other hand, fiction is also very much influenced by architecture. For instance, in Borges' fiction, *"First, by using architecture as a metaphor for navigating through the linear progression of his plots; second, by using architectural contexts that encompass the philosophical ideas that underline his stories; finally,* (similar to the symmetry design in architecture) *by applying a narrative structure based on symmetry that enables us to grasp the narrative elements simultaneously beyond their positions in the linear sequence of the text."*[199] Evidently, people's experience on architecture will be helpful to understand the essence and structure of fiction.

What Psarra focused on was the similar reading processes based on two different creating procedures. As she wrote: *"It suggests that although the reality of space separates architecture from literature, the mode in which they are experienced and certain tools of construction, concerning temporal sequence and the organizing framework of geometry, can be fundamentally close."*[200] This was a deeper study

[199] Ibid, p.371.
[200] Ibid, p.387.

penetrating into the psychological sense and philosophical idea rather than floating on the superficial phenomenon. However, whenever people apperceive architecture or novels, the common media is spoken & written parole.

During the National Architecture Week of 2002, a conference entitled: *Never Talk to Your Client about Architecture* was held at the University of Westminster. This was an open discussion about a paragraph of Mies Van der Rohe's words, spoken in 1959: *"Never talk to a client about architecture… He will not understand what you have to say about architecture most of the time. An architect of ability should be able to tell a client what he wants. Most of the time a client never knows what he wants."*[201] Related to this, a group of architects, artists and philosophers gave presentations. Because it was a topic obviously relating to the verbal, writing or drawing communication between architects and public, some of the papers are moderately useful to prove the multi-units of the paroles combo of the built environment.

In the first part of the paper – *Talk to Your Client about Architecture*, via a brief introduction of the British Library design process, Long[202] elucidated the importance of communication with clients. The author believed that through deep conversation with clients – talking and listening, the architect will grasp the unique demands and features with which the building should be satisfied. Especially in the case of one of the

[201] Watson, Victoria. 'Never Talk to your Client about Architecture – Introduction'. *The Journal of Architecture*, Volume 7 (2002), p.313.
[202] Long, M.J. and Wilson, Colin St John. 'Talk to your Client about Architecture'. *The Journal of Architecture*, Volume 7 (2002), pp.339-348.

most functional architecture – library, although communicating with each other only by spoken & written langage rather than in architectural professional ways, Long still learned more from the clients. From the building components to the plan arrangement, from function organization to interior physical environment design, what the clients talked about were all the vital parts for a successful architecture.

In opposition to the positive role that the clients play in Long's case, Tusa[203] unfolded a negative aspect of the clients. In the paper – *From the Viewpoint of a Client*, Tusa emphasized that sometimes the failure of a building occurred just because *"The clients never behaved as the 'owners' of the scheme. They took the architect too seriously…gave him free rein and dared not intervene, because they believed 'the architect was right'!"*[204], which means that they don't dare to talk with their architects. Focusing on this point, Tusa encouraged both sides to communicate with each other. On the one hand, architects should inspire their clients to express their opinions and demands for the building, and even help them to discover and to solve the potential problems. On the other hand, the owners also need to state their thinking clearly, logically and changelessly.

Similar to Tusa, Watson[205] also highlighted that the architects should promote their clients to modify the original designs. By a review on Mies Van der Rohe's practice,

[203] Tusa, John. 'From the Viewpoint of a Client'. *The Journal of Architecture*, Volume 7 (2002), pp.349-353.
[204] Ibid, p.350.
[205] Watson, Victoria. 'Mies Van der Rohe: a Drawing and a Letter to a Client'. *The Journal of Architecture*, Volume 7 (2002), pp.355-360.

she wrote: *"Mies is advising his client to see the design as being like a clean piece of paper, an unspoilt surface, which the client is to write upon and thereby to alter."*[206] Undoubtedly, the measure and media of alteration should be same with Tusa's communication – drawing or the spoken & written parole.

Summing up the theory analysis and literature reviews above, step by step, the paramount function of spoken & written parole in built environment scope becomes progressively clear.

- In creating parole, people use it as an assistance of professional built environment metalanguages to produce new built environment langue. It could exist as design manuals or construction documents etc., which aid the professional design and construction parole. It also could independently exist as books, papers, speeches, ideas, presentations or conversations etc., which contribute to the theory development of the built environment.
- In perceiving parole, people could use every existing langue deposit as their parole to sense a built environment langue, such as a building, a bridge, a village or a square. Maybe picking out other metalanguages, maybe only applying their mother tongues, but no one can practise without approaching the spoken & written paroles.

[206] Ibid, p.360.

Substantially, because of the consecutive participation of spoken & written parole, the built environment parole becomes rich, practicable, understandable and unauthoritative. What's more, based on the analysis on the ERC process of langue and the close relationship between parole and langue, it is not improper to claim that spoken & written langue is undetachable in built environment langue, and even spoken & written langage to built environment langage. So, briefly, in the whole linguistic scope, a very important assistant element that keeps built environment linguistics dynamic is evidently spoken & written langage.

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Accordingly, after the theoretical analysis in this section, it is evident that a pyramid-structure model of parole relating to built environment can be achieved. As the top of pyramid-structure, this part should be wholly nominated as a 'paroles combo' to indicate the conspicuous connection between built environment parole and spoken & written parole. However, referring to the danger of studying parole mentioned by Saussure, (3.3.1) the further more particular partitions must be careful to keep from intrusion into the scope of langue. Based on this idea, except the abstract terms applied to nominate different paroles, all detailed descriptions about real practice or concrete parts in built environment should apply gerunds rather than nouns to emphasize that it is an act. So:

- Firstly, there are creating parole and perceiving parole following the parole
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combo.

- Then, the creating parole contains design and construction parole and spoken & written parole. And the perceiving parole includes non-spoken & written parole and spoken & written parole scopes.
- Then it is the third level:

1. In the scope of creating parole, design and construction parole can be subdivided into skill of design and skill of construction. The former contains a series of design techniques, such as analysing, drawing, painting, comparing, modelling, sketching and computing, etc; and the latter contains building techniques, such as laying, casting, fixing, installing, building and cultivating, etc. What is more, spoken & written parole is embodied as writing, speaking and thinking.
2. In the scope of perceiving parole, non-spoken & written parole includes scientific researching, artistic experiencing and free meditating; and spoken & written parole is as same as in the creating parole.

Summing up these results together, the pyramid-structure can be illustrated in the following figure. (Figure: 3-10) The paroles combo is impetus of the whole built environment linguistics theory. It abides the rules of built environment langue but activates the entities of built environment langue. Between the interactions of them, it is a field of built environment langage.

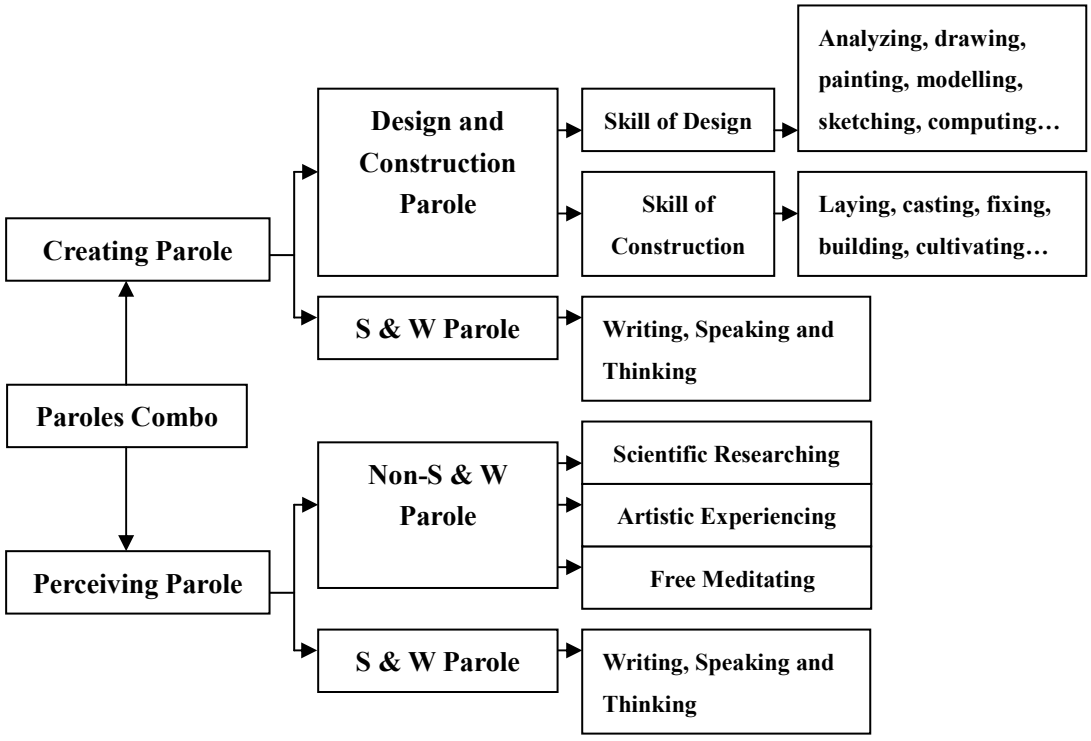

Figure: 3-10, the Paroles Combo of Built Environment

3.4 The Integrate Framework of Built Environment Langage

Langue and parole are the two aspects of langage in linguistics. Saussure didn't believe that langage can be studied because *"it is not homogeneous"*.[207] That is true in that its two facets – langue and parole share no same attribute. In a dilemma, the former is independent thing we can operate, but the latter indicates ways of operating the former. So by linguistic concept no one can use one of the operation ways (parole) – study – to study operation ways (parole) because they will be immediately deposited in langue if being studied. Thus parole cannot be studied. Then, clearly if half of the langage – parole can not be studied, there is no way to study the langage at all. However, according to the former chapters, it is clear that, although parole cannot be explored, it is not unknowable; on the contrary, it indeed can be well defined. So, if parole can be defined and langue is objective, the possibility of well defining langage is also optimistic.

The key of defining a langage is to find out the relationship between its langue and parole. Based on the outcomes of former chapters, it is not very difficult. In Saussure' linguistics, langue is "both the instrument and the product" of parole. Parole apply existing langue and produce new ones but must obey the rules of langue, which was called as "necessary convention" by Saussure but "social institution" in Barthes semiology. Barthes didn't introduce the term – langage in his theory but elucidated the

[207] Saussure, De Ferdinand. *Course in General Linguistics*, op. cit., p.19.

applications of the langue-parole relation in signs world, which actually indicates the existence of sign langage.

In built environment scope, langue is a combination of the concrete aspect – built environment signs – and the abstract aspect – ERC network. And parole is embodied as a parole combo containing creating part and perceiving part. From the langue side, ERC network can be analyzed to creating ERC process – the connotation panel – and perceiving ERC process – the metalanguage panel, which just correspond with the creating parole and perceiving parole. From the parole side, the creating parole and perceiving parole can be further subdivide into many detailed disciplines, which all directly deal with the concrete built environment signs and never go beyond the rules of ERC network. By this relationship, the parole combo and langue of built environment can be tightly connected together. And a model of built environment langage also can be very well defined as an integrated object. (Figure: 3-11).

Numerous scholars have already noticed the different mechanisms of creating and perceiving in the signification process. Although many of them didn't clarify this phenomenon from semiology viewpoint, actually the existence of creating parole and perceiving parole has been illuminated from another angle. In fact, according to the definitions of built environment langue and paroles combo, those papers researching built environment can be considered as investigating the signified (C) of langue by perceiving parole; and those papers introducing built environment can be recognized as

efforts to unfold the creating parole relating to the signifier (E) of built environment. So, from most of the publishing works in built environment scope, supports to the relationship between langue and parole can be clearly detected. Hereinto, some are very strong representatives.

For example, in Psarra's[208] another paper – *The Parthenon and the Erechtheion: the Architecture Formation of Place, Politics and Myth*, the author provided an elucidation as to the possible creating paroles of two famous architectural ruins on the Acropolis. As a professional reader, Psarra not only grasped the actual meanings that ancient architects wanted to say by her own perceiving parole, but also discovered how the Greek architects handled two different creating paroles in design. She found that, as religious architecture, both Parthenon and Erechtheion were blended with sculpture, relief, painting and holy sites together. But the former *"embodied narrative pictorially through sculpture"*, which *"corresponded to a different phase in divine and human history, from Athena's birth (pediments), to Homer's epic where the gods joined the heroes in acts of procreation (metopes) and finally to Athens in the fifth century where mortals achieved heroic status, joining the gods at the east side of the frieze."*[209] This is a linear model. The latter one *"mediated archaic myths through spaces, emblems and fragments"*[210], in which time was solidified at the Bronze Age. This is a dotted model. Through the diverse creating paroles, both of these two buildings recorded honour and

[208] Psarra, Sophia. 'The Parthenon and the Erechtheion: the Architectural Formation of Place, Politics and Myth'. *The Journal of Architecture*, Volume 9 (2004), pp.77-104.
[209] Ibid, p.93.
[210] Ibid, p.93.

magnificence of ancient Greek civilization. Although *"The two buildings and their contrasts, regular and irregular, visible and invisible, formal and informal, carried oppositions between their respective stories like universal and particular, contemporary and archaic, generic and variant"*[211], they reached the same goal by different routes.

As an architectural historian, Psarra's job is to dig out the truth of original creating parole of these ancient buildings. This is concentrated on the connotators of the signifier (E). But as same as anyone else, she meanwhile has to launch her own perceiving parole to study the object and to obtain her own signified (C). This is also a practice of the metalanguage. Actually, from her work we can detect the union of the parole combo and langue of built environment.

The built environment langage is developed from general linguistic and semiological theories, and has inherited the feature of being general, too. It actually sets up a framework of holistic built environment linguistics. As a universal theory about built environment, the langage framework sums up the commonness of built environment and is a foundation for other detailed studies in different directions. By this, both the preceding dictionary composing group and the grammar study group (2.4) can be interpreted by it and be embedded in it.

Besides carrying the previous achievement, the langage is also an incubator for further

[211] Ibid, p.96.

development. Based on the contents in this chapter, although the mechanism of built environment linguistics operation and the elements of the emergence of the various significances can be interpreted, it is still too abstractive to adapt the practice. What is more, apart from the unchangeable theoretical terms – langue and parole, the closest aspect with our life – significant process is only explored on a basic theoretical level without extending to more pragmatic extent. So according to this condition, it is clear that the next step is to deeply study the significant process and push the linguistics theory more towards a pragmatic level.

So with this outcome, this thesis will successively developed into the next chapters but here, if tracing back to Hugo's dictum mentioned at the beginning of this Chapter, it is reasonable to draw a solution that the relationship between "book" and "architecture" should be positive rather than negative. We also can claim:

"This will enhance That. The spoken & written langage will enhance the built environment langage."

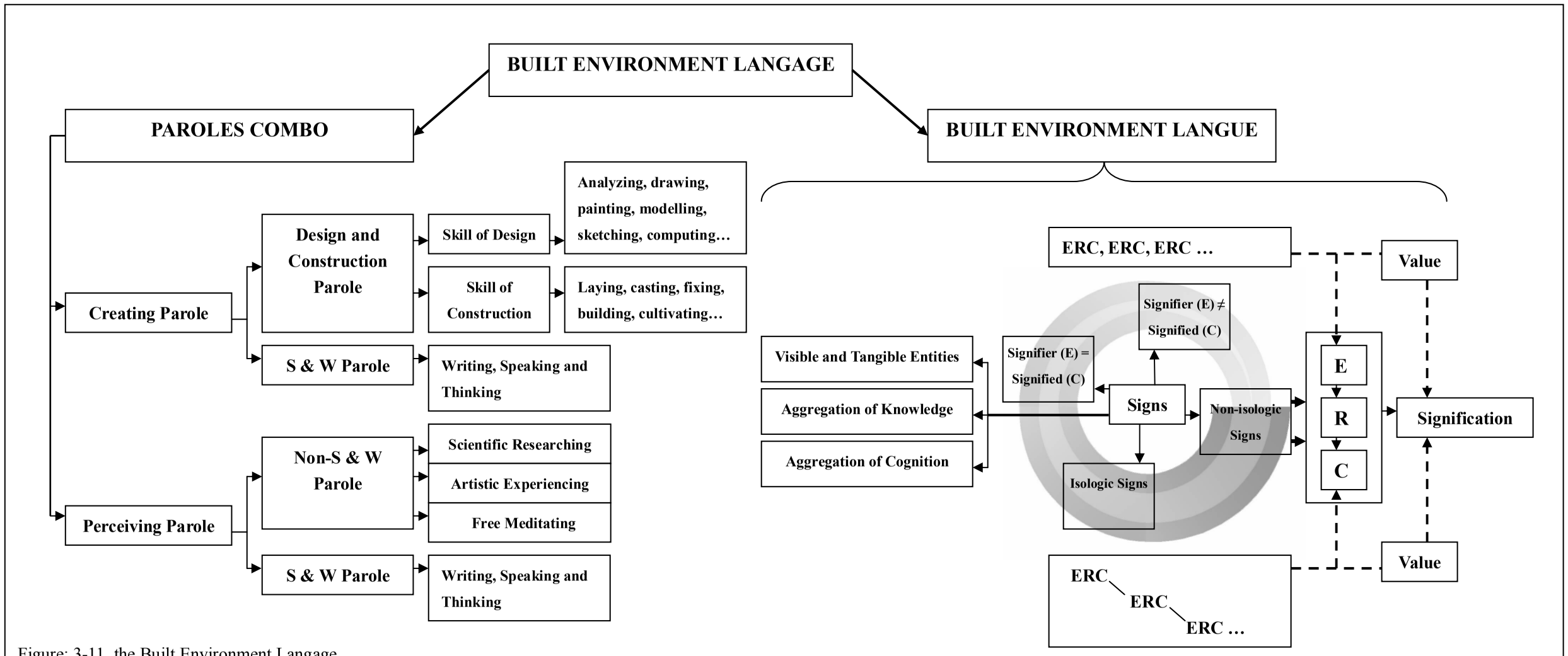

Figure: 3-11, the Built Environment Langage

4 The Significant Operation of Built Environment Linguistics

In the last Chapter both the objective side and the subjective side of built environment linguistics are roundly studied. The objective aspect means the independent existence of built environment linguistics, which is beyond humans' control. The term "Langue" represents it. On the contrary, the subjective aspect means the active operation of built environment linguistics among people. The term "Parole" stands for it. Between the langue and parole, signification phenomenon plays a role of bond to connect them together as a whole – the langage, as well as realizing of the communication by the built environment.

Actually, the elements of signification phenomenon also have been explored thereinbefore. The study of parole provides a holistic concept and a set of special terms for it. But in the study of langue more deep institutions are exposed. Firstly, the circulations between isologic signs & non-isologic signs unfold the exterior substantial embodiment of the signification. What is more, the transformation of ERC uncovers the interior theoretical essence of it. So, between these two poles, there should be the reality of more practicable operations, which is essentially under the control of the parole and closer with people's real lives. This part is naturally related with people's individual and diverse thoughts.

Some theories have been developed to explain this complex phenomenon. Derrida developed the theory of deconstruction to explore people's minds. However in both the works of Saussure and Barthes, more detailed and semiological terms were put forward in the binary way. So, thereinafter, for studying the signification, it is logical to analyze and integrate these theories together. Moreover, the only aim of all these efforts is to establish an intact framework of the significant operation of the built environment.

4.1 The Syntagmatic Axis and the Systematic Axis

When exploring how the meaning of a mansion reflects in personal minds, according to the development of philosophy, probably the most famous academic interpretation was the theory of deconstruction. However, some viewpoints of it still can be modified for more comprehensive adaptation.

Derrida's deconstruction approaches this phenomenon and provides a reasonable explanation. Through his comparison between *"dissemination"* and *"polysemy"*, of which the former means remaining *"fragmented, multiple and dispersed"* but the latter means *"can be gathered together and totalized"*[212], Derrida thoroughly destroyed the authority of the authors and returned the totally freedom of decoding the content to readers. He believed that the infinite multi-meanings of text will endlessly increase along with the rise of the number of readers. It just implies that different people will have different ideas from the text. Derrida theoretically opened a new door to probe the indeterminacy of perceiving signs. On this point, his theory is universal and general.

However, if directly applying the deconstruction theory to interpret the phenomena of perceiving the built environment langue without any modification, one obvious obstacle should be noticed. This is the indefinable characteristic of deconstruction. As

[212] Howells, Christina. *Derrida, Deconstruction from Phenomenology to Ethics* op. cit., pp.78-79.

what has been reviewed before, (2.2.6) Derrida refused to give the term – deconstruction a clear definition because he intentionally wanted to avoid the paradox chaos of deconstructing his deconstruction. So in his opinion, deconstruction cannot be any analysis, critique, method, instrumentality, rules, act and operation, and only could be looked as a kind of act, automatically happened everywhere. That is an interesting point, from which we can sense some similar aspects with the term of parole. What is more, if Derrida rejected the application of deconstruction as a research method, it is better to follow him for theoretical preciseness and apply deconstruction only as a phenomenon happening in built environment but seek help from other scope. Fortunately, both Saussure and Barthes have explored in the same scope. Hereby, for the built environment linguistics, a semiologicalization of deconstruction can be realized depending on them.

In Saussure's linguistics, he gave the signification two developing axes corresponding to two sorts of different *"mental activities"*. One was named as the *"syntagmatic axis"*, which is a series of actual signs perceived in a linear way. In spoken & written langage, it could be a speech chain or a words chain. Another was nominated as the *"associative axis"*,[213] which is a reservoir of mnemonic signs stored in people's minds. In spoken & written langage, it could be the synonyms, antonyms or other related expressions of a word. Although Saussure mostly worked in the field of spoken & written linguistics, unexpectedly he gave a wonderful example of

[213] Saussure, De Ferdinand. *Course in General Linguistics*, op. cit., p.123.

architecture to explain the concepts of syntagmatic and associative axes. That is about the Order. He said: *"From the associative and syntagmatic viewpoint a linguistic unit is like a fixed part of a building, e.g. a column. On the one hand, the column has a certain relation to the architrave that it supports; the arrangement of the two units in space suggests the syntagmatic relation. On the other hand, if the column is Doric, it suggests a mental comparison of this style with others (Ionic, Corinthian, etc.) although none of these elements is present in space: the relation is associative."*[214] This instance illuminated a passage to directly introduce these two concepts into the semiology, especially into the built environment sign study. Then, Barthes consolidated it. He analyzed the applicability of the syntagmatic axis and associative axis in semiology as well as renaming the associative axis as the "systematic axis". Further, in his opinion, because *"both syntagm and system are necessary to all discourse,"*[215] it is clear that the signification process of built environment can be fitted inside as well. In the built environment langage, syntagmatic axis is actual reflections of the combinations of signs in people's minds, and systematic axis represents any related imaginations.

Clearly, both the syntagmatic axis and the systematic axis are the mental activities of perceiving signs. So pointing to the signs per se, it is predictable that, in real life, these two axes will deal with the explicit way and implicit way, and lead to different results. This point can be gradually sensed out from studying a given scenario. For

[214] Ibid, p.124.
[215] Barthes, Roland. *Elements of Semiology*, op. cit., p.60.

example, when people promenade through a pergola or stand in a pavilion, consciously or unconsciously they will perceive the built environment signs around them. The syntagmatic axis and systematic axis will consequentially be in active.

For the syntagmatic axis:

- If they behold some ordinary elements that they are familiar with, such as the carving bars, columns, pitched roofs or heath parterre, etc., a series of actual impressions with objective descriptions will be formed in their minds. It is one side of the practice of syntagmatic axis, which always provides the understandable information for our brains.
- If they perceive some extraordinary elements that they rarely see or have never seen before, such as a pioneer sculpture, a strangely shaped arbour or some exotic flora, etc., the actual impressions will be formed only with some simple interjections that are instead of the detailed explanations. It is another side of the practice of syntagmatic axis. Under this condition, they provide very simple but clarified information for our minds.

Both of these two tendencies in the syntagmatic axis indicate actual reflections of the built environment signs in people's minds. Although, to the ordinary signs and extraordinary signs, the final interpretations are definitely different, those reflections are all explicit, whether simply or intricately. But in the current world, which is full of change and innovation, facing new things has become a habit to people. Under this

situation, it is impossible to capture an extreme chance that only one of these two tendencies could happen alone. Actually, in most time they are mixed together and interactive.

For the systematic axis:

- To those ordinary elements, after actual impressions and objective depictions of the syntagmatic axis, they can keep the original information they have obtained from the surrounding signs without any further association; or optionally launch their imaginations if they want to connect the signs with their former experience and gain deeper comprehension. The later associations are always clear and tangible because they are empirical, such as some pergolas that they have visited before, some pictures of pavilions that they have seen from magazines or the similar parterre that they are cultivating in their own backyards.
- To those extraordinary elements, after actual impressions and simple interjections of the syntagmatic axis, large amount of imagination will be shaped to help comprehension. They are always free and go-as-your-pleasure. Without any shackle, this kind of activity of systematic axis results in the ambiguous, irrational but unlimited range.

Both of these two tendencies indicate imaginations to built environment in human minds. Same with their corresponding syntagmatic tendencies, any one of them also

cannot exist alone without companying with another at present. Deductively they interact together to form an integrated systematic axis.

Summing up the analysis above, four general characteristics of both the syntagmatic and systematic axes can be detected:

- Firstly, the operations of these two axes are inter-twisted rather than separated.
- Secondly, the syntagmatic axis always comes earlier than the systematic one.
- Thirdly, both the syntagmatic and systematic axes can be applied to treat the ordinary signs and the extraordinary signs.
- Fourthly, both the syntagmatic and systematic axes induce explicit signified, but implicit signified can come only from the systematic axis.

Barthes also noticed the first and second points. About the first one, he claimed that *"the syntagmatic and associative planes are united by a close relation."*[216] But about the second point Barthes expressed a slightly different opinion, in that he believed that *"it is logic to begin the work with the syntagmatic division, since in principle this is the operation which supplies the units which must also be classified in paradigms; however, when confronted with an unknown system, it may be more convenient to start from a few paradigmatic elements empirically obtained, and to study the system before the syntagm; but since we are here dealing with theoretical elements we shall keep to the logical order, which goes from the syntagm to the system."*[217] Clearly,

[216] Ibid, p.59.
[217] Ibid, p.61.

Barthes kept the priority of syntagmatic axis in his study for more logical development in theory. But his persisting point – that the systematic axis should be predominant when practises in unknown fields – still needs to be noticed. Barthes didn't give tangible examples to elucidate what the unknown system means. However, if analyzing only from his original words, it should be the system which merely can be studied from the previous empirical paradigmatic elements, and besides those experiences, no any actual impressions of it can be sensed out. In this way, it should be only the abstract and immaterial knowledge or thinking rather than a visible, physical and solid sign. Based on this point, in fact Barthes was not successful in giving a comprehensive interpretation. Essentially, the reasonable explanation of "going from syntagm to system" is that the semiology focuses on only the visible and tangible signs rather than the theoretical development in logic order as he said. So, it could be clear that, when studying the immaterial and intangible subjects, such as meditation and rumination, systematic axis will be deployed before syntagmatic axis; however, when dealing with the visible and tangible signs, syntagmatic axis is always operated first. Evidently built environment signs are tangible and material. Therefore, the syntagmatic axis always keeps its predominance over the systematic axis in built environment langage.

Both the third and the fourth points have been proved in the analysis of these axes above. Here, finally, if based on all the four points to rethink about the whole phenomena together, and this time following the dimension of sign rather than that of

axes, a more comprehensive outcome can be achieved.

- To sense the ordinary signs, syntagmatic axis will be operated firstly and induces complex explicit understandings, which are actual impressions and objective depiction of the original signs. Then, totally by people's wishes, the following systematic axis could induce complex explicit signified that is the empirical associations, or does nothing.
- To sense the extraordinary signs, syntagmatic axis will perform as simple explicit signified, which is actual impressions of the original signs and straightforward interjections. Then the consequent systematic axis will unfold a complex implicit range of signified, which could be infinite imaginations.

Therefore, if gathering the performances of ordinary signs on both axes, it is clear that they always lead to explicit results; on the contrary, an aggregate of extraordinary signs will imply both explicit and implicit results on the syntagmatic axis and systematic axis respectively.

Furthermore, according to the analysis about the syntagmatic axis and the systematic axis above, a framework of the signification process in built environment can be established (Figure: 4-1). Within it, certainly with the help of current global communication and education systems, majority of the common signs in built environment scope will induce similar reflections to people. But meanwhile, the

phenomenon of different people with different ideas of a building still cannot be ignored. They can happen within the unusual signs dimension and only on systematic axis.

In brief, this is the first step to explore the real operation of the signification in built environment linguistics as well as an effort to achieve the semiologicalization of the deconstruction theory. Here, the ordinary signs can be nominated as "the explicit dominance" and the extraordinary signs as "the implicit dominance" in the built environment academic field.

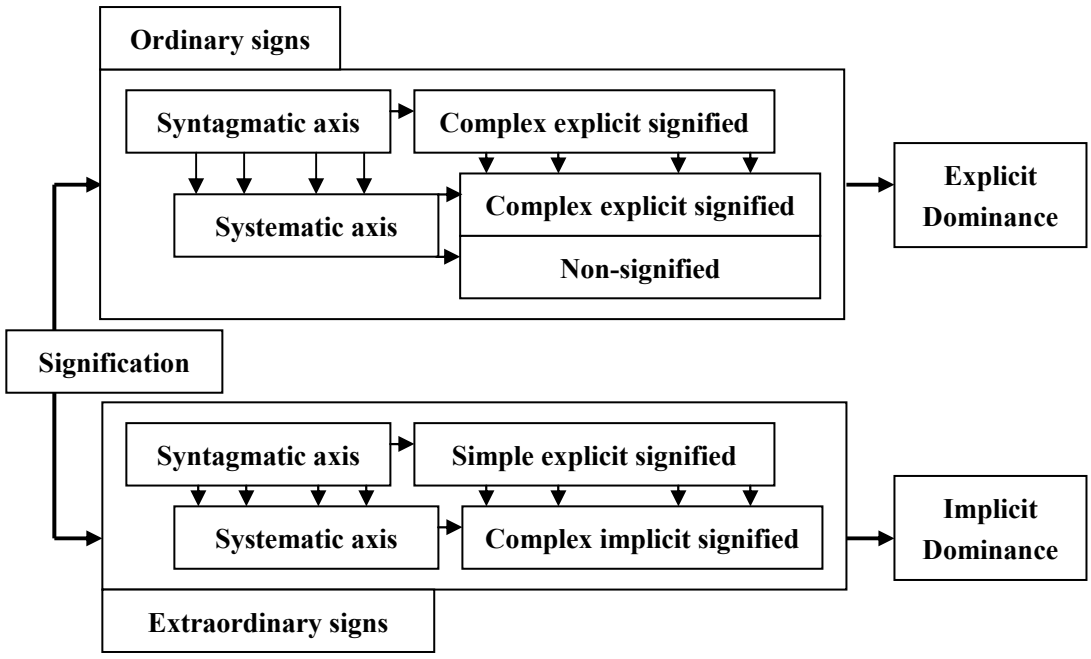

Figure: 4-1, the Signification Process

4.2 The Explicit Dominance and the Implicit Dominance

To replace the words “ordinary and extraordinary” by “explicit and implicit” can lead to obvious promotion in the linguistics study of built environment in that they are more suitable to the position. The words – ordinary and extraordinary are bearing with social characteristics. People use them to describe something normal or strange to a certain community. Fogies will insist on something to be extraordinary even after long time of their first appearance; but avant-garde will accept very novel renovations as something very ordinary. Facing to this condition, it is rational to apply the terms with clear designations in meaning rather than those that are more likely to ignite dispute. Bringing forward the terms – “explicit and implicit” is much better, because these two words indicate more directly psychophysical reactions rather than social characteristics, such as, something extraordinary to fogies could be explicit images to them as they have seen it for long time; but something very ordinary to avant-gardes might be implicit as they haven’t enough time to understand it.

The definitions of the explicit dominance and implicit dominance are correspondingly easy to deduce. Basically, following the denotation of the word – “dominance”, both of them should represent the aggregations of built environment signs. Then, the explicit dominance clearly contains the built environment signs that can ignite the only same and clear signified to people; on the contrary, the implicit dominance contains the built environment signs that can spark unlimited different signified. What

is more, according to both the diversity and globalization of current social situation, it is difficult to demarcate that which sign belongs to the explicit dominance and which belongs to implicit dominance, because some very local signs recognized as explicit in one community likewise can be perceived as implicit in others; and some very international signs are able to be recognized as explicit around the world. So, between the explicit dominance and implicit dominance, only a homeostasis state can be defined and studied. Indeed, according to this condition, it could be argued that, when exploring the signification practice in built environment, the metaphysics purpose, which wants to discover the utter meaning of the elements, is exceptionally impossible; and the absolute deconstruction purpose, which advocates the complete freedom in understanding, is also particularly unilateral; so between these two extremes, the only feasible way to explain the complex phenomenon is moderately Mean.

This pair of concepts also can be supported by some similar ideas from a few of the most famous present architecture academicians and architects. They all have put forward their own concepts about two different languages or categories in the architecture scope. Typically, Charles Jencks focused on the perceptive process, but Peter Eisenman and Michael Graves concentrated on architecture per se.

Jencks[218] contributed the 'Double Coding' in his famous study of the Post-Modern

[218] Jencks, Charles. *The Language of Post-Modern Architecture*, op. cit., p.12.

Language. This indicated a potential divergence that happens when people read or understand the post-modern architecture. High or low, elite or popular, professional or folk, the different groups of people will perceive the buildings on different levels.

Eisenman brought forward a couple of systematic concepts. One was about the architectural form. In his paper – *Toward an Understanding of Form in Architecture*, he summed up five basic architectural elements – Form, Intent, Function, Structure and Technics – and gave them a clear class: *"my contention will be that architecture is in essence the giving of form (itself an element) to intent, function, structure, and technics. In stating this I raise form to a position of primacy in the hierarchy of elements."*[219] Based on this argument, a theoretical framework can be founded, in which the apex is 'Form' and the other four elements are foundations. Several pairs of binary concepts were derived from this structure. On the top level, the 'Form' was divided into *'Genetic Form'* and *'Specific Form'*. According to Eisenman's description, the former means the *"...form thought of in a Platonic sense, as a definable entity with its own inherent laws…in architecture at all events belongs to two basic types: the linear and the centroidal."*; and the latter means *"...the actual physical configuration realized as a result of a specific intent and function."*[220] Between these two terms, the 'specific form' was considered to relate to the aesthetic and subjective aspects of architecture, including proportion, quality of surface, construction etc. So, comparing with the pure abstract and theoretical 'genetic form',

[219] Eisenman, Peter. *Eisenman Inside Out, Selected Writings 1963-1988,* op. cit., p.5.
[220] Ibid, p.5.

Eisenman believed that the 'specific form' is more pragmatic, closer with those foundational elements, but lower in degree of the hierarchy. On the lower level, he explained every element carefully and equally. A set of reticulate relationships among the 'Form' and other four elements were studied one by one:

- 'Intent' means the *"...primacy conception of a thing"*[221] and should be considered initially.
- The priority of 'Intent' and 'Function' should be conceived over the 'Structure' and 'Technics' in architecture.
- 'Intent' and 'Function' are the source of 'Specific form'.
- 'Structure' is more preferential than 'Technics' in the hierarchy of elements.
- 'Structure' is in response to 'Genetic form' diametrically.
- And because of the *"...inconveniently wide range of meanings and applications..."*[222], the 'Function' was subdivided into the *'Utilitarian Function'* and *'Symbolic Function'*. The former represents the needs of usage and the later satisfies the people's demands of psychology. Based on their corresponding characteristics of objective practice and subjective apperception to the 'Genetic form' and 'Specific form', Eisenman asserted that *"...the response to utilitarian function tends to produce specific form, whereas response to symbolic function tends to produce genetic form."*[223]

[221] Ibid, p.6.
[222] Ibid, p.6.
[223] Ibid, p.7.

Via these relationships, Eisenman tightly welded the five elements together (Figure: 4-2). But a more sensible thing is that both the "genetic form & specific form" and "symbolic function & utilitarian function" clearly mirror the similar viewpoint with the "implicit dominance and explicit dominance".

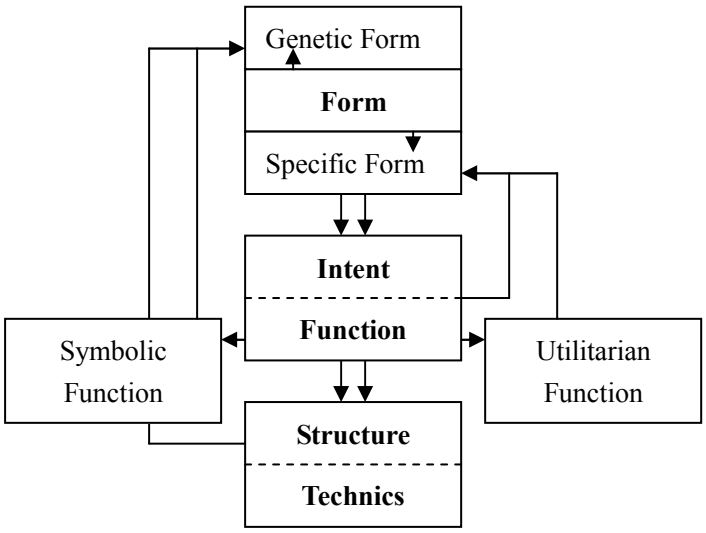

Figure: 4-2, the Framework of Eisenman's Architectural Elements

In Eisenman's another paper – *Notes on Conceptual Architecture*, he developed a structure of langage of art or architecture comparing with Noam Chomsky's linguistic structure. To the spoken & written langage, Chomsky purported a pair of binary concepts including *'a perceptual or surface structure and a conceptual or deep structure'*, which corresponds to the semantic aspect and syntactic aspect respectively. This means both of them were defined in the linear developing procedures without any intersection. However, Eisenman didn't think the original structure of these linguistic concepts could be adopted in architecture and art scope without modifications. Based on what he wrote: *"While Chomsky's equation of a sentence's*

construction with surface structure and syntactics with deep structure is valid for language because the word-object has primary sign value, it is not elaborate enough for art and architecture, in that it does not address itself to the problem of the aesthetic or sensual aspect of the object beyond the physical arrangement of words." [224], Eisenman put forward that *"...both semantics and syntactics each have a surface and a deep structure – a perceptual and a conceptual aspect."*[225], in the field of art or architecture. Consequently, a series of comparisons were launched to found his architectural langage structure:

- Within the scope of semantics, he argued that *"it is possible to make a further distinction: between meaning which is received directly from the literal fact, i.e., the presence or recognition of the actual image, and meaning which is received through a process of reconstruction in the mind. The former is semantic in a surface or perceptual sense, and the latter is semantic in a deep or conceptual sense."*[226]
- Within the scope of syntactics, he continued that *"a syntactic structure…has two aspects. One is the actual structure of the perceived object; the other is the implicit structure of the relationship between objects…the former is perceptual, the latter is conceptual."*[227]

[224] Ibid, p.18.
[225] Ibid, p.19.
[226] Ibid, p.19.
[227] Ibid, p.20.

Eisenman's thought can be summarized in one chart and was a fresh attempt to study the architectural langage by linguistic knowledge (Figure: 4-3). But more important for this section, his pyramid structure actually reflects the characteristics of the "explicit and implicit".

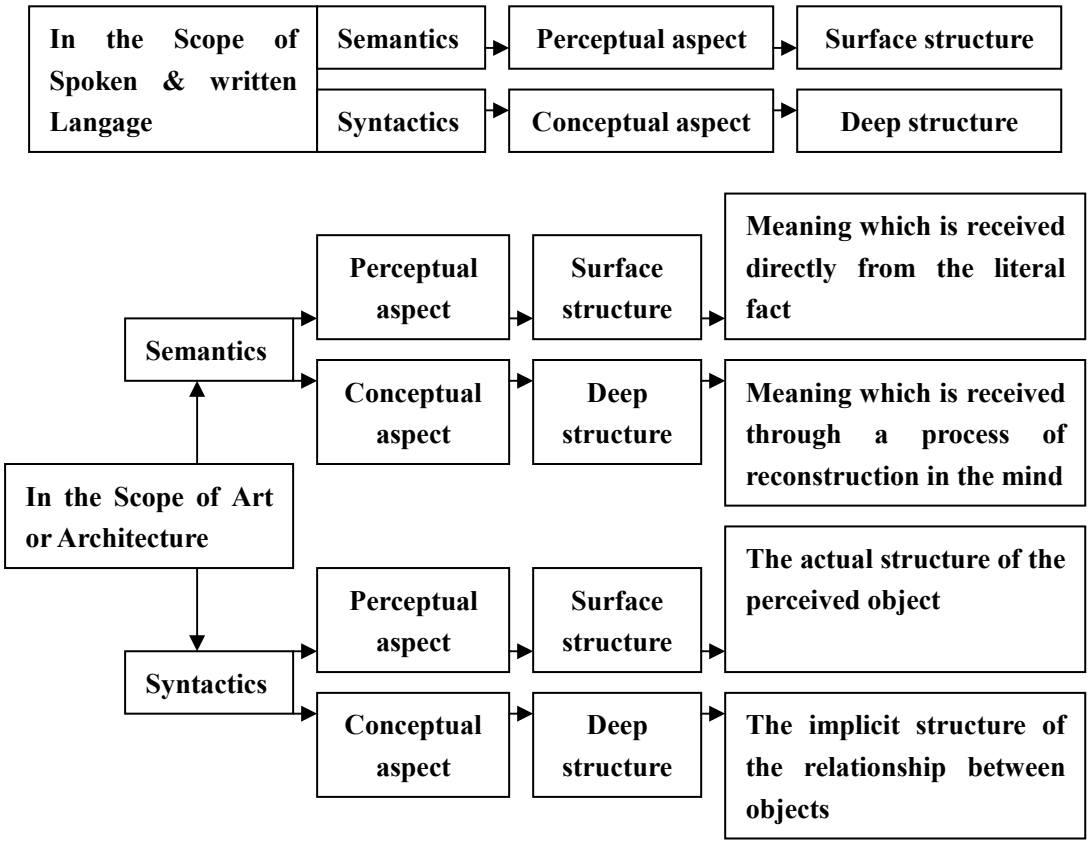

Figure: 4-3, the Structures of Chomsky (upper) and Eisenman (lower)

"A standard form and a poetic form exist in any language or in any art."[228] Beginning with this acclaim, Michael Graves invented a new style of the binary architectural language (langage) concepts in his well-known paper – *A Case for Figurative Architecture*. For criticizing the limitations of the Modern Movement and

[228] Graves, Michael. 'A Case for Figurative Architecture' in K. V. Wheeler, P. Arnell, T. Bickford, ed., *Michael Graves Buildings and Projects 1966-1981* (London, The Architectural Press Ltd., 1983), p.11.

advocating his famous colourful and fancy post-modern architecture styles, Graves disassembled architecture into these two branches. But in a comparison study with literature, he developed the *'Standard form'* and *'Poetic form'* into a detailed system (Figure: 4-4). In Graves' opinion, *"literature is the cultural form which most obviously takes advantages of standard and poetic usages, and so may stand as a model for architectural dialogue. In literature, the standard, accessible, simple ranges of daily use are expressed in conversational or prose forms, while the poetic attitudes of language are used to test, deny, and at times, to further support standard language."*[229] Deriving from this difference within spoken & written langage, architecture could be analyzed in the same way. Therefore, he further argued that *"...the standard form of building is its common or internal language. The term internal language does not imply in this case that it is non-accessible, but rather that it is intrinsic to building in its most basic form – determined by pragmatic, constructional, and technical requirements. In contrast, the poetic form of architecture is responsive to issues external to the building, and incorporates the three-dimensional expression of the myths and rituals of society. Poetic forms in architecture are sensitive to the figurative, associative, and anthropomorphic attitudes of a culture."*[230] These two forms, for Graves, are the standard and poetic languages (langages) of architecture. Shall they not be compared with the explicit and implicit dominances?

[229] Ibid, p.11.
[230] Ibid, p.11.

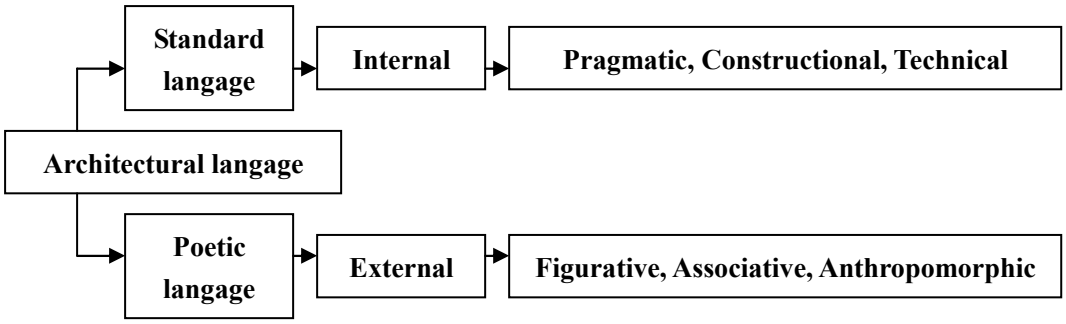

Figure: 4-4, Michael Graves' Architectural Langage

Some scholars didn't mention the binary concepts of the built environment but explored the existence of the multi-meanings. Their studies approached every aspect of the built environment. Actually, according to their opinions, not only can those bizarre and exotic out-appearances of architecture ignite different meanings, but also the very common element as well.

In the paper – *Writing Architectural Heterotopia*, Urbach[231] gave a significant introduction to the derivation and development of the special term – Heterotopia – applied in the architectural field. Firstly introduced by Michel Foucault, heterotopia was used to describe the bizarre and incongruous usages in linguistics, which, according to Foucault, *"desiccate speech, stop words in their tracks, contest the very possibility of grammar at its source…"*[232] Some architectural critics transplanted the concept into the architecture scope to explain big innovations in architectural history. Hereinto Charles Jencks invented the terms – 'hetero-architecture' and 'heteropolis' to analyze the heterogeneity of the contemporary architectural currency in Los Angeles.

[231] Urbach, Henry. 'Writing Architectural Heterotopia'. *The Journal of Architecture*, Volume 3 (1998), pp.347-354
[232] Ibid, p.348.

As a special term, heterotopia can be understood from two different standing points. To the conservators, this means the malformation in architectural styles, the confusion in meanings, the disturbing in context and the subversion in functions; however, to the renovators, this means the creativity of new architectural out-appearances, the plurality of the meanings, the contrast inside the context and the multi-fitness to different functions. In brief, the heterotopia represents any new births in architectural design and could be extended to the whole built environment scope.

In another paper – *Architecture and Human Purpose*, Winters[233] claimed that architecture is meaningful and *"understanding architecture, as with understanding the other arts, ..., requires imagination"*[234]. Based on this point, he quoted the American philosopher Nelson Goodman's theory of *"...a building plus reference; ...a building plus meaning"*[235], in which the 'reference' was same as the 'imagination', and further put forward his own development. Winter believed, for a building, *"we think more than the mere inhabitance... we do not merely occupy buildings in order to proceed with the commerce of daily life. We prefer some buildings to others just as we find we have preference in other arts..."*[236] Here, the 'preference' should be influenced by the ordinary 'social and political' situation, should be a common phenomenon on some level and could turn into a general experience. This was Winters' 'imaginative experience', which was *"in order to account for our*

[233] Winters, Edward. (guest editor with Paul Davies), 'Architecture and Human Purposes'. *The Journal of Architecture*, Volume 4 (1999), pp.1-8.
[234] Ibid, p.1.
[235] Ibid, p.2.
[236] Ibid, p.3.

appreciation of works of art (including architecture)"[237].

What is more, in Bachelard's *The Poetics of Space*, a couple of wonderful examples have been given to explain the multi-meanings and different understandings of the built environment. One is a lamp that sparkles from a window; another is the different houses drawn by children.

The imaginations of the lamp in a window were composed by a series of beautiful poems. Within those amazing words, Bachelard elucidated the possibility of various understandings to a very common built environment element, as follows:

The lamp could be the eye…

- *"The lamp in the window is the house's eye…*

  (A lighted lamp in the window

  Watches in the secret heart of night.)"

The feeling of waiting…

- *"…a lamp is waiting in the window, and through it, the house, too, is waiting.*

  The lamp is the symbol of prolonged waiting."

The firefly…

- *"Sometimes it glows like a firefly in the grass, a creature with a solitary light:*

  (I shall see your houses like fire-flies in the hollow of the hills.)"

[237] Ibid, p.4.

The stars…

- *"Another poet calls houses that shine on earth "stars of grass"; and Christiane Barucoa speaks elsewhere of the lamp in the human house as an (Imprisoned star caught in the instant's freezing.)"*

And even the glorious constellation…

- *"In such images we have the impression that the stars in heaven come to live on earth, that the houses of men form earthly constellations.*

  …

  (A night, ten villages, a mountain,

  A black, gold-studded Leviathan.)"[238]

Indisputably, these poetry descriptions sublime a normal house with a switch-on lamp to an artistic conception; even endow it with the soul of humans.

If poems only showed the good aspect of understanding to a house, then, from the example about children's drawing, both the bright and dark feelings about a building can be demonstrated. Bachelard compared two groups of pictures that were drawn by the children who were living in a happy situation and suffering Nazi's torture respectively. As expected, those cheerful children *"…will succeed in drawing a snug, protected house which is well built on deeply-rooted foundations. It will have the right shape, and nearly always there will be some indication of its inner strength…it is*

[238] Bachelard, Gaston. *The Poetics of Space, the Classic Look at How We Experience Intimate Places*, op. cit., pp.34,35.

warm indoors, and there is a fire burning, such a big fire, in fact, that it can be seen coming out of the chimney. When the house is happy, soft smoke rises in gay rings above the roof."[239] On the contrary, those with grievance evidently transplanted their distress to the building. *"One child, who had been hidden in a closet every time there was an alert, continued to draw narrow, cold, closed houses long after those evil times were over… this rigidity and motionlessness are present in the smoke as well as in the window curtains. The surrounding trees are quite straight and give the impression of standing guard over the house."*[240] Absolutely, the painful experience left the ineffaceable impressions in their minds and deeply affected their understanding of the surroundings.

With supports of all of these previous literatures, the concepts – explicit dominance and implicit dominance – should be more convincible to explain the existence of different understandings of built environment signs. Substantially, this pair of terms is a resume and digest of the relative complex process of the syntagmatic axis and systematic axis. Combining both the syntagmatic axis & systematic axis and the explicit dominance & implicit dominance together, they actually convert Hegel's logic and Derrida's deconstruction into a more moderate Golden Mean. Additionally, the explicit and implicit dominances also open an access to the practical scope. Within these dominances, many pragmatic langue groups can be detected, such as the function, construction, technology, social environment, natural environment and

[239] Ibid, p.72.
[240] Ibid, pp.72,73.

garniture, etc. From here, it is predictable that an elaborate built environment dictionary can be compiled with further hard work. In built environment linguistics, this is a plug naturally and directly connecting with the works of Alexander, Cullen or Lynch…

So far both the syntagmatic axis & the systematic axis and the explicit dominance & implicit dominance all merely focus on the 3D built environment entities. But in the next section, the fourth dimension will be carefully considered. It is the factor of time.

4.3 The Synchronic Aspect and the Diachronic Aspects

The effect of time on linguistics was known as the "synchronic linguistics" and "diachronic linguistics" in Saussure's system. Similar to his other professional terms, what is hiding behind these two recondite ones are also the relatively simple meanings. Briefly, diachronic aspect studies the mutability of linguistics within the shift of time. But synchronic aspect studies the immutability of linguistics in a certain period.

Both the mutability and immutability on langage deal with the out-appearances or meanings of signs. Saussure explained this phenomenon by a series of examples on the changes of ancient European spoken & written langage. It is related with the handwriting and meaning of words. To be logical, only the developed handwriting and meaning of words can exist within social common agreements, which need to be formed through a certain period in time. Therefore rationally, both of the synchronic linguistics and diachronic linguistics are related with the historical times, longer or shorter, and consequentially it should be merely possible to explore them through the integrated social aspect of the langage rather than individual activity.

This basic point provides a fundamental knowledge to understand these two terms. Based on it, Saussure's theory on the synchronic aspect and diachronic aspect can be studied from two aspects – the definition and the condition.

"... I prefer to speak of synchronic and diachronic linguistics. Everything that relates to the static side of our science is synchronic; everything that has to do with evolution is diachronic. Similarly, synchrony and diachrony designate respectively a langue-state and an evolutionary phase."[241]

"Synchronic linguistics will be concerned with the logical and psychological relations that bind together coexisting terms and form a system in the collective mind of speakers."

"Diachronic linguistics, on the contrary, will study relations that bind together successive terms not perceived by the collective mind but substituted for each other without forming a system."[242]

From these three quotations, it is evident that Saussure's definitions are not essentially different from the explanations given in the first paragraph of this section: the synchronic aspect studies the coexisting terms but the diachronic aspect focuses on the successive terms in linguistics. However noticeably, although he only studied the change in spoken & written langage, from the first quotation it is conspicuous that Saussure gave the synchrony and diachrony a very broad adaptability to all the sciences. This designates a certain application of these two terms in built environment scope.

The above analysis absolutely can be used in the research of this thesis. To the built environment langage, the change and development never stopped in human history

[241] Saussure, De Ferdinand. *Course in General Linguistics*, op. cit., p.81.
[242] Ibid, pp.99-100.

and can be discovered in almost every main civilization. Indeed, the synchronic aspect and diachronic aspect of built environment can be studied as a history of innovation. For example, in Europe, the special geographic location extending to all the directions promoted communication among different nations as well as the turbulent political situation. Pushed by the development of science and economy, and suffering with war, architecture and cities loyally recorded those acute changes. Gothic cathedrals stood on the ruins of Roman arch to celebrate the pride of flying buttress; the talent pediments of Baroque mansions derided the routinism of Renaissance; the miracle of steel and glass created dazzling palaces of crystal; Modernism suddenly gave up all the decorations to build living machines… In China, a different historical procedure also cannot wipe off the improvement in built environment. Although the relative closed geographic environment and local philosophy prevented massive scale of communication with the western world, mutations are obvious everywhere. The deep, flat eave of Han dynasty became more and more steep and shallow; the gigantic DouGong and huge structure of Tang dynasty were amended to become smaller and more efficient; in the earlier part of the 20th century, western styles were introduced in Shanghai by pioneer architects; right now, many ground-breaking massive architecture are built to challenge the limit of engineering. So actually, in world wide, with the development of civilization and international communication, various innovations of the built environment can be found in every aspect of our lives. In thousands of years, architects and planners have never stopped their exploration into new frontier. Their hard work has ceaselessly contributed to the novel surprises for

the public, as well as igniting the uncountable different understandings. All of these, at last, enrich the deposit of the built environment langage – langue to be a complex, marvellous but entire record of civilization. Hereby, based on these instances and according to Saussure's terms thereinbefore, it can be argued that:

- if considering the built environment within a long historical procedure, the built environment langue embodies the diachronic character, in which the various meanings prevailed in different periods;
- if considering the built environment within a short moment, the built environment langue embodies the synchronic character, in which the meanings are relatively stable.

Indeed, any tendency of only considering the built environment signs by one of those two aspects is unilateral and unreasonable. Because both the synchronic aspect and diachronic aspect of built environment closely interweave together to form the history of architecture, urban planning or landscape design, it is more efficient to study them together for a comprehensive knowledge. As artificial signs, any element of built environment must have the moment of its birth and has to undergo some time to be accepted by the public. Although those genius aspirations made up a dynamic diachronic history, just as the vivid spoondrifts spraying at every turn of a long and sinuous river, after short eye-catching times, they will become familiar things and are deposited in the collective minds as one part of the synchronic store, which

corresponds to the main body of a river always being a mild and placid stream at last. So, changing from novel to normal, the essence of development is hiding inside.

However, behind the ubiquitous changing processes interacting between the diachronic and synchronic aspects, one crucial rule must be noticed. It is that the different innovations will be deposited on different levels of acquaintance in the store of langue. Some novel inventions gradually embodied their theoretical and practical values during the process of use. They slowly became the knowledge or experience, then were recommended everywhere as well as being applied and replicated again and again. These innovations would be generally accepted by communities as a tradition or a custom at last, and remained for generations. On the contrary, some vogues only existed as fireworks in the air, after an instantaneous resplendence only leaving thin smoke in the wind. This phenomenon was also accurately noticed by Saussure. In his system, this point can be studied as the condition of diachronic and synchronic aspects.

As in his usual style, Saussure's argument was also theoretical and abstract, as follows: *"But not all innovations of speaking (parole) have the same success, and so long as they remain individual, they may be ignored, for we are studying language (langue); they do not enter into our field of observation until the community of speakers has adopted them."*[243] However, in another important masterwork –

[243] Ibid, p.98.

Philosophie De L'Art, Taine provided a more vivid and vigorous description to this point.

Based on Taine's topic, his description adapted to all kinds of arts, including music, drawing, poem, literature, sculpture, drama and, of course, built environment. Via a very smart inspiration from the science of geology, he designed a series of stratums to compare with the different levels that fashions can finally immerse into people's profound mind. From shallow to deep, the stratums' ability of resistance against the natural and man-made force increases gradually, just like how stably the new can resist time's ablation.

Taine used one whole chapter to introduce the comparison even with many detailed instances and beautiful descriptions. Obviously, the original text is too long to be quoted. Therefore only a summary is extracted here, which is translated from the original French by the thesis' author.

So, as Taine narrated: *"Scraping and digging on our bodies, just like excavated by the shovel, time manifests the geological configurations of our spirits. Actually eroded by time, our stratums are, quickly or slowly, peeled off layer by layer.*

What are floating on the surface are some living habits and emotions that lasted three or four years; these are fashionable vogue, provisional things. Like the

easy-cultivated soil, such as the loose alluvium, they fully pile on the top, and can be eradicated merely by simply shovelling.

The layer below the soil contains some solider characters, which can exist twenty years, thirty years or forty years, almost half of a historical period. Like the more adhesive lime or the thicker sand, removing it needs more efforts.

The third layer is very broad and deep. The character of it can be represented by an entire historical period, such as the Medieval Ages, Renaissance, or classical times. The spiritual state of this layer can totally rule one hundred years or even many centuries, although suffering the constant surreptitious attrition, violent deconstruction, frequent assaults by reaphook and dynamite, still towers without any shake. This layer affiliates with a lot of isms and thoughts, including the religions, politics, philosophy, love and family. It can be compared with the limestone, marble or schist, which has a very substantial powerful resistance; only the continual generations of work, digging very deep tunnels and repetitious blasts can eradicate it.

The last one is the primitive stratum. It contains the ethical instincts and capabilities, which have been immersed into the blood and been passed down for generations; the only way to alter these instincts and capabilities is to alter the blood. This is the Archeozoic granite, buried underground with uncountable depth. It is the foundation of all the structure; however fierce and powerful the attack ramping on it, never can it

be completely eradicated. This original granite, as old as a nation, is a base, which supports all the later stratums.''[244]

Evidently, any novel invention must be only the superficial soil at beginning. But if they can withstand the erosion of time, eventually they will become the tough rock.

The diachronic and synchronic aspects introduce the time dimension into significant operation. In fact, the theories of previous terms – the syntagmatic axis & systematic axis and the explicit dominance & implicit dominance – only correspond with the

[244] Taine, Hippolyte Adolphe. *Philosophie De L'Art, Tome Deuxième, Vingtième Édition,* (Paris, Librairie Hachette), the original text in French:

Le temps gratte et creuse sur nous, comme un piocheur sur le sol, et manifeste ainsi notre géologie morale; sous son effort, nos terrains superposés s'en vont tour à tour, les uns plus vite et les autres plus lentement. Ses premiers coups de bêche raclent aisément un terrain meuble, une sorte d'alluvion molle et tout extérieure; viennent ensuite des gravois mieux collés, des sables plus épais qui, pour disparaître, exigent un travail plus long. Plus bas s'étendent des calcaires, des marbres, des schistes étagés, tous résistants et compacts; il faut des âges entiers de labeur continu, de tranchées profondes, d'explosions multipliées, pour en venire à bout. Plus bas encore s'enfonce en des lointains indéfinis le granit primitive, support du reste, et, si puissante que soit l'attaque des siècles, elle ne parvient pas à l'enlever tout entier. (pp.246-247.)

A la surface de l'homme sont des mœurs, des idées, un genre d'esprit qui durent trios ou quatre ans; ce sont ceux de la mode et du moment.

…

Au-dessous s'étend une couche de caractères un peu plus solides; elle dure vingt, trente, quarante ans, environ une demi-période historique. (p.247.)

Nous voici arrivés aux couches du troisième ordre, celles-ci très vastes et très épaisses. Les caractères qui les composent durent pendant une période historique complète, comme le moyen âge, la Renaissance, ou l'époque. Une même forme d'esprit règne alors pendant un ou plusieurs siècles, et résiste aux frottements sourds, aux destructions violentes, à tous les coups de sape et de mine qui, pendant tout l'intervalle, l'attaquent incessamment. (p.248.)

Un groupe de doctrines et de sentiments s'y adjoint ou en dérive; la religion, l'État, la philosophie, l'amour, la famille, reçoivent alors l'empreinte du caractère regnant… (p.249.)

En cela consiste la couche primitive; (p.250.)

Ces aptitudes et ces instincts sont dans le sang et se transmettent avec lui; il faut, pour les altérer, une altération du sang,(p.250.)

Voila le granit primitif; il dure une vie de people et sert d'assise aux couches successives que les périodes successives viennent déposer à la surface.(p.253.)

synchronic aspect; but very necessarily with the help of the diachronic aspect, the exploration about the signification process of built environment linguistics can approach a stage of dynamic development.

4.4 Summary

Colligating the contents of the three sections above, a framework of the significant operation of the built environment langage can be figured out. Within this, three pairs of professional terms – the syntagmatic axis & the systematic axis, the explicit dominance & the implicit dominance, and the diachronic aspect & the synchronic aspect – are tightly combined together.

The syntagmatic axis and the systematic axis are introduced from Saussure's and Barthes' concepts. By this pair of concepts, the phenomenon pointing to the existence of various understandings of built environment signs is analyzed in a more moderated way, which affirms the freedom of perceiving the signs by diverse individual ways, and does not deny the importance of the common understandings. It is an effort to neutralize the contradiction between Hegel and Derrida. It is a way of Golden Mean.

The explicit dominance and the implicit dominance are resume and digest of the former complicated procedures. If the theory of syntagmatic axis and systematic axis is still conceptual and abstract, well then putting forward these two terms leads to an access of the practical field. Because they denote the accumulation of signs, which can ignite clear or ambiguous understandings respectively, further the pragmatic langue groups can be enumerated within the dominances to compile highly structured built environment dictionary or grammar. On this point, they logically connect with

the previous built environment langage studies.

The last pair of terms – diachronic and synchronic aspects – emphasizes the function of time on significant operation. They elucidate two conditions of the subsistence of meanings in people's minds, which are mutable within a long historical procedure and immutable at a relatively short moment respectively. The previous terms – syntagmatic axis & systematic axis and explicit dominance & implicit dominance – embody the synchronic aspect; but the diachronic aspect uncovers the principle of dynamic development in built environment linguistics.

All of these three pairs of terms together unfold the essence of the practical significant operation in built environment scope. They are actually under the control of parole and blended in our lives, happening everywhere at any moment. In this chapter, the deeper exploration refills the basic study of signification rules in langage framework and establishes an intact significant operation structure, which stems from the langage framework and can connect with it to form an integrated frame of built environment linguistics. But by these three pairs of terms educed from this structure, the signification of built environment returns from a philosophical theory to the factual and practical world (Figure: 4-5).

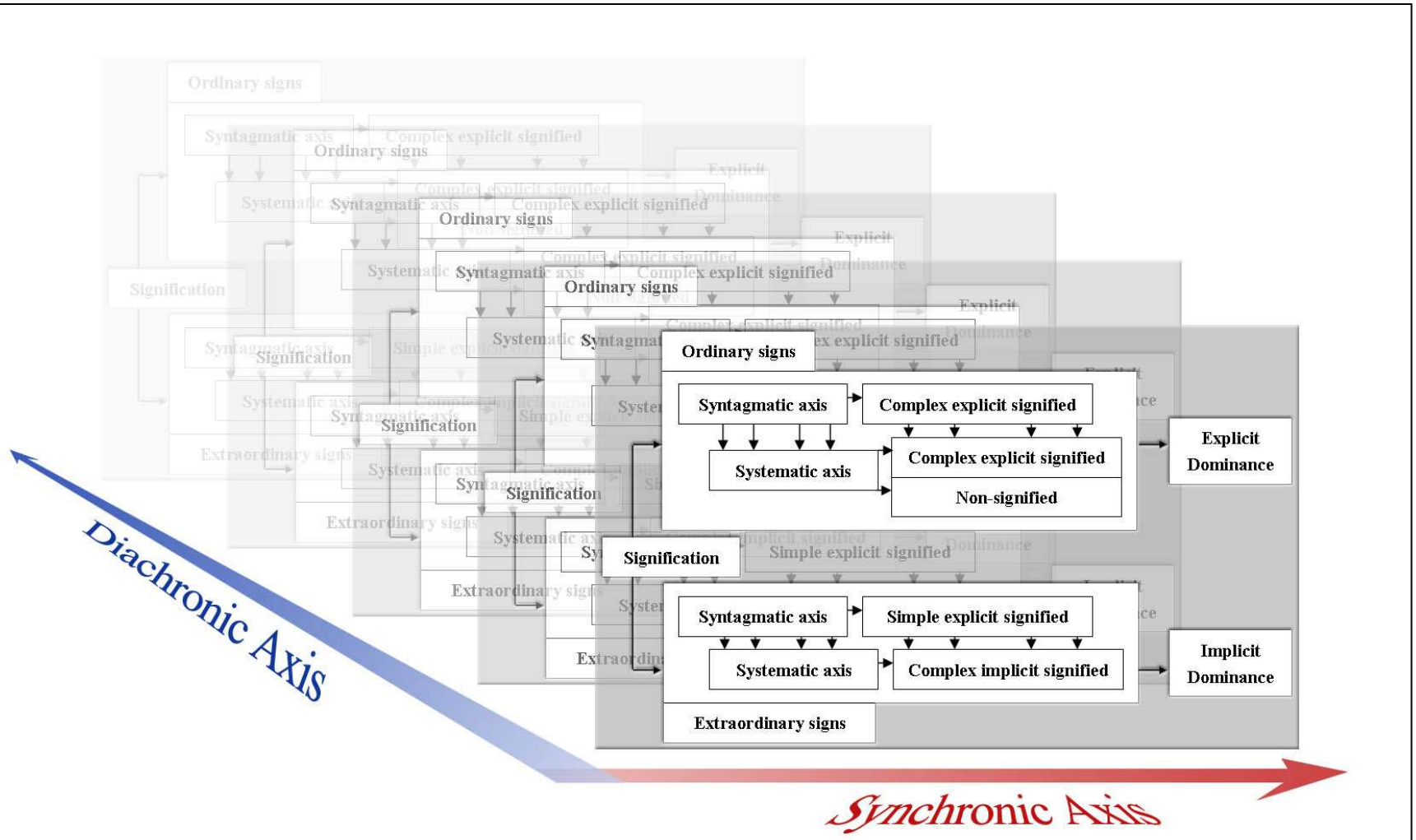

Figure: 4-5, the Significant Process with Synchronic and Diachronic Axes

5 The Theoretical Synthesis of Built Environment Linguistics

At last, with the two chapters above, I would like to argue that an intact theory of universal built environment linguistics has been developed in step and completed in phase. Now it is time to synthesize all the accomplishments together and to build the final theoretical frame for this thesis.

Clearly, all the studies stem from a comprehensive literature review in Part One, which build up a firm basis for the next step exploration. However, in Part Two, both of these chapters are also interconnected with each other: the former is the basis of the later and the later is the development of the former as well.

Following this methodology, the study of built environment linguistics is unfolded with a logical plan. By the knowledge of structuralism, structural linguistics, semiology and deconstruction, an entire framework of the built environment langage is finally accomplished. Within the structure, firstly, two core concepts – the langue and parole have been roundly explained with built environment characteristics and comprehensively replanted into built environment scope. Secondly, through exploring on the creating parole-langue-perceiving parole system, the operation mechanism of

built environment langage has been uncovered with the endless meanings – significant. Thirdly, by introducing the spoken & written parole into the model of built environment langage, the built environment linguistics has fully retuned from professional territory to the public daily life. Indeed, these three outcomes are proper answers of the very fundamental questions put forward in the Introduction, which are "what is the universal essence of the universal built environment linguistics?" what is its universal mechanism of operation and can it be mastered by everyone?"

Based on this framework, further study about more practical operation of signification can be launched. Since the signification, which indicates various understandings to the concrete signs of built environment langue, is the product of the langage operation and an opening for further development, with supports of linguistics, semiology, deconstruction and other literatures from architectural and artistic fields, three very fundamental principles of the signification are sorted out. Hereinto, the first and second ones are the syntagmatic & systematic axes and their derivatives – the classification of explicit dominance and implicit dominance; another is the synchronic aspect and diachronic aspect, which reflect the influence of the time and respectively represent the instantaneous stability and the evolutional change of the meanings.

So, mixing the signification study with langage framework together, the integrated model of built environment linguistics can be achieved. (Figure: 5-1) Further more, considering the factor of time, this model also can be running on two axes: a

horizontal axis of the synchronic aspect and a vertical axis of the diachronic aspect (Figure: 5-2). This frame extracts the commonness and adapts the complication of built environment system. It deserves to be a universal linguistic study to all kinds of different built environment disciplines. Behind this intricate model, three paramount attributes of the built environment linguistics can be detected, which are:

- the necessary exterior material demand – creating parole (ERC) and perceiving parole (ERC);
- the necessary interior material demand – explicit dominance and implicit dominance;
- and the necessary exterior mental demand – spoken & written langage.

Hereinto, the first one crystallizes the close relationship between the abstract aspect of langue – necessary convention and the active individual practice – parole. The second one consolidates the concrete aspect of langue – built environment signs. And the last one designates the unlimited source of vitality of built environment linguistics and unleashes it from the shackle of professionalism.

With all these outcomes, here could be a proper end of the theoretical deduction. However, So far the study is only supported by academic argumentations. Therefore, in the next part, further support will be provided from a different angle. They will be more original and practical data from a series of carefully designed simulation tests.

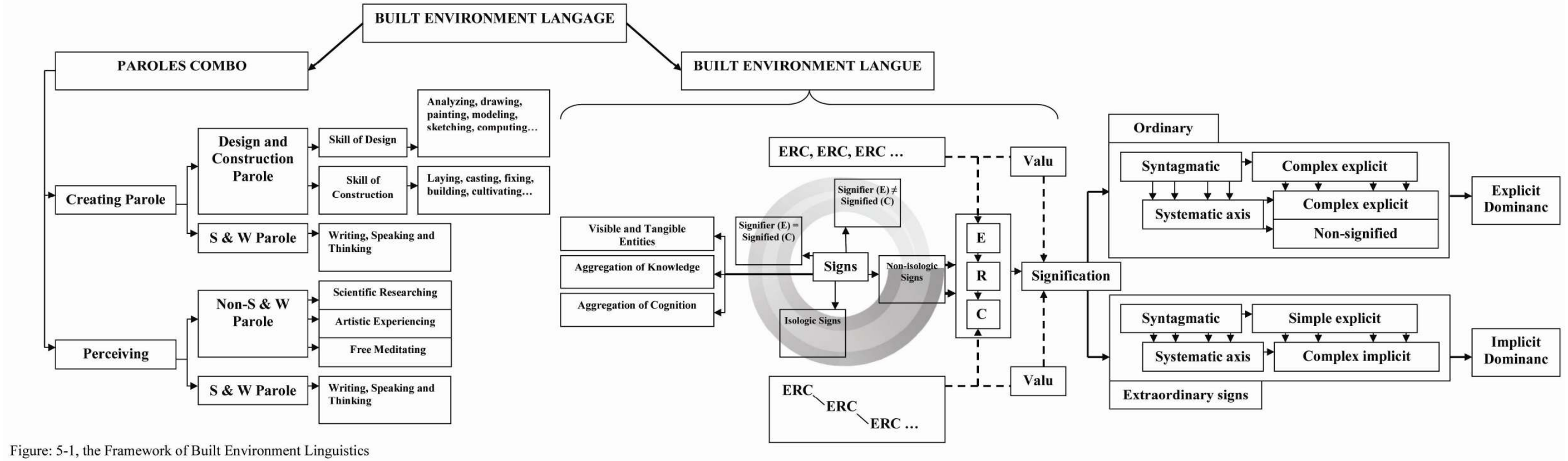

Figure: 5-1, the Framework of Built Environment Linguistics

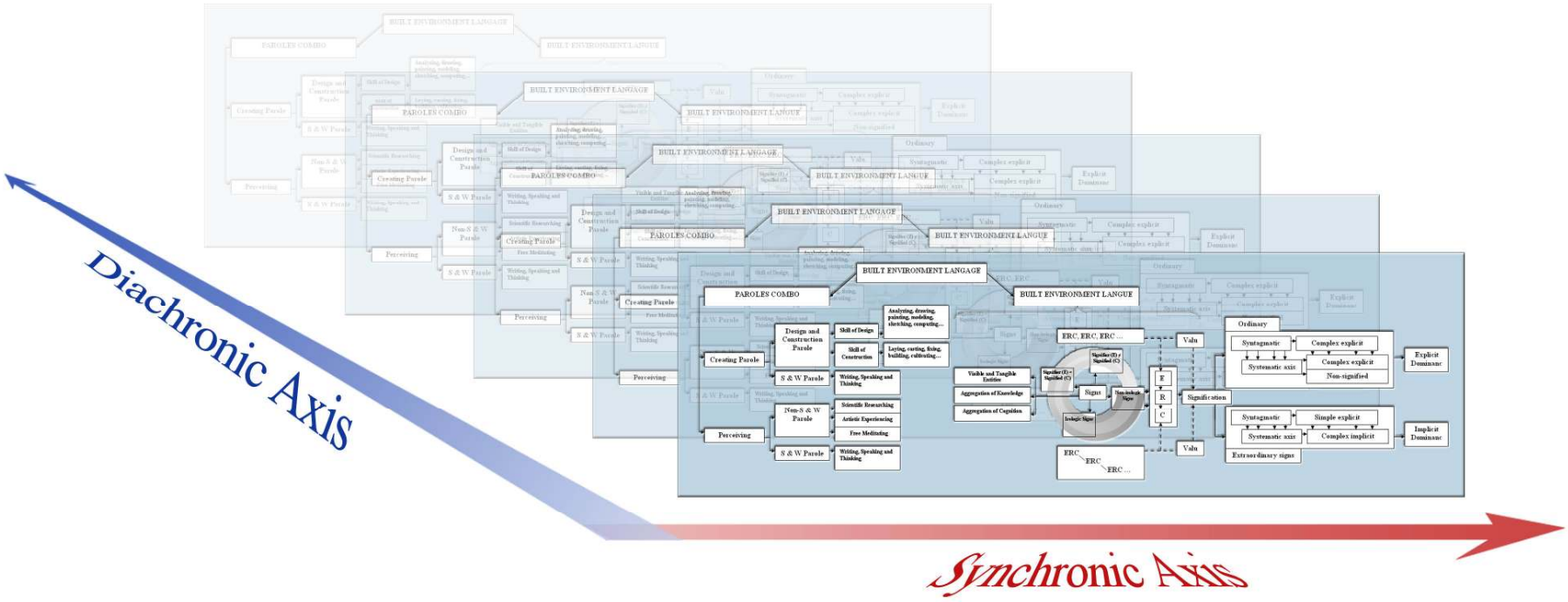

Figure: 5-2, the Framework of built environment linguistics (Including the Synchronic and Diachronic Axes)

PART THREE
THE SIMULATION TEST

6 The Simulation Tests Report

The simulation test is an organic component of the whole study, which provides support to the theory from a practical angle. Within this chapter, a comprehensive explanation of the simulation test will be uncovered, from explaining the motivation to introducing the design; from seeking the best way of collecting data to exploring the secret behind them.

6.1 The Motivation of the Simulation Test

Through a series of academic developments, at the end of Part Two an intact theoretical system of built environment linguistics has been established. In the deducing process, literature review and exemplifications have been cited to support the theory. However, as the existing scholastic achievements, they are only able to support built environment linguistics on an empirical level rather than practise. Built environment linguistics is an every-day langage for everyone. So it would be more consummate if there is original data from practice to substantiate it.

Just like theories in other subjects can either reflect real situations existing in the physical world or be proven by true phenomena, built environment linguistics also obtains its real reflections in our real-life. Based on the analysis thereinbefore, it has been clarified that built environment linguistics theory is a colligation between the theoretical abstract and the practical ubiquity. This means that, as the phenomena of creating buildings and understanding them, although probably including very complex processes of creating, endless chains of perceiving and intricate mechanisms of signification, this theory is still one of the most ordinary things for everyone. It actually encompasses every aspect of our lives and no one can be excluded from it as long as they are in the built environment. So pointing to this characteristic, a proper designed test is helpful to reinstate the abstract and complicated theory to its relevant common and universal essence. The test should be able to simulate the normal usage

of built environment linguistics in real life. From this point, two advantages can be enumerated. On the one hand, of course, to support the ubiquitous usage of this kind of linguistics, the embodied data extracted directly from real circumstances will be more powerful than abstract theoretical illation. On the other hand, by the comprehensible simulation process, the test can counteract the abstruseness on theory and unveil the universality in practice. It evidently provides a more convenient way to understand the spirit of the theory of built environment linguistics.

Following the reasons above, the design of the test can be commenced. Surely, because of this topic's intrinsic interdisciplinary attribute between the built environment and linguistics, the experience of designing the psychological test in a linguistics study can be introduced here. But for roundly reflecting the situations in the scope of built environment, the knowledge of disciplines such as architecture, urban planning and landscape design can't be excluded. This test, like its relevant theory, should also embody its interdisciplinary character.

6.2 The Design of the Simulation Test

A properly designed simulation test must conform to two basic principles. One is that the test should reflect a real situation as much as possible; whilst the other is that it must be sufficiently simplified to suit a short time laboratory operation. If analyzing their meanings, these two preconditions seem to be contradictory with each other. So in order to neutralize them, finding out a felicitous balance point is necessary. This is the base of the simulation test design. Upon this point, the test can be divided into two major parts, firstly the main simulation test; and secondly the auxiliary test.

6.2.1 The Design of the Main Simulation Test

The main simulation test is the principal part. For matching with the former theory, its design will closely follow the original rules of the built environment langage.

According to the theoretical framework given before, it is clear that the basic elements of the built environment langage are the langue and parole, and an integrated signification procedure of the langage must include an aggregate of the multiple juxtaposing Creating Paroles and an aggregate of the successive transmitting Perceiving Paroles. Based on these, firstly, one simplest concrete entity of langue could be a single building that was created by creating paroles; then at least two people will be involved in the signification process. If we conjecture that the first one is a lady and the second one is a gentleman, the lady sees the building by herself and

forms the original understanding in her mind, and then she could depict the building to the gentleman who has never seen the building. He would establish his own comprehension only according to her words. In this process, just one building and a few people are involved. They make up the simplest signification process in which the creating parole is controlled by the background builders and the perceiving parole is realized with two information transfers.

To mock up this process in a laboratory, firstly an architectural photograph can be applied as the concrete entity of langue instead of the real building. Then, to be the same as the real situation, at least two people will join in the test. For clarity, the two people also can be imaged as a woman and a man respectively. The first (lady) has the chance to see the photograph, which is kept completely out of the sight of the second (man), as she beholds real architecture. Then she describes it to the next gentleman who not only passively listens but draws a picture to figure his own understanding of the original building image. So by this very basic plan, we can obtain the original understanding of the lady according to her description and the transformed understanding according to the gentleman's drawing. These data will build up a simple but comprehensive record of the perceiving parole. However, to the creating paroles, since it is evidently impossible to redo the entire design and construction procedures of the building on the photograph in a laboratory, the only way to investigate them is nothing more than data-gathering, such as a literature review or interview.

This primitive design is a foundation for further more complex development. However, within the most basic model, it is clear that the photograph will directly influence the result since the two participants only can passively perceive the content of the picture. So choosing the proper photograph is undoubtedly crucial.

Choosing the right photograph is a comparatively complex step. First and foremost, for reflecting the diversity of the built environment, one photograph is far from enough. Successively, some important principles must be followed during the selection as well.

- Firstly, because the simulation test is enslaved to the limitation of time and venue, the photographs cannot be too complicated to comprehend in a short time. So, to give the observers a very strong impression, the built environment photographs must be simple, clear, distinctive, and even exaggerated.
- Secondly, because these photographs should induce the data as much as possible, their contents cannot be similar. Theoretically, the different types of creating paroles, the different building styles, different built environment disciplines and the different ambiences or atmospheres need to be considered in the chosen programme.

Hereinto, the first principle is about the qualitative features of the photographs.

Without a standard, the only way of evaluation is subjective judgement. On the contrary, the second principle is about the quantitative attributes of the photographs, which not only can be estimated by objective standards but also can radically affect the number of the photographs.

So, a further analysis can be launched on the second principle. Within its four "Different":

- the types of creating paroles can be considered as including the way to realize an actual built environment for use, the way to embody a scheme built environment for ambition, the way to exhibit a sculptural built environment for thought, and the way to show a pictorial built environment for emotion. What is more, both the works of specialists and the public should be hinted in them;
- the different building styles can be divided into classical and cutting-edge, conventional and international;
- the different disciplines can be summarized to architecture (or buildings), urban context and landscape scenario;
- and the different ambiences or atmospheres can be represented in artificial surroundings and natural surroundings, in which both of them contain two sorts of tendencies – negative and positive.

According to this classification, the minimum number of the photographs is four.

Each of them should reflect a typical scene mixing a set of features inside.

Picking out the proper images from hundreds and thousands built environment pictures is not an easy job. For this aim, the last five years key architectural magazines – Detail, the Architect's Journal, Architectural Review, Icons, RIBA Journal and Architecture Today, many architectural and relative books and online information have been combed. Finally, under the preconditions above, four photographs were picked out from different resource. They are all wonderful prototypes for this test, not only with simple and strong topics, but also successfully cover all the "Different".

1) Located in city context but negative artificial surroundings, the first one is a representative of the actual built environment with a mixed style between conventional and international, which the creators are a group of young avant-garde architects.
2) Hanging on negative natural surroundings, the second selection is a representative of the scheme built environment with an extreme hi-tech style, which the creators are main-stream architects.
3) Displayed in positive artificial surroundings, the third choice is a representative of the sculptural built environment with a synthetic style between classic and new, which the creators are artists.
4) Nested in landscape context – positive natural surroundings, the fourth option is a representative of the pictorial built environment with very conventional

style. Although this picture was created by artist but its content – a folk cottage – is a usual example of the local people work.

The detailed introduction of these photographs will be given in later sections, which will explore the creating paroles hiding behind each of them.

Following the confirmation of the photographs, the number of people involved in the test should also be rearranged. We initially set the number of people to two, which is the least number to form an entire signification process. However, logically, to achieve the best results, all four photographs should be applied within one entire test. From this point, it is also ideal that every participant can play both the original lookers and the successive listeners towards the different photographs. According to the theory of the Linear Algebra, it is not difficult to find out that the best number within a group of people should also be four. Additionally a matrix can be established here. So, as shown on the table (Table: 6-1), if coding the participants as No.1, 2, 3, 4, in one entire simulation test, all the four sub-tests towards the four different photographs will follow different turns. This means that not only will every participant get one chance to be an original observer in one sub-test, but also as the successors, they will always get the descriptions from different former or transfer the information to different later in every round.

SUBTESTS	PHOTOS	THE TURN OF THE PARTICIPANTS			
Sub-test 1	**Photo 1**	**1**	**2**	**3**	**4**
Sub-test 2	**Photo 2**	**2**	**4**	**1**	**3**
Sub-test 3	**Photo 3**	**3**	**1**	**4**	**2**
Sub-test 4	**Photo 4**	**4**	**3**	**2**	**1**

Table: 6-1, The Matrix Model of the Simulation Test

Based on all the achievements hereinbefore, it could be said that the main simulation test has been plotted out. It is a compound circulation test including four prototype photographs, four participants and four sub-tests. In each sub-test, there are four essential steps:

- Firstly, one photograph will be shown only to the original observer who is the first one in turn in the sub-test.
- Secondly, the photograph will be removed and be kept secret, whilst the second person (the first listener) in turn takes part in the test. Then, only by speech and without any body langage, the original observer describes the content of the photograph as detailed as possible to the first listener who only passively hears the information without questions, and then shows his or her interpretation through drawing.
- Thirdly, the first listener's drawing will be taken off and kept secret. The third person (the second listener) in turn takes part in the test. At this time, the first listener becomes the speaker and carefully describes his or her imagination of

the original photograph to the second listener only by speech, and the second listener passively hears the information without questions, but thinks about the scene by imagination and draws the image.

- Fourthly, the same thing will be repeated once again. After removing the second listener's drawing, the fourth person (the third listener) in turn takes part in the test. At this time, the second listener describes his or her imagination of the photograph to the last participant who will contribute the third drawing by his or her individual thought.

For more accurately and completely reflecting people's thoughts, two crucial points must be emphasized. On the one hand, through every sub-test, secrecy is the most important point. This is a test based on people's pure personal understanding, so except between the active participants actually involved in each step, any other unexpected communication, such as chatting, overhearing or peeking must be avoided if at all possible. This means not only the waiting participants have to be excluded from the venue for keeping the secret of both the descriptions and drawings, but also silence must be held between the participants who have finished the job and who are still waiting. On the other hand, for checking the function of the spoken & written langage within built environment linguistics, any body langage that is usually strong enough to overwhelm free imagination must be avoided by separating the participants by an opaque curtain. Indeed, not until all these conditions have been satisfied can the data be suitably interpreted.

Additionally, other details also cannot be ignored. For the precise collection of the data, the whole process should be recorded by camcorder. To ensure the best performances of the participants, the venue should be well lit, additionally, a comfortable drawing pad, enough colour markers and colour pencils should be provided.

So with all the conditions and details thereinbefore, when finishing an entire test, we will get four sets of data including in total twelve personal descriptions and twelve individual drawings, in which the built environment langage has been solidified.

This main simulation test can be redone many times with different groups of participants. Theoretically, the more tests are done, the more data can be collected, the more comprehensive will be the diverse situations covered, and the closer the test will be to reality. According to time constraints in this research, six groups of tests have been completed with assured quality. To be similar to choosing the photographs, the participant groups also may not be selected at random. Firstly, for embodying the universality of built environment linguistics, participants must cover both the specialists and the general public. Furthermore, basically the personal understandings of the built environment are varied by age, profession and cultural background. So the groups of participants can be divided into

- adults and children;

- professionals and non-professionals of built environment subjects;
- western cultural background and eastern cultural background.

Normally the age is the primitive principle for all human beings. So it should be considered first. Hereinto children are better to be the pupils (6 years – 13 years old) in the primary school who are old enough to grasp the information as well as young enough to keep their childish naiveté. Then, adults should be older than 20 in that they have been fully effected by society. Following the first principle, professionals and non-professionals can be considered among adults. They can be divided into the architectural or urban planning professional and general non-professional branches. The professionals should be people who have finished their architecture or urban planning study at universities, but the non-professional group isn't restricted by special limitation. At last, the cultural background will be noticed. It is clear that, under the current tendency of globalization, the difference between the West and the East has been narrowing and in some cases has even been eliminated. However, to reflect the universality of built environment linguistics as much as possible, the western and eastern cultural backgrounds will still be kept in the test. So, putting them together, another matrix can be schemed (Table: 6-2).

	Western cultural background	Eastern cultural background
Adults (professional)		
Adults (non-professional)		
Children		

Table: 6-2, The Arrangement of Six Participants Groups

So finally, based on four meticulously selected photographs and six scientifically organized participant groups, a plan about the main simulation test of the practice of built environment linguistics has been plotted out. The feature of universality has been represented by covering the different disciplines and different people. Predictably, through studying the data of the test programme, a series of foundations to the theory will be obtained. Hereinto, exploring the background information of the photographs will be a note for the creating parole. Furthermore, through comparing the gradual changes and the persistent commonness within the descriptions and drawings, the perceiving parole and the significant procedure can be verified as well. However, besides all these above, an auxiliary test is still necessary.

6.2.2 The Design of the Auxiliary Test

After the design of the simulation test, logically a potential problem must be noticed. This is that people are mostly in contact with the real built environment in daily life, but contrarily, because of the limited condition of the indoor psychological test only

the built environment photographs can be applied. So for the preciseness of the test, two questions logically are awaiting answers: whether the photographs can reflect the real situation of the practice of the built environment langage; how well can the photographs reflect the reality. Based on this condition, an auxiliary test must be designed.

The auxiliary test is a necessary supplement of the main simulation test. Its aim is to compare the descriptions of the printed buildings on the photographs and the descriptions of the real built environment. Therefore, for the best comparison result, in theory it should inherit the design of the main simulation test.

The chosen built environment of the test also must be typical but simple. On the one hand, it must hold conspicuous characteristics; on the other hand, it can't be too big or complex to grasp in a test-adaptable short time. Based on these conditions, finally, an historic summer house near the School of the Built Environment at the University of Nottingham is selected. This is an early Victorian-style small pavilion standing on a hill amongst a rocky garden. From the pictures (Figure 6-1), it is clear that it satisfies the test from four aspects:

- Firstly, the summer house itself is small and easy enough to understand in a short visit. Its shape is geometric, so can be easily described. Its materials are normal but highly contrastive, so can give the participants a deep and clear impression. It is accessible from any direction so the participants can study all

four elevations. Additionally, there are no substantial obstructions in front of the building, so the participants can grasp a whole context panorama by observing from a distance.

- Secondly, having undergone recent refurbishment, the building is mixed with new technology and unfolds a very strong trait. Based on a curved shape, the roof has been covered by elaborate tiny wooden shingles. This technique makes the building unique on the campus.
- Thirdly, to see the context of the pavilion, the surrounding contains strong traits as well. This hilly rock garden is exclusive in the university. The serpentine rocky paths lead to different artificial or natural sceneries. Very dense forest forms a conspicuous background.
- Fourthly, in addition to all the exciting characteristics above, the small summer house also holds very obvious shortcomings for easy criticism. Compared with the attractive out-appearance, its inside is totally deserted and unkept, without any essential furniture. What is more, as a summer house, it is incomprehensible that the door is facing north but the south façade is entirely solid without any opening on it.

Summing up the four points together, it is clear that this built environment can be a perfect prototype for the auxiliary test.

The procedure of the test is similar to the main simulation test but keeps its own

particular feature. In the main simulation test, except for the first participant who has the chance to see the original photograph, all the other three people merely receive the information by oral descriptions and reform the building in their imaginations, so for them it doesn't matter whether the original built environment is printed on a picture or is a real one. According to this condition, the possible difference between the descriptions from printed photographs and the descriptions from real buildings only can emerge from the first participant. Therefore, it is enough for the auxiliary test just to operate the first step of the main simulation test. In detail, it contains three steps:

- Firstly, the participants coming from the professional group, the non-professional group and the children group go to visit the summer house respectively;
- Secondly, they describe the built environment in front of a camcorder;
- Thirdly, their descriptions will be compared with the descriptions from the main simulation test to find out the potential differences.

The number of the participants will be three since the difference between the Western and Eastern cultures will be omitted. The reason for this is that the aim of the auxiliary test is focused on the difference between the description of the real building and the description of the printed photograph rather than the difference between the participants, so one representative from each main group will be enough to cover the universality of this phenomenon. The two very primitive principles – age and profession obviously cannot be ignored. But the secondary principle – the East and

West cultural backgrounds will only be respected by the fact that the three chosen participants come from two different cultural backgrounds. Additionally, there is another key point for choosing the participants. It is that, in order to decrease the possible errors arising from different personalities, the participants will be picked out from the people who have taken part in the main simulation test. They of course must be the ones who have shown the best capability of observation and description during the main test.

Summing up the content above the auxiliary test has been carefully designed. Accompanying the main simulation test, it will make the whole simulation test more comprehensive and persuasive.

Figure: 6-1, The Summer House

6.3 The Analysis

According to the two parts of the test, the analysis also will be composed of two divisions, which are about the main simulation test and the auxiliary test respectively.

6.3.1 The Analysis of the Main Simulation Test

6.3.1.1 The Analysis of the Creating Parole

To be consistent with all other completed built environment signs, the creating paroles of these four buildings also have finished their duty and been deposited as the realized langue – the constructions, images, models and text. So, to explore the creating parole, the only way is to collect data from different resources, which may be the academic studies, the original photographs or direct instructions from their designers.

In the following four sections, the potential creating parole of those four buildings used in the test will be carefully reviewed. However, before that, one important point must be clarified. It is that going too far in the creating parole study is not essential in this simulation test. That point can be explained from two aspects:

- Firstly, study of the creating parole is actually an endless task in the built environment field. In the chapters before, it has been proved that the creating parole is a mixture including many related professional scopes. Not only is the

real building undoubtedly realized by owners, planners, architects, engineers, artists, officers, etc., but also a pictorial building reflects the idea of the painter as well as many other people's influence on it. Without any exaggeration, the total creating parole of many proper built environment segments can be rich enough to deserve a new thesis. So it is impossible to cover them at all only in the following short sections;

- Secondly, the main purpose of the simulation test is to prove that built environment linguistics is a kind of living langage ubiquitously used in our life rather than to uncover all the information hiding behind one or two special buildings. So, what we should focus on is the mechanism of linguistics. Based on this point, it is quite enough to merely show that the creating parole does actually exist and work within linguistics.

According to the analysis above, it is clear that the explorations about the creating parole of the four buildings should be carefully controlled. They cannot be too superficial to show the function of the creating parole, and cannot be too esoteric to gain the main target. Between the balance of getting and quitting, they detailedly and concisely uncover the four buildings' authorized meanings thereinafter.

OSA Signal Tower

The first prototype chosen in the simulation test is a short-lived adaptive re-use project of a group of 'guerrilla architects' known as the Office for Subversive Architecture, or OSA London. This image represents the actual built environment. This small concrete house standing on pillars without access was originally a redundant signal box of the Shoreditch Tube Station in east London before OSA's quick one-day refurbishment. Suffering from long time non-use and weathering, it ghosts in the deserted surroundings and casts its alien phantom thoroughly out of the local context.

OSA's work dramatically made this dead structure come back to life. According to their website introduction, although only by a series of simple and quick artifices, a pretty small-scaled typical mock-Tudor family house in a suburban or even countryside area magically stood in the air at last. *"Two sides of the building structure have been painted 'brilliant white', artificial geraniums, purchased online, have been 'planted' in typical green window flower boxes and fixed to the windows. A hanging basket with artificial geraniums has been installed alongside the front door. The balcony has been converted with the finest artificial long grass. A regular but colourful 'directors chair' rests alongside the cheapest BBQ on sale. The door was painted gloss black and conventional suburban ironmongery was installed. Without any supplied electricity a car battery, suitable for any small family car was installed with a light hooked up to a timer. The timer was set for 2100hrs each night;*

sunset."[245] In brief, they did everything on the house to make it looked habitable and comfortable.

OSA's authentic intention is clear. Superficially, *"this project is intended to raise awareness of how former industrial sites in the Thames Gateway area to the east of London are being developed for housing without much thought for their design."*[246] But, according to their official website, they sincerely wanted to challenge the poor environment of east London and believed that this abandoned area *"has the chance to be regenerated in a way everybody can participate, housing projects and mixed used buildings as well as public space."*[247] In realizing this idea, they have demonstrated to the locals by a real example that – by only one day of informal work, *"an idealised perfection of everybody's dream property"*[248] can be achieved. The sense of "Home" has indeed been endowed onto the building.

Despite subsequent demolition by authorities resulted in this project being only an ephemeral urban mirage, the OSA architects still planned further developments for it. They even designed *"a transparent bubble to protect and conserve will enclose this brand new looking house. At the same time it appears like an exhibited object in a museum and at night it is also an illuminated landmark."*[249] However mournfully,

[245] I-n-t-a-c-t, [online]. Available at: http://www.i-n-t-a-c-t.org/events.html [20 February 2007]
[246] OSA, [online]. Available at: http://www.osa-online.net/de/press/intact/intact4.html [20 February 2007]
[247] I-n-t-a-c-t, [online]. Available at: http://www.i-n-t-a-c-t.org/area.html [20 February 2007]
[248] I-n-t-a-c-t, [online]. Available at: http://www.i-n-t-a-c-t.org/intro.html [20 February 2007]
[249] I-n-t-a-c-t, [online]. Available at: http://www.i-n-t-a-c-t.org/intro.html [20 February 2007]

now only the ineradicable write paint is left to represent the existence of this outstanding work (Figure: 6-2).

Figure: 6-2, OSA Signal Tower

Peak Lab

The second prototype in the group is a challenging project named the "Peak_Lab", which was designed as a research station located at high altitude. Never realized as an actual structure, it represents a scheme built environment in professional representations – computer images and full-size mock-ups. The capsule-like small building was a product of international cooperation. Under the direction of Prof. Dr. Ulrich Pfammatter and Prof. Richard Horden, a group of students respectively from TU Munich and HTA Lucerne collaborated together to complete the design. According to Horden's official website, *"this complex assignment aims to achieve a spatially attractive, lightweight micro architecture structure that adapts in a self-sustaining way to both working and living conditions, and is resistant to the extreme climate. Transport per helicopter implies weight limitations that result in the modularity of the units."*[250] The Peak_Lab project has been developed into three different schemes. Besides the vertical one (Peak_lab 01) chosen here, a horizontal telescope-like Peak_Lab 02 and a portable beetle-like Snow House were also cultivated to fit the various geological situations and diverse functions within the alpine setting.[251]

A pertinent introduction about the Peak_Lab 01 has been given in the architectural

[250] Peak lab, [online]. Available at: http://www.hcla.co.uk/projects/?prorub1=tr&prorub2=15&pid=97 [22 February 2007]

[251] Peak lab, [online]. Available at: http://www.hcla.co.uk/projects/?pid=119, http://www.hcla.co.uk/projects/?pid=120, http://www.hcla.co.uk/projects/?pid=121 [22 February 2007]

journal – Detail, (December, 2004). Actually the authentic idea and information of this building can be detected from these words below:

"Located on the Klein Matterhorn, Peak_Lab is a visionary concept for an Alpine research and testing station in a lightweight form of construction. It is designed to accommodate three people, who can live and work in the laboratory for three weeks at a time. At an altitude of nearly 4,000 m, the extreme climatic conditions, with wind speeds up to 260 km/h, restrict building activities to roughly 50 days a year. Prefabrication is essential, therefore. The station can be installed in different locations, but since it has to be transported by helicopter, the dimensions and weight may not exceed certain limits. The structure is therefore divided into five modules, with a vertical ladder linking the individual spatial units. At the top is the ventilation plant. Below this, the second module – reached via a gangway – contains the entrance/wind lobby, a cloakroom space and sanitary facilities. The mechanical services are housed in a compact container in the third module, where there is also a cooking and dining area. The actual laboratory is in the fourth module, with divisible sliding, folding tables that can be used as laptop working areas or as a couch for high altitude medical investigations. The lowest module serves as a sleeping compartment. Peak_Lab is self-sufficient in terms of energy supply and waste disposal. Electricity is generated by photovoltaic cells over the entire surface facing the sun. Fresh air is sucked in via wings on the entrance module and fed into the ventilation plant above. The air then flows down through the ventilation space behind the facade, where it is

heated by the aluminium cladding. A reheating apparatus finally warms the air to the desired internal temperature. Drinking water is provided by melted snow; and waste water is reprocessed. The lab is held in position by only three anchor fixings concreted into the rock. The entire load-bearing structure, consisting of the triangular vertical lattice-truss spine, the gangway and compression struts, arrives by helicopter. It is fixed to the anchor points and stayed with cables. The modules are then flown in individually and hung on to the spine."[252] (Figure: 6-3)

[252] Architekturabteilung HTA Luzern, Prof. Ulrich Pfammatter, Betreuer: Christian Fierz, Mathias Frey, Armando Meletta, Urs Rieder, Lehrstuhl für Gebäudelehre und Produktentwicklung TU München, Prof. Richard Horden, Betreuer: Lydia Haack, Walter Klasz, Tragwerksplaner: Joseph Schwartz, HTA Luzern, Peak_Lab Research Station, *Detail*, 2004, Dec., pp. 1459-1462 Betreuer: Lydia Haack, Walter Klasz, Tragwerksplaner: Joseph Schwartz, HTA Luzern, Peak_Lab Research Station, *Detail*, 2004, Dec., pp. 1459-1462

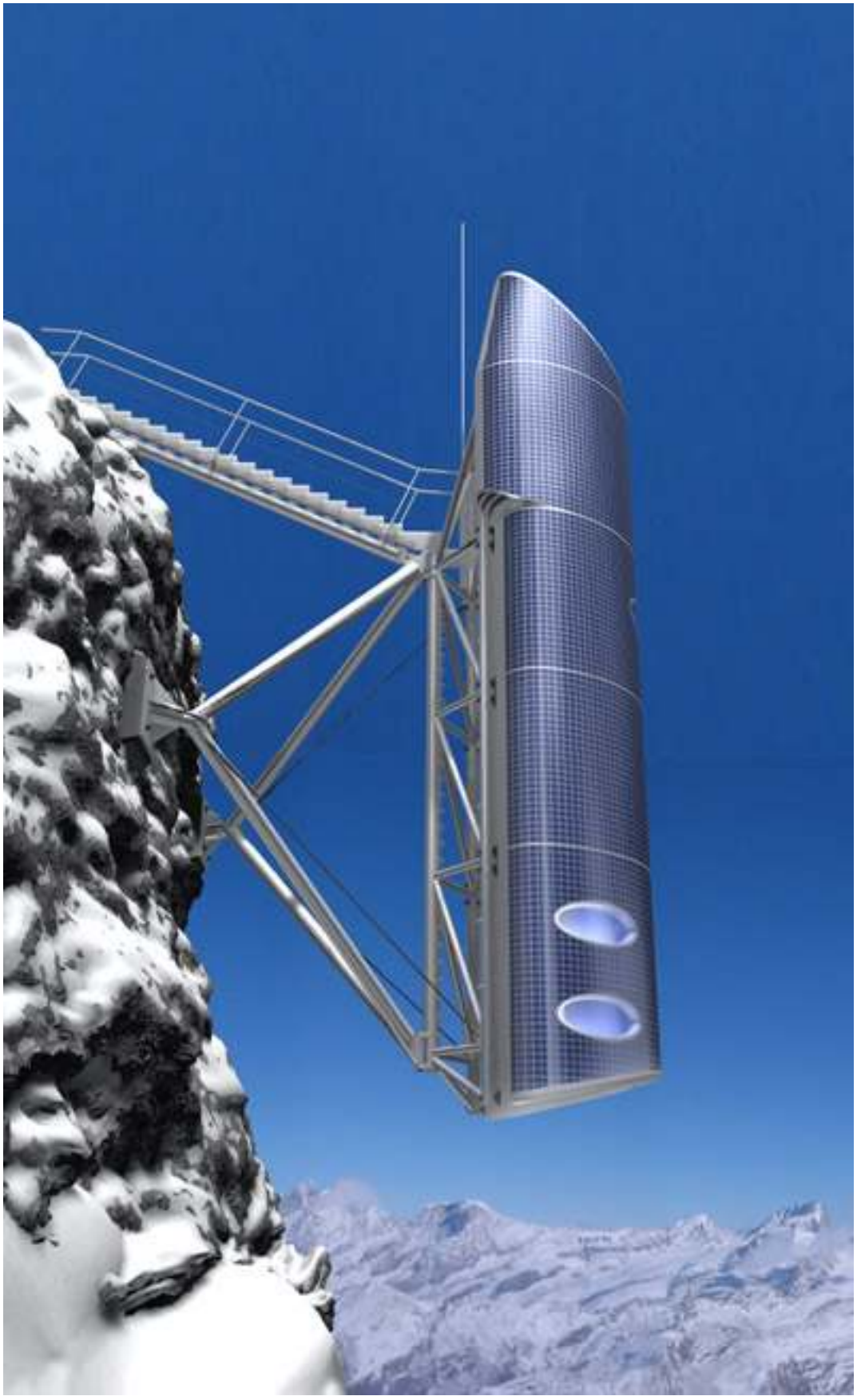

Figure: 6-3, Peak_Lab

Adorno's Hut

An extraordinary temple-like grid was chosen as the third prototype of the test. This small structure actually experienced the process of design and construction but was only a piece of artwork for indoor exhibition rather than a real functional building for utility. It is the representative of the sculptural built environment.

The structure's name is "Adorno's Hut", designed by Scottish artist, gardener and poet – Ian Hamilton Finlay, constructed in collaboration with Keith Brookwell and Andrew Townsend in 1989. Antonia Reeve photographed it and left us probably the best and only picturial record of it. According to Drew Milne's argument in his essay – *Adorno's Hut: Ian Hamilton Finlay's Neoclassical Rearmament Programme*, this is *"Perhaps the clearest illustration of Ian Hamilton Finlay's neoclassical aesthetics of modernity."*[253] For interpreting the essence of the neo-classical, Hamilton Finlay created a dramatic combination or collision between two totally different materials – wood and steel, and implied the chronic evolution of architecture and material as well as the coincidence of different styles. This authentic characteristic was precisely embodied in Milne's logical depiction – *"The object consists of a neoclassical temple made out of columns of wood in roughly hewn tree trunks on one side, modulating into more finely hewn planks, which are then joined to overtly futurist red metal girders, which in turn form metal columns on the other side, wood and metal meeting*

[253] Adorno's Hut, [online]. Available at: http://jacketmagazine.com/15/finlay-milne.html [22 February 2007]

in the middle to form a grid-like roof open to the elements."[254] Within the interior context of the hut per se, considerably compound information mixing nature – artifice, coarseness – meticulousness and classicality – modernity is apparent.

The forceful metaphor of Adorno's Hut also turned it into a symbolic icon of the postmodernist thought. In Charles Jencks' book – *What is Post-Modernism?* The author called it a *"post-modern hybrid that challenges the present with the past and the past with the present"*, as well as being a typical representative to annotate the postmodernism's attribute. As he noticed that *"the origins of architecture, in trees and brachiated structures, led to the primitive hut which then led to the classical temple. This logical and evolutionary argument is placed above stylistic integration: the post-modern typically subverts traditions from within through a form of double coding. It accepts conventions in order to criticize and extend the modern, the classical and other traditions."*[255]

"Adorno's Hut" was first displayed in Finlay's Garden Temple at Stonypath – a Temple for 'To Apollo, His Music, His Missiles, His Muses'. Undoubtedly this special venue also added new connotations on this multi-meaning building with a simple look (Figure: 6-4).

[254] Adorno's Hut, [online]. Available at: http://jacketmagazine.com/15/finlay-milne.html [22 February 2007]
[255] Jenks, Charles. *What is Post-Modernism? Fourth Edition,* (Chichester, West Sussex, Wiley – academy, 1996), p.11.

Figure: 6-4, Adorno's Hut

Thomas Kinkade's Sweetheart Cottage II

The last prototype applied in the simulation test is a traditional thatched cottage painted on canvas. It represents the pictorial built environment. Its official name is the Sweetheart Cottage II, and the artist – Thomas Kinkade, according to the biography on his official website, is well known as America's most collected living painter.[256] Kinkade is not an architect, but by his keen inspirations, the themes of most of his works are closely related with the built environment. Some of his paintings reveal the real properties and street vistas by artistic technique, but more were produced purely from his imagination. Indeed a large amount of different cottages make up this group.

Sweetheart Cottage II was painted in 1993. Kinkade conceived it as a gift for his wife - Nanette - on Valentine's Day. The artist himself has given a concise description for this picture on the website and the original and authentic meaning of the picture can be detected from these words. He said: *"For the second work in my Sweetheart Cottages collection, I've conjured a vision of a perfect romantic hideaway. 'Falbrooke Thatch' is nestled right next to a charming little waterfall, with an arched footbridge leading from the front door over the falls. I've devoted 'Falbrooke Thatch' to Valentine's Day (note the 214 address just below the heart-shaped window) and to romance. In fact, I've hidden hearts throughout the painting. The more hearts you can find, the more romantic you are."*[257] Actually, some metaphors were used in the

[256] Thomas Kinkade, [online]. Available at: http://www.thomaskinkade.com/magi/servlet/com.asucon.ebiz.biography.web.tk.BiographyServlet [26 February 2007]

[257] Thomas Kinkade, [online]. Available at: http://kinkadeartwork.net/page00000031.html[26 February 2007]

painting to imply the topic, and they have made watching this picture become a real game to try your serendipity. Besides the date 214 on the wall and some obvious heart shapes that can be found on the thatch roof, doors, windows and address panel, there are still more details waiting to be suddenly discovered. Some of the flowers, leaves on the trees and birds, are in fact, hearts. The handles on the bridge form the silhouette of the hearts. There are even hearts on the lamps. More interesting, the initial letter in his wife's name – N can be found on the lintel of window, door panel and even the top of the chimney. All these contents compose a complex and mysterious surrounding since Kinkade painted this picture as his dream house. He said that if anyone knew where the actual location was to let him know, because he would like to take his wife Nanette there. By his extraordinary capability of rendering the light, the artist created a kind of untraceable glowing mist of dawn or sunset, which overrules the whole atmosphere and seamlessly fuses the buildings into the nature[258] (Figure: 6-5).

[258] Thomas Kinkade, [online]. Available at: http://www.thomaskinkadedestin.com/store/sweetheartcottageii.htm http://www.artontheweb.com/kinkade-trivia.htm [26 February 2007]

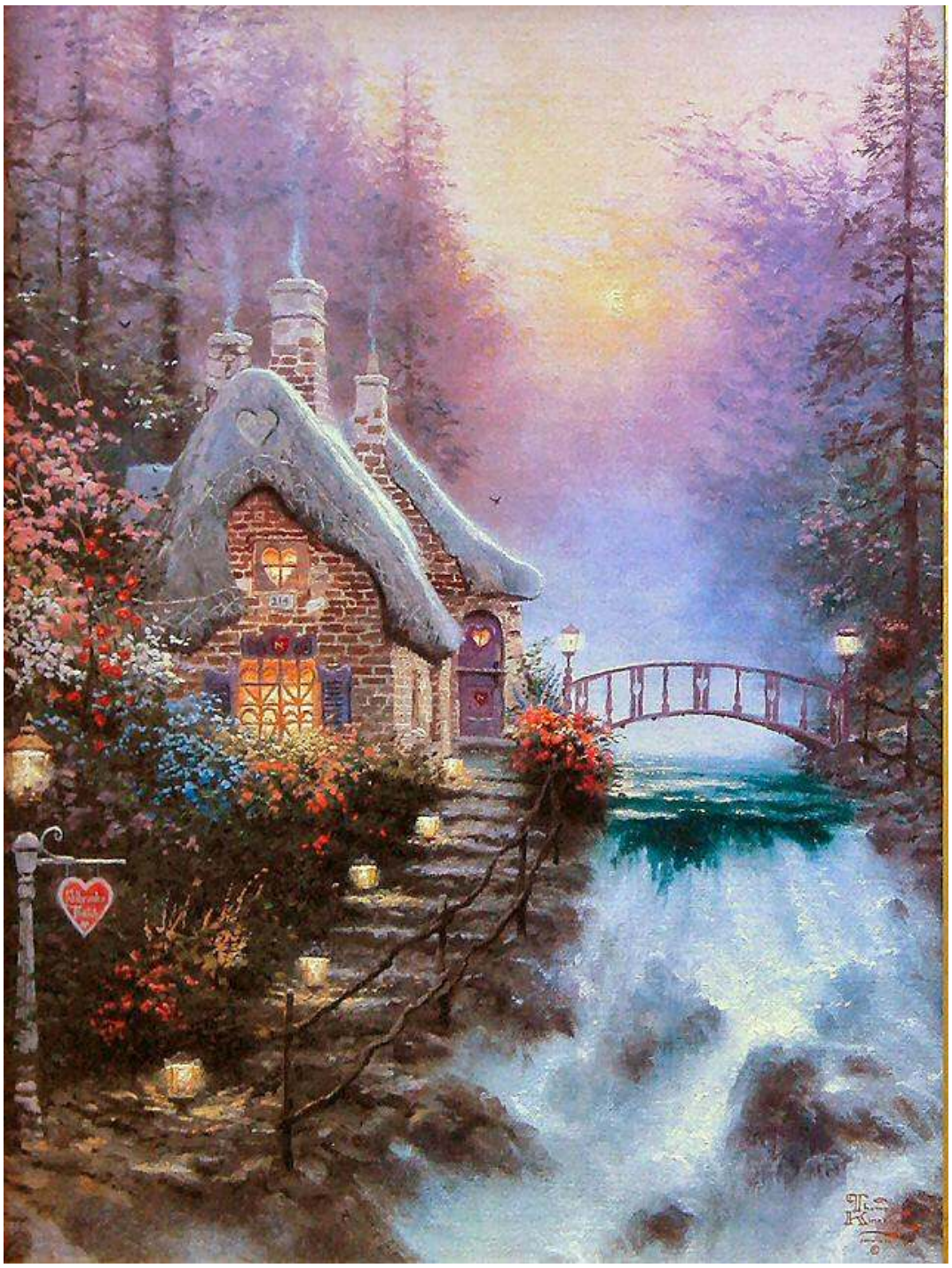

Figure: 6-5, Sweetheart Cottage II

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Through both the explanations and pictures thereinbefore, it is clear that the creating
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parole is operated in the built environment langage system. They endow the built environment with real figures. Following this, it is the perceiving parole's turn to produce infinite significance.

6.3.1.2 The Analysis of the Perceiving Parole

The perceiving parole is comparatively apparent in the process of the test. According to the explanation thereinbefore: *"perceiving could be any means of receiving and dealing with the information. Thus the semiological perceiving parole includes any intellectual activities in our minds"* (3.3.3), so all kinds of corresponding activities to the photographs by these participants can be defined as the perceiving parole.

Perceiving is an individual behaviour for receiving information. Therefore it is normal to say that the perceivers naturally can choose either the introversive way or the extroversive way to deal with their personal understanding. By the former, people negatively digest information in their minds without communicating with others; but by the latter one, the personal understanding can be actively conveyed among different persons. Apparently the introversive way is recessive and still can't be studied by current technology; in contrast, the extroversive way is dominant and easy to be recorded and analyzed. In the simulation test, the introversive perceiving has been extensively converted into the extroversive perceiving by both the drawing of the item and the information delay of speaking-listening. Undoubtedly all the speaking and drawings are the embodiment of the perceiving parole of the built

environment langage.

Corresponding with the creating parole, the perceiving parole also has been divided into the non-spoken & written parole (Non-S&W Parole) and spoken & written parole (S&W Parole) in the theoretical deduction (3.3.4). Indeed all the speaking-listening communications between the participants clarify not only the existence but also the actual operation of the S&W Parole. However for the Non-S&W Parole, which contains three branches – scientific research, artistic experience and free meditation, more interpretations are necessary.

The only representative of the Non-S&W Parole is the drawings. However, without the spoken & written langage, it is difficult to cover the numerous various ways of perceiving the built environment. In addition, under the limited condition of the test, it is also impossible to mimic all the complicated scientific techniques, multifarious artistic tendencies and elusive faithful meditations. Encountering this fact, drawing, as one of the most common means applied in the psychological test, is still the best choice. By this basic representing way, a large amount of information can be analyzed out. Additionally, focusing on the simulation test, all the three categories also can be detected from within.

- Firstly, in the professional groups, the drawings can be considered as the professional expressions of architects and planners; but in other groups, the

personal drawings also imply the drawers' knowledge attainment and educational background;

- Secondly, as one of the normal artistic ways, drawings rationally bear the personal art tastes of the drawers;
- Thirdly, probably the meditation about religions is difficult to filtrate out from the pictures because no religious-background photograph was selected in the test. But other sorts of freewill thoughts have been endowed into the drawings randomly by their drawers. Interestingly, totally beyond the information given by the speakers, both childish fantasies and adult fictional imaginations resulted in incredible free recreation and modification from the original photographs. On their new drawings, a variety of the components just come from nowhere but the personal meditations.

So here, it is clarified that the perceiving parole of the built environment langage can be manifested within the test procedure. Combining the former section – "Analysis of the Creating Parole" together with this section to think about the simulation test, undoubtedly both kinds of paroles have been faithfully revealed. On a superficial level, the existence of both the langue and the paroles combo has been proven. But on a deeper level, to uncover the operational mechanism of built environment linguistics – signification, more meticulous comparisons and analysis are needed.

6.3.1.3 The Analysis of the Significant Operation

6.3.1.3.1 Instruction about the Design of Charts and Tables

In the test, the significant operation is run as a series of information exchanges between narrations and drawings. The simulation test includes in total four building photographs and twenty-four sub-tests, but in every single sub-test, there are three narrations and three pictures in total. They combine fore-and-aft together to form the significant operation procedure and a large amount of information is contained within. So, pointing to this condition, the key of the analysis is to locate a balance point between summing up the mass information as concisely as possible and reflecting the data as much as possible. Based on this circumstance, the analyzing method is meticulously chosen; meanwhile, the results are summed on a set of designed charts.

The analyzing charts comprise two parts – the main charts showing the whole significant procedures and the affiliated tables showing the data statistics.

Four charts compose the former. Every one represents a building photograph. In each main chart, the six significant procedures are listed according to the different participant groups – the professional (Western), the professional (Eastern), the non-professional (Western), the non-professional (Eastern), the children (Western) and the children (Eastern). But in every single procedure, three narrations and three pictures are arranged one by one according to their turn in the sub-test. Hereinto, to

show the mass information as briefly as possible, the long narrations are abstracted to some information-items, and the pictures have to be kept in the original format in that nothing else can substitute them. However, to keep the primal data in the narrations as much as possible, every information-item is affirmed to contain three elements – the Subject, Complement and Attribute. This choice can be explained briefly in the following words. Because the narrations in the test are about describing an embodied thing rather than narrating an event, according to the grammar of the spoken & written langage, the best way to preserve information is the Subject-Complement-Attribute system rather than the Subject-Verb-Object system. Based on this fundamental design, the balance point between fidelity and conciseness is located.

Furthermore, in the significant operation, since the original information from the first participant will be gradually lost during the following exchange process meanwhile some new information will be probably created, for distinguishing the difference between the primal and novel, another system of information-items – the New Subject, New Complement and New attribute should be introduced into the analysis. By this decision, actually all the information from one narration can be latticed in a standard three-column form, which from left to right shows the Subject and New Subject, Complement and New Complement, Attribute and New Attribute respectively. What is more, colours also can be used to distinguish them – the red for Subject, yellow for Complement and blue for Attribute; the orange for New Subject, purple for New

Complement and green for New Attribute. So here, putting the colour forms and drawings together in turn, a single significant process can be embodied in a series of "original photograph → 1st form → 1st drawing → 2nd form → 2nd drawing → 3rd form → 3rd drawing". Then, if connecting the information-items and their corresponding contents in the drawing by arrows, we will finally get a whole information flow and notice two tendencies reflecting both the continual decrease of the original information and the continual increase of new information.

The information flows merely can reveal the existence of the information transfer but cannot compare and study the information in numerical value. Hereby for converting the abstract information to quantitative value shown in numerical tables, the Subject and New Subject, Complement and New Complement, Attribute and New Attribute need to be valued. Since the contents of the drawings have been unified with the information-items that are the only assessable part in the test, it is also reasonable to value the whole simulation test by information-items. As they have been condensed in latticed forms, so every grid in the forms represents one independent information element and can be valued as "1". However, within the information flows, sometimes the Complements or Attributes will only lose their information partly rather than entirely. Moreover, because there are two narrations following the original one in whole information flow, information can only be lost twice. Pointing to this condition we can further define that the lighter tones of the six colours represent the first occurrence of losing information, and the lightest tones are for the second occurrence.

So, by this decision, finally it can be confirmed that every grid with the original colour (red, yellow, blue, orange, purple and green) in the tri-colour form is valued as "1", their lighter tones are valued as "0.5" and the lightest tones as "0.25". Following this, at every end of the information flow, two column charts can be figured out. In numerical values, one shows the original information decreasing tendency and the other shows the new information increasing tendency.

Then, based on these charts, the advanced statistics can be followed. Firstly, skipping over the difference between western and eastern, the classified statistics can be done by professional group, non-professional group and children group. Secondly, skipping over the difference among the professional, non-professional and children, the summed statistics can be achieved. According to the values on both the classified charts and the summed charts, a sort of composite bar chart can be figured out to show "the ratio of the original information keeping" and "the ratio of the new information increasing" compared with the total amount of the original information from the first participant. They can be clearly distinguished by their primal colours (red, yellow, blue, orange, purple and green). Besides this data, it is also obvious that the total amount of information (including original and new) is reduced in most of the information flows. These parts of the loss can be called "the ratio of the information losing in total" and coloured grey.

So, putting all this analysis together, the four main charts can be finished. Although

they can reflect the information more directly and legibly, the values on them still need to be converted into percentages, which form the next group of affiliated tables (Figures: 6-6, 6-7, 6-8, 6-9; for high-definition figures, seeing the attached CD).

The affiliated part also comprises four independent tables. Basically, they are the percentilization of the composite charts. Three of them are organized by professional group, non-professional group and children group respectively. The actual percentages of the (New) Subjects, (New) Complements and (New) Attributes are laid according to the horizontal row, but four different building photographs are listed from the top down. At the bottom of each table, the average values of every group are given. It makes the transverse comparison among different groups more easy and clear. The fourth table sums up all the data together. By the same layout with the former three tables, it shows the final general data of the whole simulation test, especially in the average part (Tables: 6-3, 6-4, 6-5, 6-6).

By the instruction above, the design of all the charts and tables for the significant operation analysis has been explained. It is clear that the emphasis focuses on the increasing and decreasing tendencies of the information but, indeed, just between the rise and fall of numbers, all the principles and rules of the built environment langage can be manifested.

Participant A				Participant B				Participant C				Participant D	Information Statistics Bar Charts	Classified Information Statistics Bar Charts	Summed Information Statistics Bar Charts
PROFESSIONAL Western	House	with pitched roof	single storey; rectangular; infilling white timber cladding between columns	House	with pitched roof	concrete one and half storey; infilling white timber panels, 1970s	Building	with pitched roof	concrete						
	Pillars		four; concrete; raising the house up; up to roof level; slightly set in; 1970s	Pillars		four; concrete; raising the house up; slightly set in	Pillars		concrete; raising the house up; slightly set in						
	Short side	with one window													
	Long side	with two windows		Long side	with windows		Long side	windows with white timber panel							
	Balcony	with fake grass	on short side; half width of it; no hand rail	Balcony	with fake grass	on short side									
	Flowers		hanging baskets	Flowers		hanging baskets on roof									
	Building		three or four storeys; background												
	Wall		red, black crumbling; foreground	Wall		brick crumbling; from front going back	Wall		brick crumbling; through gullies; under the house						
	Cityscape			Cityscape		background									
PROFESSIONAL Eastern	House	no connection with ground	little; rectangular; concrete; Tudor style; white wall with timber-like frame	House		little; white; concrete; width is half of the length	Building		little; rectangular; width is half of the length						
	Pillars		four; concrete; raising the building up	Pillars		four; concrete; raising the building up	Pillars		four; concrete; supporting the building; under the long side						
	Short side	with door and window		Short side	with door and window		Short side	with door and window							
	Long side	with two or three windows		Long side	with scene windows		Long side	with scene windows							
	Balcony	with turf	small; on short side; no handrail	Balcony	with turf	on short side	Balcony		big; on short side						
	Flowers		on windows	Flowers		on windows	Flowers		on balcony						
	Door		to the balcony	Door		to the balcony	Door		to the balcony						
	Man		looking out in one window	Man		looking out in one window	Men		two; in one window; on balcony						
	Chairs		two; on balcony	Chairs		on balcony									
	Wall		around	Wall		around									
	Old building		around												
	Blue day		sunny	Blue day	with white cloud	sunny	Blue day		sunny						
	Grass														
	flower														
	Outskirt		of city	Outskirt		of city									
										Grassland					
										Border		between city and county			
NON-PROFESSIONAL Western	Building		prefab concrete slab cladding; grey brown structure; white wall	Building		60's prefab concrete cladding; grey brown side; white wall, square	Building		60's prefab concrete: slab; grey colour; on storey						
	Pillars		four; concrete; raising the building up 2m high	Pillars		four; raising the building up; extending to full high	Pillars		four; raise the building up; going on edge of the building						
	South side	with one window		South wall	with one window		South wall	with one window							
	East side	with one window		East wall	with one window		East wall	with one window							
	Guy		in east window	Chap		in east window	Man		on south window						
	Flowers		hanging on windows	Flowers		hanging on windows	Flowers		pouring out the windows						
	City			Cityscape			Cityscape								
	Blue day			Blue day			Blue day								
	Building		industrial commercial; on background, like Birmingham brick, in front of the building; like train station	Building		industrial commercial; on background, like Birmingham brick, in front of the building; like train station	Building		industrial; onbackground, 60's tower blocks						
	Wall			Wall			Wall		old brick Victoria; in front of the building						
NON-PROFESSIONAL Eastern	Bungalow	with triangular roof	white	Bungalow	with triangular roof	white	Bungalow	with triangular roof							
	Pillars		four; raising the building up	Pillars		four; raising the building up									
	South wall	with door and window	square	South wall	with door and window		South wall	with door and window							
	East wall	with two windows	rectangular	East wall	with two windows		East wall	with two windows							
	Balcony		small; out of the door	Balcony		small; on south wall	Balcony		on south wall						
	Flowers		on windows	Flowers		on windows	Flowers		on windows						
	Windows	with black frame		Windows	with dark red frame		Windows	with red frame							
	Door	with black frame		Door	with dark red frame		Door	with red frame							
	Chair		on balcony	Chair		on balcony	Chair		on balcony						
CHILDREN Western	House	with triangular roof; no stair	white with brown corner	House	with triangular roof	white and black	House	with brown roof							
	Legs		four; supporting the house	Legs		four; holding the house	Legs		holding the house						
	Door			Door		on right side	Door		on right side of the house						
	Window			Window		brown	Window		on left side of the house						
	Grass		outside the door	Grass		outside the door	Grass		on left side						
	Man		poping out the window	Man		poping out the window	Man		heading out the window						
	Chairs		two; pink and blue; on grass	Chairs		two; pink and blue; on grass	Chairs		two; pink and blue; on grass						
	Wall		brick; under the legs	Wall		brick; under the building	Wall		brick; in the bottom						
	Plants		next to the wall	Grass land		through the wall	Grass land		next to the wall						
	Buildings		background	Small houses		background	Small houses		background						
	Blue day	with cloud		Blue day	with cloud		Blue day	with cloud							
CHILDREN Eastern	House	with vertical black lines	white; on poles	Building	with vertical wooden plank line & triangular roof	white; on pillars	House	with triangular roof	supported by cylinders						
	Poles		four; behind the wall	Pillars		four; behind the wall	Cylinders		four; stone colour						
	Windows			Window		one	Window		one						
	Flowers		on windows	Wall		brick									
	Wall		brick	Shrubs bushes			Wall								
	Shrubs bushes			Buildings		background	Shrubs								
	Buildings		background												
										Hay		on left side			
										hedge		on right side			
				Flower pot		on windows	Flower pot		empty; on the window						

Figure: 6-6, Note: In the Tri-colour forms, red represents the Subjects, yellow represents the Complements, blue represents the Attributes, orange represents the New Subjects, purple represents the New Complements, green represents the New Attributes.
Every grid with the original colour (red, yellow, blue, orange, purple and green) in the Tri-colour Form is valued as "1" in the following Column Charts, and their lighter tones are valued as "0.5" but the lightest tones as "0.25".

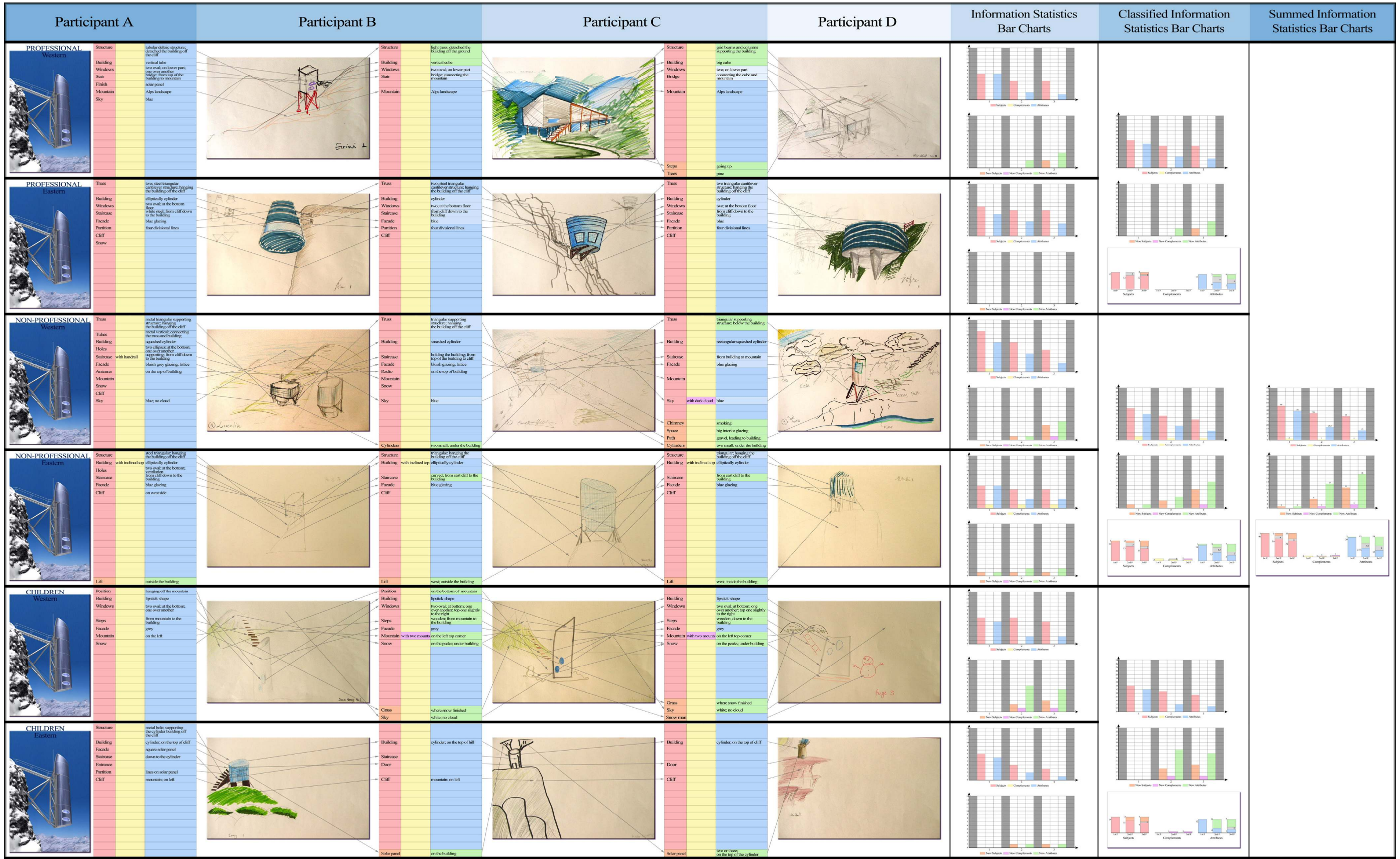

Figure: 6-7, Note: In the Tri-colour forms, red represents the Subjects, yellow represents the Complements, blue represents the Attributes, orange represents the New Subjects, purple represents the New Complements, green represents the New Attributes.
Every grid with the original colour (red, yellow, blue, orange, purple and green) in the Tri-colour Form is valued as "1" in the following Column Charts, and their lighter tones are valued as "0.5" but the lightest tones as "0.25".

Participant A				Participant B				Participant C				Participant D	Information Statistics Bar Charts	Classified Information Statistics Bar Charts	Summed Information Statistics Bar Charts
PROFESSIONAL Western	Frame	with triangular roof square body	exhibition; repeated four times; huge scale		Frame	with triangular roof cubic body	exhibition; repeated four times; huge scale		Frame	with triangular roof cubic body	repeated four or eight times; huge scale				
	Half		H shape steel beams & columns		Half		two; H shape steel frame		Half		two back timber structure; organic like trees				
	Half		wooden structure; columns like trees		Half										
	Garden		containing the building; paving square tiles						Roof		natural wooden panel				
									Body		H shape steel tube				
PROFESSIONAL Eastern	Structure	with pitched roof trusses & columns	four trusses; four pairs of columns; like Greek temple		Frame	with pitched top & two columns on each frame	amazing four times; like Parthenon		Frame	with pitched roof & three bays	four triangular trusses and four pairs of columns				
	Left		H shape steel beams & columning; red		Left		steel structure; red		Left		steel structure; red; covered by roof panels				
	Right		wooden beams & columns; original wood colour		Right		wooden structure; wood colour		Right		wooden structure; wood colour				
	Rivets		horizontal; three; in the middle; combining the both together from wood to metal		Rivets		horizontal; three; on crossing beam; combining the both together from wood to metal								
NON-PROFESSIONAL Western	Structure	with triangular roof trusses, four or five pairs of columns	demonstration; small 2.5m; like kid's house, Parthenon; no door, window, tiles		Structure	with triangular roof, columns and square body	demonstration; small 3m; like kid's house, Greek; unique theatre; no wall, tiles; bone of house		Structure	with triangular open roof truss	concept framework; small 2m; like kiddie building; no wall, tiles				
	Left		metal; red		Left		metal; red		Left		metal; red; Greek style				
	Right		wooden; plain timber top; rustic trunk columns		Right		rustic wooden building; French style		Right		untreated wooden building; French style				
	Screws		rustic; like connecting both sides together												
	Big room		dark; containing the building		Big room		dark; containing the building; big ground, exhibition hall		Big room		dark; containing the building; exhibition hall				
	Heating radiator		behind the structure; grey; on the back wall												
NON-PROFESSIONAL Eastern	Structure	with triangular roof truss, two columns			Building	with triangular roof truss			Building						
	West side		red columns; wooden, iron		West side		rusting red columns; iron		West side		red columns; iron				
	Right side		wooden columns; bark colour; like trees		East side		bark colour columns		East side		bark colour columns				
	Screw														
	Back ground		wooden floor; grey brick wall without plaster work												
	Lighting		from left side		Lighting		from west to east								
	Heater		on back wall		Heater		on north wall		Heater		on north wall				
					Floor		wooden		Roof		pitched				
					Wall		brick; without plaster work		Floor		wooden				
									Wall		brick				
CHILDREN Western	Structure														
	Left columns		four; red; metal; square		Left columns		four; red; metal		Left columns		four; red				
	Right columns		rectangular		Right columns		four; tree wood; cylinder		Right columns		four; brown; cylinder				
	Beam		four; wooden; cylinder; like tree trunk		Bars		between columns		Bars		between columns; half red half brown				
	Bars		horizontal; half red metal half fireber; joining together two; forming triangular top; half red metal half wooden		Roof		normal shape; half metal half wood								
	Screws		onto wooden one												
	Light		blusiy; from right invisible window		Light		from window		Light		through window				
	Chamber		dark												
	Floor		paving square tiles; clay colour		Floor		paving square tiles; clay colour		Floor		paving tiles; pink tarnish				
	Wall		grey stony		Wall		next the steel columns; with window		Wall		on the right; with window				
	Hole		behind the red columns		Doorway		behind the columns		Hole way		on the left				
	Heating radiator	with two white thermostats	black; on bottom wall												
					Blue floor		under tiles		Blue thing		under tiles				
CHILDREN Eastern	Posts		four		Posts		four								
	Another posts		four; yellow brown; next to the fireplace		Cylinders		yellow brown		Supports		dark yellow brown				
	Top		triangular; red		Top		triangular; red		Roof		triangular; red				
	Back wall		brick; grey												
	Floor		paving tiles												
									Windows						
									Car		blue				
					Brick		in front of posts		Brick		base				

Figure: 6-8, Note: In the Tri-colour forms, red represents the Subjects, yellow represents the Complements, blue represents the Attributes, orange represents the New Subjects, purple represents the New Complements, green represents the New Attributes.
Every grid with the original colour (red, yellow, blue, orange, purple and green) in the Tri-colour Form is valued as "1" in the following Column Charts, and their lighter tones are valued as "0.5" but the lightest tones as "0.25".

Participant A				Participant B				Participant C				Participant D	Information Statistics Bar Charts	Classified Information Statistics Bar Charts	Summed Information Statistics Bar Charts
PROFESSIONAL Western	Gable wall		of the front cottage		Cottage		in front		Cottage		in front				
	Gable wall		of the back cottage		Another cottage		on the back		Another cottage		on the back				
	Wall		brick												
	Roof		thatch												
	Chimneys		smoking, on each gable		Chimneys		smoking		Chimneys		smoking				
	Door	with arched top	on the back right gable		Entrance				Door		on the front cottage				
	Heart sign		printed in the thatch		Windows		two; on entrance facade; one bigger		Windows		two				
	Windows		two		Fairy world				Fairy world						
	Fairy world				Misty										
	Misty				Trees		two pines; on the right side								
	Trees		two pines		Bridge		arched		Stream						
	Bridge		curved		Stream				Waterfall						
	River				Waterfall				Pink flowers		on the left side				
	Waterfall		on the right side		Small tree	with pink flowers and leaves	on the left side		Path		leading to the cottage				
	Small tree	with pink leaves	on the left side		Path		from the front cottage								
	Path		going up to the house		Woody place										
					Valley										
	Garden		behind the building		Roof		small timber; covering the entrance		Pine forest		on the right side				
									Timber		covering over the door				
PROFESSIONAL Eastern	House		two small; on the left side		House		two		House		two				
	Entrance		towards the right side		Entrance		towards the brook								
	Window	with yellow light	on the gable wall		Window	with yellow light									
	Mountain				Mountain				Valley						
	Misty dusk or morning				Misty dusk				Misty dusk						
	Bridge		curved; facing to the entrance		Bridge		facing to the entrance		Bridge		curved				
	Brook				Brook				River		in front of the house				
	Cascade				Cascade				Cascade						
	Steps		on the left of the cascade leading to the entrance		Steps		connecting bridge and the entrance		Steps		stone; connecting bridge and house				
	Ground lamp		along the left of the steps		Ground lamp		on both sides of the steps		Ground lamp		along the steps				
	Lamp post		heart-shape; at the left bottom of steps		Lamp post		heart-shape; at the left bottom of steps		Lamp post		on river bank				
	Woods		pine		Woods		pine		Woods		pine				
	Sun or moon														
NON-PROFESSIONAL Western	Country cottage		T shape; on the left side		House		vertical T shape; above the river		House		vertical T shape; close the river				
	Door	with latch; little window above	wooden; on the right top of the T												
	Window	with warm light	on the bottom of the T		Window		two		Window		a lot of				
	Chimney		three; smoking												
	Rooves		triangular		Roof				Roof						
	Wall		reddish old brick and stone		Wall		stone								
	Misty morning	with sun light			Misty morning	sunny	blue sky		Misty morning	sunny	blue day				
	Bridge	with lights	curved; wooden		Bridge				Bridge		stone				
	Steps	with rail	stone; leading to the door		Steps		stone								
	Ground lamp		along the steps												
	Sign post		heart-shape; at the bottom of steps												
	Woods				Woods				Trees						
	River				River				River						
	Flowers														
	Someone		cooking in the window		Someone		cooking in the window		Someone		cooking in the window				
NON-PROFESSIONAL Eastern	One building		on the left		Front building		on the left		Front building		on the left				
	Rooves		two mushroom-shape; on the left		Back building		on the left		Back building		on the left				
	Chimneys		three; on the left		Rooves		two mushroom-shape; on the left		Rooves		two mushroom-shape; on the left				
	Window	with heart-shape lattices	under the front roof; on the left; brown		Chimneys		two; each with roof; on the left		Chimneys		on the front roof; on the left; cross-shape				
	Door		under the back roof; on the left; brown		Window	with star-shape lattices	on the front house; on the left; cross-shape		Window		on the back house; on the left;				
	Path		stone; on the left; leading to the door		Door		on the back house; on the left;		Door		on the left; leading to the door				
	Bridge		on the right		Path		on the left; leading to the door		Path		on the right				
	Cascade		under bridge; on the right		Bridge		on the right		Bridge		on the right				
	Mountain				Cascade		on the right; under bridge		Cascade		on the right				
	Dusk		orange colour		Hillside				Hillside						
					Dusk		orange colour		Dusk		orange colour				
									Brook						
CHILDREN Western	One cottage		on the top left		One cottage		big; brown; on the left side		One cottage		brown; on the right side				
	Roof		blue; on the cottage		Rooves		blue; triangular		Rooves		blue; triangular				
	Love heart		light blue; in the middle of the roof		Love heart		light blue; on the roof of the big cottage		Love heart		light blue; on the roof of the cottage				
	Window		golden; on the cottage												
	Wall		of the cottage; brown												
	Another cottage		attached the first cottage		Small cottage		attached to the first cottage		Small block		attached to the cottage				
	Door		on another cottage		Door		oval wooden; on the small cottage		Door	with yellow handle	on the small block				
	Sky	with big clouds	blue colour above red colour		Sky		blue colour above red colour		Sky		blue colour above red colour				
	Bridge		curved		Bridge				Bridge						
	Stairs		going down from the door		Steps		from the door to the bridge		Steps		going down to the bridge				
	Flowers				Flowers				Flowers						
	Stream				Stream				Stream						
	Forest				Woods				Forest						
	Birds		black; hovering		Birds		black; hovering		Birds		black; hovering				
	Rock	with orange thing	on water		Rock	with orange dot	around stream		Stones	with orange dot	on the side of the stream				
					Hill										
CHILDREN Eastern	One building		on the top of the stair		One building		on the top of the steps		One house		next to the fountain				
	Window		yellowish church;		Window		yellowish church;		Window		church;				
	Wall		on the building; of the building; brown brick; cube body		Chimneys		on the building		Chimney		on the house				
	Another building		behind the first one		Another building		next the first one		Another house						
	Entrance		on the back one		Door		on the second one		Door		on the second one				
	Wall		of the back one; brown brick; rectangular body		Wall		of the second one; brick; rectangular body								
	Rooves		grey triangular; on both		Chimneys		two; on the second one		Chimneys		two; on the second one				
	Chimneys		three; on rooves		Rooves		grey triangular; on both		Rooves		pointed; on both				
	Woods		boreal trees		Trees				Trees						
	Stairs		on left stop of the stream		Stairs		going up from the stream								
	Waterfall		on right side		Waterfall		on right side		Stream						
	Stream		on right side		Stream		on right side								
	Ground lamp		along the stair		Ground lamp		along the stair								
									Fountain						

Figure: 6-9, Note: In the Tri-colour forms, red represents the Subjects, yellow represents the Complements, blue represents the Attributes, orange represents the New Subjects, purple represents the New Complements, green represents the New Attributes.
Every grid with the original colour (red, yellow, blue, orange, purple and green) in the Tri-colour Form is valued as "1" in the following Column Charts, and their lighter tones are valued as "0.5" but the lightest tones as "0.25".

STATISTIC PERCENTAGE ABOUT THE PROFESSIONAL GROUP										
		Subjects			Complements			Attributes		
		PA	PB	PC	PA	PB	PC	PA	PB	PC
OSA Signal Tower	ROIK	100%	82.61 %	56.52 %	100%	63.33 %	30%	100%	73.53 %	14.7%
	RNII	0%	0%	8.7%	0%	13.33 %	13.33 %	0%	5.88%	41.18 %
	RILT	0%	17.39 %	34.78 %	0%	23.33 %	56.66 %	0%	20.59 %	44.12 %
Peak Lab	ROIK	100%	80%	80%	0%	0%	0%	100%	46.15 %	38.46 %
	RNII	0%	0%	13.33 %	0%	0%	0%	0%	15.38 %	30.77 %
	RILT	0%	20%	6.67%	0%	0%	0%	0%	38.46 %	30.77 %
Adorno's Hut	ROIK	87.5%	87.5%	50%	100%	100%	100%	75%	75%	25%
	RNII	12.5%	0%	25%	0%	0%	0%	25%	12.5%	50%
	RILT	0%	12.5%	25%	0%	0%	0%	0%	12.5%	25%
Sweet Heart Cottage	ROIK	96.67 %	83.33 %	66.67 %	100%	66.67 %	0%	95.45 %	47.73 %	34.09 %
	RNII	3.33%	10%	6.67%	0%	0%	0%	4.55%	18.18 %	36.36 %
	RILT	0%	6.67%	26.67 %	0%	33.33 %	100%	0%	34.09 %	29.55 %
On Average	ROIK	96.04 %	83.36 %	63.3%	75%	57.5%	32.5%	92.61 %	60.6%	28.06 %
	RNII	3.96%	2.5%	13.43 %	0%	3.33%	3.33%	7.39%	12.99 %	39.58 %
	RILT	0%	14.14 %	23.28 %	0%	14.17 %	39.17 %	0%	26.41 %	32.36 %

Note: ROIK: Ratio of the Original Information Keeping;

RNII: Ratio of the New Information Increasing;

RILT: Ratio of the Information Losing in Total;

PA: Participant A; **PB:** Participant B; **PC:** Participant C

Table: 6-3

STATISTIC PERCENTAGE ABOUT THE NON-PROFESSIONAL GROUP										
		Subjects			Complements			Attributes		
		PA	PB	PC	PA	PB	PC	PA	PB	PC
OSA Signal Tower	ROIK	100%	100%	94.74 %	100%	71.43 %	71.43 %	100%	76.92 %	34.62 %
	RNII	0%	0%	0%	0%	28.57 %	28.57 %	0%	7.69%	30.77 %
	RILT	0%	0%	5.26%	0%	0%	0%	0%	15.38 %	34.62 %
Peak Lab	ROIK	94.44 %	72.22 %	61.11 %	100%	50%	50%	93.33 %	50%	33.33 %
	RNII	5.56%	11.11 %	27.78 %	0%	0%	50%	6.67%	20%	46.67 %
	RILT	0%	16.67 %	11.11 %	0%	50%	0%	0%	30%	20%
Adorno's Hut	ROIK	100%	69.23 %	61.54 %	100%	50%	12.5%	81.82 %	40.91 %	27.27 %
	RNII	0%	15.38 %	23.08 %	0%	0%	0%	18.18 %	45.45 %	54.55 %
	RILT	0%	15.38 %	15.38 %	0%	50%	87.5%	0%	13.64 %	18.18 %
Sweet Heart Cottage	ROIK	96%	80%	72%	100%	16.67 %	16.67 %	95%	40%	32.5%
	RNII	4%	4%	8%	0%	16.67 %	0%	5%	30%	35%
	RILT	0%	16%	20%	0%	66.67 %	83.33 %	0%	30%	32.5%
On Average	ROIK	97.61 %	80.36 %	72.35 %	100%	47.03 %	37.65 %	92.54 %	51.96 %	31.93 %
	RNII	2.39%	7.62%	14.72 %	0%	11.31 %	19.64 %	7.46%	25.79 %	41.75 %
	RILT	0%	12.01 %	12.94 %	0%	41.67 %	42.71 %	0%	22.26 %	26.33 %

Note: ROIK: Ratio of the Original Information Keeping;

RNII: Ratio of the New Information Increasing;

RILT: Ratio of the Information Losing in Total;

PA: Participant A; **PB:** Participant B; **PC:** Participant C

Table: 6-4

STATISTIC PERCENTAGE ABOUT THE CHILDREN GROUP										
		Subjects			Complements			Attributes		
		PA	PB	PC	PA	PB	PC	PA	PB	PC
OSA Signal Tower	ROIK	100%	94.44 %	88.89 %	100%	50%	33.33 %	100%	88.46 %	46.15 %
	RNII	0%	5.56%	16.67 %	0%	33.33 %	66.67 %	0%	30.77 %	61.54 %
	RILT	0%	0%	0%	0%	16.67 %	0%	0%	0%	0%
Peak Lab	ROIK	100%	78.57 %	64.29 %	0%	0%	0%	100%	33.33 %	25%
	RNII	0%	21.43 %	28.57 %	0%	100%	100%	0%	66.67 %	58.33 %
	RILT	0%	0%	7.14%	0%	0%	0%	0%	0%	16.67 %
Adorno's Hut	ROIK	100%	64.71 %	52.94 %	100%	0%	0%	100%	46.88 %	25%
	RNII	0%	11.76 %	23.53 %	0%	0%	0%	0%	18.75 %	25%
	RILT	0%	23.53 %	23.53 %	0%	100%	100%	0%	34.38 %	50%
Sweet Heart Cottage	ROIK	100%	92.86 %	78.57 %	100%	50%	50%	100%	60%	32%
	RNII	0%	3.57%	3.57%	0%	0%	50%	0%	20%	24%
	RILT	0%	3.57%	17.86 %	0%	50%	0%	0%	20%	44%
On Average	ROIK	100%	82.65 %	71.17 %	75%	25%	20.83 %	100%	57.17 %	32.04 %
	RNII	0%	10.58 %	18.09 %	0%	33.33 %	54.17 %	0%	34.05 %	42.22 %
	RILT	0%	6.78%	12.13 %	0%	41.67 %	25%	0%	13.6%	27.67 %

Note: ROIK: Ratio of the Original Information Keeping;

RNII: Ratio of the New Information Increasing;

RILT: Ratio of the Information Losing in Total;

PA: Participant A; **PB:** Participant B; **PC:** Participant C

Table: 6-5

TOTAL STATISTICS										
		Subjects			Complements			Attributes		
		PA	PB	PC	PA	PB	PC	PA	PB	PC
OSA Signal Tower	ROIK	100%	91.67 %	78.33 %	100%	64.29 %	47.14 %	100%	79.07 %	30.23 %
	RNII	0%	1.67%	8.33%	0%	22.86 %	28.57 %	0%	13.95 %	44.19 %
	RILT	0%	6.67%	13.33 %	0%	12.86 %	24.29 %	0%	6.98%	25.58 %
Peak Lab	ROIK	97.87 %	76.6%	68.09 %	100%	50%	50%	97.5%	43.75 %	32.5%
	RNII	2.13%	10.64 %	23.4%	0%	50%	100%	2.5%	32.5%	45%
	RILT	0%	12.77 %	8.51%	0%	0%	0%	0%	23.75 %	22.5%
Adorno's Hut	ROIK	97.37 %	71.05 %	55.26 %	100%	60%	45%	88.57 %	51.43 %	25.71 %
	RNII	2.63%	10.53 %	23.68 %	0%	0%	0%	11.43 %	25.71 %	40%
	RILT	0%	18.42 %	21.05 %	0%	40%	55%	0%	22.86 %	34.29 %
Sweet Heart Cottage	ROIK	97.59 %	85.54 %	72.29 %	100%	36.36 %	18.18 %	97.01 %	50%	32.84 %
	RNII	2.41%	6.02%	6.02%	0%	9.09%	9.09%	2.99%	22.39 %	31.34 %
	RILT	0%	8.43%	21.69 %	0%	54.55 %	72.73 %	0%	27.61 %	35.82 %
On Average	ROIK	98.21 %	81.22 %	68.49 %	100%	52.66 %	40.08 %	95.77 %	56.06 %	30.32 %
	RNII	1.79%	7.22%	15.36 %	0%	20.49 %	34.42 %	4.23%	23.64 %	40.13 %
	RILT	0%	11.57 %	16.15 %	0%	26.85 %	38.01 %	0%	20.3%	29.55 %

Note: ROIK: Ratio of the Original Information Keeping;

RNII: Ratio of the New Information Increasing;

RILT: Ratio of the Information Losing in Total;

PA: Participant A; **PB:** Participant B; **PC:** Participant C

Table: 6-6

6.3.1.3.2 Data Analysis

The huge amount of information hidden in the charts and tables can be gradually extracted out from general to detail. In total, four noticeable aspects can be unfolded step by step.

Analysis Part One

First, from the "On Average" part of the "Total Statistics Table", the overall ratio of the information change in the built environment langage operation is clear at a glance.

- In Subject, the ratio of the original information keeping (ROIK) slowly decreases from 98.21% to 81.22% to 68.49%, which means that only one-third of the information is lost in the process; the ratio of the new information increasing (RNII) also indistinctively goes up only from 1.79% to 7.22% to 15.36; and the ratio of the information losing in total (RILT) experiences almost the same tendency with the RNII with a small quantity increase of 16.15%.
- However, in Complement, the decrease on ROIK reaches about 60% during a change from 100% to 52.66% to 40.08%; on the contrary, the increase of RNII is up to 34.42%, and 38.01% of total amount of information has been lost showing on the RILT.
- Further, the Attribute is also absolutely another different story. Very dramatically, compared with the Subject's only one-third decrease in ROIK,

the Attribute's ROIK undergoes a rushing down tendency of two-third (from 95.77% to 56.06% to 30.32%); and corresponding to this, its RNII also rockets from 4.23% to 40.13% through only two participants' communications; what's more, the RILT increases by 29.55% as well.

Comparing the data of the three groups, it is very conspicuous that, on the one hand, in the Subjects scope information can be kept very well but in the Complements and especially in the Attributes scopes information can be seriously changed and lost; on the other hand, the change and loss to the original information are inevitable phenomena in the built environment significant operation. These two results can lead to an important principle of built environment linguistics. It is the existence of the Explicit Dominance and the Implicit Dominance.

Clearly from the data, as the most crucial part in normal description, Subject still keeps on a high level of fidelity. This undoubtedly guarantees the transfer of the information of "what are they". Additionally, even as the very changeable part in normal description, the Complements and Attributes still can keep about 40% and 30% fidelity during two transfers. They also contribute very much for keeping the information of "what are they with" and "how are they". Reflecting on the drawings, the similarities on the pictures can also prove this phenomenon. However, as the graphic data cannot be valued to a numerical system, they can only be subjectively sensed. So, putting the analysis above together, it is clear that the same understanding

actually exists among the communication of built environment linguistics. It is the explicit dominance.

On the contrary, if noticing another half of the data, the creation of new information also cannot be ignored. Although the Subject scope only contains 15.36% novel creation, the Complements have 34.42% and the Attributes hold 40.13%. Positively, these three data sets are still the minority in the total information amount compared with the original information keeping. However they represent the free read and personal imagination, the deconstruction idea, and the existence of the implicit dominance.

Hereby, mixing the two parts of data together, this test manifests the shortcomings of both the extreme metaphysics and deconstruction, but proves the rationality of dividing the whole built environment langage into explicit dominance and implicit dominance. This principle has been testified from the simulation test.

Analysis Part Two

Second, from the remaining parts of the "Total Statistics Table", the data of the four chosen built environment photographs are worth paying attention to as well. By carefully comparing them, another vital principle of built environment linguistics – the synchronic axis and diachronic axis can be detected.

In fact, the synchronic axis and diachronic axis cannot be directly studied from this kind of synchronic test because all the communications only happen in a short moment rather than during a long historical period. But since the chosen photographs reflect very apparent characters of times, such as conventional, classical, modernism, postmodernism and high-tech, both the "information keeping" and "information losing" embarked from them inevitably merge the influence of times inside. Then the synchronic axis and diachronic axis could be testified from the flank side.

This phenomenon can be studied from the following analysis: In the most determined Subject scope, the final ROIK of both the OSA Signal Tower and the Sweet Heart Cottage are all kept in the high level of 72% – 78%, (78.33% and 72.29% respectively), but the Peak Lab and the Adorno's Hut only reach 68.09% and 55.26% respectively. Correspondingly, the RNII of the OSA Signal Tower and the Sweet Heart Cottage only have 8.33% and 6.02%, but the Peak Lab and the Adorno's Hut all tend towards more than 23%.

Apparently, the former two buildings represent the modernism-tradition mixture and pure conventional style, in which all the langue has undergone the proof of time and thus been deposited in people's deep minds for a long time, so the fidelity of information is clearly better. On the contrary, the latter two represent the extreme high-tech and postmodernism, which are less-familiar to people or easily create confusions in their minds, so more new imaginations emerge from them and more

original information is lost.

The same thing can be seen from the drawing as well. Indeed, almost all the participants can draw a house standing on pillars and two small cottages very well. They all keep a high similarity with the original photographs. However, the 'cantilever capsule lab' and the 'half-metal/half-wood structure' really arouse great confusion and induce various changes except for a few professional participants.

Another interesting point is that this phenomenon just mirrors Taine's comparison study about fashion and geological stratums (4.3). It is true that these numerical tendencies do not reflect the meaning-change over time, but they really proved how stable or how weak the different building styles were impressed in people's mind.

In fact this tendency can only be seen from the Subject scope rather than the Complements and Attributes. However, according to the "On Average" data, it is evident that the Subjects only hold a very narrow range of freedom of change and they determine the contents of the drawing; on the contrary the Complements and Attributes not only hold the large possibility of change but also merely determine the features. So, combing these reasons together, it is reasonable to say that the Subjects can show the truth. Moreover, the effect of the synchronic axis and diachronic axis can be clearly detected from inside.

Analysis Part Three

Third, the difference between the professional, non-professional and children groups must be studied from both the statistic tables and information flow charts.

In the "On Average" parts of three statistic tables, the professionals' data doesn't show any advantages of keeping the information fidelity compared with the non-professionals and children. In fact, according to the data, the architects and planners lose even more original information than general public and children. Then, they only earn a very short leading position on the new information creation compared with others. For example:

- Both on the Subjects and Attributes, the professional's ROIK rush down to 63.3% and 28.06%, which is even lower than the total average level – 68.49% and 30.32%. However, on these two items, the non-professional achieve 72.35% and 31.93%, the children hold 71.17% and 32.04%. All are higher than the professional.
- About the RNII, although the professional keep a relatively low level of 13.43% for Subjects and 39.58% for Attributes compared with the non-professional's 14.72% & 41.75% and children's 18.09% & 42.22%, the difference here is negligible.

This consequence seems to be a definite up-side-down to our so-called reasonable result – the trained architects must be able to describe the building very well and keep

the original information unchangeable on a high level. However, according to the data, they are not. So here, facing up to this dilemma, more material should be included in the analysis for a comprehensive judgement. The graphic drawings and even the special words from narration should be carefully considered.

Based on this idea, if studying the drawings and words, we can see the performance of these architects and planners is more professional than that of the others. The difference is huge.

- Firstly, regarding the drawings, the western professional participants are the only group that can recreate the OSA Signal Tower on a very high loyalty level. However, more marvellously, the eastern professional people are the only group who can faithfully reflect the half-wood/half-metal character of the Adorno's Hut and the cantilever structure of the Peak Lab. What is more, regarding the Sweet Heart Cottage, both the eastern and western professionals organized very complex circumstance to be similar to the original photographs.
- Secondly, regarding the words, the professionals also reveal their specialized quality. They use much more specialized terms in the narration, such as the "cantilever", "Tudor style", "H shape steel", "ground lamp" and so on. All these are different from other participants.

Confronting these two totally contrary conditions, a pertinent explanation is essential. It must be admitted that these results about professional people are unusual, but they probably can be interpreted by the professional people's special characteristics.

- The drawings emerge from the passively received information. The high level of fidelity on them should be attributed to the professional training of these specialists. Firstly, the sketch drawings are definitely one kind of basic Non-Spoken & Written parole for trained architects. Just like what they often do in practice, by only hearing the Spoken & written information, they can quickly and accurately figure out a building sketch on paper. On the technical aspect, they will unquestionably perform better than others. Secondly, during the long time of professional training, the architects have accumulated a large amount of built environment prototypes in their minds, such as what is the Tudor style, what is the curved bridge, what is the cantilever structure, etc., so with only a few hints on single words they can accurately draw the buildings on paper.
- However, the professional skill is a double-edge sword. Description is an active performance to convey the information. At this stage, the architects' special capabilities and personalities contribute to the low loyalty in narration statistics as well. Firstly, with their own clear prototype collections in minds, they confidently usually depict building features merely by a few professional words rather than a more detailed description. Depending on their huge

professional knowledge collection, of course the basic form of the building structures can be replicated just by this kind of simple description, but meanwhile more details also frequently are lost. Secondly, the professionals' prevalently strong personal characteristics also cannot be ignored. According to my observation, most professionals begin drawing after only receiving little information rather than carefully hearing out all the description from the former participant. So, repeatedly, except accurately showing the built environment elements by his or her professional drawing skill and big architectural prototype accumulation, they freely recreate the picture by their imagination as well. Then, these recreations inevitably will affect his or her following descriptions. Undoubtedly, the strong self-confidence leads to not only the loss of the information but also the creation of the new contents.

This part of the analysis shows the different features between the professionals and general public. The former perform very well in drawing rather than narration statistics. But the situation of the latter totally goes to the opposite direction. Between the difference, what is revealed is nothing but the dynamics and vividness of built environment linguistics. It indeed is living langage among people. It belongs to everyone rather than only the architect.

This part of the analysis is also critical. By the explanation above, the bizarre phenomenon about the professional could be interpreted, but another possible reason

still cannot be ignored. This is that the number of test might be low, and the data collection might not be enough. Actually, it is true that the more tests you do, the more information you can collect and the more accurate the result can reflect the real condition. So, under the limited condition of the PhD study period, the occurrence of this situation is clearly a current shortage. The analysis above is certainly valuable, but it is not able to counteract the very necessary further work requiring more tests.

Analysis Part Four

The fourth part of analysis focuses on the information flow charts only. Because of the arrow-connections between the information-items and their corresponding contents in drawings, the total of how many information-items have been shown in the pictures and how many drawing items have been converted to narration can be counted. By this study, the Subjects and their related Complements & Attributes will be considered as the integrated units, and only the number of these units will be analyzed. Therefore, not only the difference among the Subjects, Complements and Attributes but also the distinction between the explicit items and implicit items can be avoided. Then, what will be reflected from the analysis is the relationship between the spoken & written langage and the non-spoken & written drawings.

There are three groups of different information-items on the information flow charts:

- One is those information-items shown in the drawing as well as coming from the drawings or photographs; (Group A)

- The second group is those information-items that are not shown in the following drawings; (Group B)
- The last group is those information-items that do not come from the former drawings or photographs. (Group C)

Clearly, the first group reflects a very close relationship between the narration and drawing as well as implying the big role that the spoken & written langage plays in the significant process. But the latter two groups represent the failure of relating the spoken & written langage with the built environment image. Hereinto, those that are not shown in the following drawings only happen in the conversion from narration to drawing, thus between two different participants; but those that do not come from the former drawings or photographs only happen in the conversion from drawing or photograph to narration, thus about the individual participant.

The statistics data is stirring. As shown in the following table (Table: 6-7), the information-items belonging to Group A undoubtedly hold the position of the absolute majority. The percentage data reach up to the range of 80% – 90% in all the four photographs. On average they occupy 85.21% within the total 622 information-items. Compared with this high point, the information-items of Group B only occupy almost 10% – 12% in four photographs, and on average 10.77%. But the information-items of Group C just touch the lowest percentage of 4.02% of the total amount.

INFORMATION-ITEMS STATISTICS				
	Total Number of the Information-items	Shown in Drawings & Come from Drawings	Those that aren't Shown in the Drawings	Those that don't Come from the Drawings
OSA Signal Tower	168	149 88.69%	17 10.12%	2 1.19%
Peak Lab	131	110 83.97%	15 11.45%	6 4.58%
Adorno's Hut	99	81 81.82%	12 12.12%	6 6.06%
Sweet Heart Cottage	224	190 84.82%	23 10.27%	11 4.91%
In Total	622	530 85.21%	67 10.77%	25 4.02%

Table: 6-7

Clearly from the data, by the spoken & written langage, most of the image information can be dynamically transferred between people. The failure of conversion between the spoken & written langage and the built environment image is rare. This result also can be considered together with the former analysis. Certainly, within a significant operation process, howsoever the coexistence of the explicit dominance and implicit dominance, the spoken & written langage never stops its role to convey the primal information, meanwhile inspiring imagination; howsoever the information loss during communication between people, the single person still can apply the

spoken & written langage to convert his or her built environment impressions or imaginations into words as much as possible. At last, although we can see the original information has been changed or lost in the significant process more or less, it is true that the spoken & written langage endows the solid built environment langue with the real vivid life.

So, in the last part of analysis, the most crucial principle of built environment linguistics can be testified. It is that the special relationship between the spoken & written langage and the built environment langage is special and stable indeed.

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Through the four parts of analysis about the significant operation above, a series of important principles of built environment linguistics have been clarified. They are:

- the Explicit Dominance and Implicit Dominance,
- the Synchronic axis and Diachronic axis,
- the ubiquity of built environment linguistics, and
- the indispensable role of the spoken & written langage.

In fact allying with the earlier analysis about the creating parole and perceiving parole, all the crucial principles mentioned in this thesis have been proved by this main simulation test. Based on this achievement, the analysis of the auxiliary test will
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provide an essential supplement.

6.3.2 The Analysis of the Auxiliary Test

According to the performance of all the participants, the three best-performing participants of the auxiliary test are one eastern professional, one western non-professional and one western child. Based on their descriptions, the analysis can be launched.

This study about the auxiliary test is much simpler than the main simulation test. Since its aim is to answer the questions – whether the photographs can reflect the real situation of the practice of the built environment langage and how much on level the photographs can reflect reality, so extracting out the information that merely can come from the 3-D built environment certainly is the keystone. For this goal, firstly all the three descriptions should be also abstracted to information-items and latticed in the same standard three-column form. Then, within the grid structure of the Subject-Complement-Attribute, the special information elements perceived merely from 3-D can be picked out. In the following text, they will be succinctly called “the 3-D information-items”, “the 3-D Subject”, “the 3-D Complement” and “the 3-D Attribute”. Additionally, they will be shown by covering a layer of transparent orange colour on the three-column form.

So, seeing from the following three forms (Figure: 6-10), it is clear that the 3-D

information-items exist in both in the Subjects column and the Attributes Column. To the professional group, the percentage of the 3-D Subjects is 18.75% and the 3-D Attribute 28.13%; to the non-professional group, the 3-D Subjects is 21.43% and the 3-D Attribute 30.77%; and to the children group, the 3-D Subjects is 45% and the 3-D Attribute 44.12%. Conspicuously, people can get more information by visiting the real built environment than by only looking at the photograph. Based on this statistic, all these 3-D information-items can be summarized into three aspects:

- The first aspect is an all-around view. This means people can not only look around the built environment from every direction but also observe the surrounding circumstances from the building. By this way, the participants will get a panorama impression, which is absolutely richer than the photograph with only one fixing view direction. The “cliff on the back of the building”, the “inside plain floor”, the “city and town in distance”, the “road and grass plain”, etc., all belong to this aspect.
- The second aspect is actual dimension. This means the participants can get the true size and the true orientation of the building, such as the “3.5m x 3.5m square pavilion”, the “8 foot x 8 foot building”, the “door facing north”, the “90cm base”, etc. Noticeably, this aspect usually can be perfectly mastered by adult groups.
- The third aspect is about the criticism. The visitors can declare their own comments to the built environment. It includes advantages and shortcomings. One typical example comes from the description of a member of the

non-professional group who emphasized that the orientation of the building is totally wrong and complained that there should be furniture inside.

Clearly, to a small and simple built environment like this pavilion, although 3-D information-items can give observers a more precise and detailed impression, most of the important features of a built environment also can be learned from 2-D printed pictures. However, it is also predictable that, for large and complicated buildings, the function of a photograph should be much more limited. Actually, the more complex and bigger the built environment is, the more difficult people grasp it only by pictures, and the less information people can obtain only from photographs. However, within this test, since all the five typical built environments are small, simple and easy to understand, photographs are adaptable after all.

Furthermore, actually the most primitive aim of this simulation test is to mimic the practical process of built environment linguistics and to testify its vital principles. According to this point, the procedure of the information transfer is much more important than the richness of the details in the information. Therefore, on this level, the photograph is undoubtedly working well.

So, summing up the analysis before, an equitable estimation can be given to the simulation test.

- On the one hand, it must be admitted that, regarding the richness of the details

and the preciseness of the information, visiting the real built environment is better than looking at photographs. This aspect is a flaw of the laboratory test.

- However, on the other hand, based on the particular type of the chosen built environments and the main role of the test, the photographs are still a good choice for a convenient laboratory operation.

By this assessment, I would like to argue that, for this simulation test, most of the visual information can be observed and interpreted from photographs, and photographs can successfully reflect the real situation of the practice of built environment langage.

Building		small squaure monumnet
Base		brick
Board		white wodden; on the base
Wall		on the back; facing the cliff; no windows
Two Sides	with rectangular windows	
Another Side	with rectangular windows, door	opposite to the wall
Ceiling	with little wood tiles	shape of mushroom
Floor		stone tiles
Hill		Rocky
Cliff		on the back of building; only can see from another side
Plants		different sorts
Paths		interlocking
Pool		full of water
Grassland		
Cut trees		
Fence		wide; on the back; protecting people from the cliff
Grass Plain		large; looking out from the building; on the left
Road		looking out from the building
City Perspective		in distance; looking out from the building
Forest	with ivy and trees	on the other side of building

Pavilion		square; 3.5m x 3.5m; on an old cliff
Base		stone; 90cm
Wooden Structure		on the base; white
One Side		solid; facing the cliff; wooden
Left, Right Sides	with six wooden window frames	small upper part; lower part is twice bigger
Another Side	with central door, window frames	opposite to the solid side; four window frames
Double Roof	with wood tiles	upward curved lower part; downward curved upper part
Inside		empty
Eave		classical; wooden structure details
Hill		Rocky
Cliff		on one side; steep
Plants		around
Paths		stone; serpentine; steep
Rock Courses		natural; on other three sides
Scenery		artificial
Landscape View		beautiful; from the pavilion

Building		square; 8 foot x 8 foot
Base		rough sand stone bricks; twice of normal brick; waist high
Wood		on the base; white
Back Face		solid; facing south; vertical
East, West Sides	with six grid window frames	large rectangular bottom part; small rectangular top part
Front Side	with central door, window frames	facing north; just door hole
Roof		curved; like bee hive or two pots, one above another
Floor		plain concrete
Decoration		curved; where the panel meet roof; like supporting part
Mount		Rocky
Rock		around
Plants		around
Rock Way		
Wrong Design		no sunshine inside; should put fornitures inside

Figure: 6-10, Auxiliary Test

Notes:

Red Column represents the Subjects;

Yellow Column represents the Complements;

Blue Column represents the Attributes;

Orange Masks represent the 3-D information-items.

6.4 Summary

Finally, with a large amount of work, the whole simulation test part has been completed. From the careful design to the meticulous analysis on data, every element relates to the very initial motivation, which is to demonstrate the whole theoretical framework of built environment in a practical way.

Based on the analysis thereinbefore, not only have the three basic principles inherited from the sign langage – the creating parole & perceiving parole, the explicit dominance & implicit dominance and the indispensable role of the spoken & written langage – been verified one by one, but also the very particular development about time – the synchronic axis & diachronic axis – was elucidated from a neat flank side. In addition, the ubiquity of built environment linguistics was also not left behind, which from both creating and perceiving aspects proves the universality of built environment linguistics. Thus here, it can be claimed that the whole built environment linguistics framework has been strongly supported by the pragmatic simulation test. However, it is still not the end of the study because, by endless data collection progress, the scope of social science can rather asymptotically approach the fact than actually get it.

Built environment linguistics study belongs to social science, whose achievement is mainly built on the foundation of qualitative study. This implied a piece of truth

emphasized many times before – regarding data collection, the more the better. For this thesis, it is believable that the six groups of tests have roundly proved the theory, but more, provided a tried study platform for the future rather than as an end. So, as same as the critique elucidated at the end of the Analysis Part Three (6.3.1.3.2), built environment linguistics study will be carried on in the future and the test will be continued as well, though the whole thesis will soon reach its final conclusion part.

PART FOUR

CONCLUSION AND FURTHER WORK

7 The Conclusion

The framework of built environment linguistics has been finally established after the step-by-step approaches taken in this study. Following the positive results gained in the previous three Parts, here a proper conclusion will be brought forward. Hereinto, the conclusion can be summarized into two aspects – the theoretical value and the practical value.

7.1 The Theoretical Value

The theoretical value embeds in the whole theoretical system of built environment linguistics.

The original aim of this research – to explore and extract a common essence of built environment language (langage) – is established through a comprehensive review, which makes up of the first part of the thesis and includes two branches.

Primarily, a historical review on structural linguistics – semiology ultimately clarified the theoretical system – structuralism, structural linguistics, semiology and deconstruction. This theoretical system provided strong support to considering the built environment as a mean of communication. However within the turn of a continuous theoretical development, an extreme-to-extreme transition (seeking a perpetual coverall super-structure in Hegel's Logic → overthrowing all the regulations by deconstruction) is clear. The whole framework of built environment linguistics is just established between these two poles by Saussure's structural linguistics and Barthes' semiology.

Following the structuralism thoughts, seven major branches of built environment language (langage) studies have been reviewed –

- the classical language of architecture,

- the architectural language of modernism and postmodernism,
- the pattern language,
- the urban language,
- the landscape language,
- the form grammar,
- and other architectural language studies,

these former built environmental language (langage) studies all embodied a close relationship with structural linguistics – semiology system. Additionally, they can be divided into two main groups. One is to enumerate the vital elements of successful architecture or cities and to compile built environment dictionaries; another is to analyze the deeper meaning of the built environment and to compose built environment grammar books. The former group reflected the pragmatic attributes of undeveloped structuralism viewpoint without clearly referring to the linguistics and semiology, but contrarily the latter group achieved important progress by applying linguistic and semiological concepts rather than the detailed practical structure of languages (langages). The complementary points between these two branches indicate an opportunity of establishing universal built environment linguistics by the knowledge of structural linguistics – semiology and the future development to the combination of dictionary – grammar book in the scope of built environment.

So with both the characters of built environment and structural linguistics – semiology, built environment linguistics is typically interdisciplinary. Within the built

environment linguistics framework, these two academic scopes actually are progressed by the theoretical support they receive from each other. This feature decides the theoretical value of the thesis in both scopes of the built environment and the structuralism – structural linguistics – semiology, respectively. However they cannot be considered separately at all.

To the academic scope of the built environment, the contributions of built environment linguistics can be elucidated from two aspects:

- Firstly, the diverse built environment language (langage) studies have been fused together by the theories of structural linguistics and semiology. This attribute determines that built environment linguistics is a comprehensive theory beyond the former studies' differences. On the one hand, it is a foundation that all those reviewed former theories can be explained by it. On the other hand, it also is a platform that not only those former theories can be embedded in it but also the new theoretical development can be incubated out from it.
- Secondly, the legible and universal elements of structural linguistics and semiology endow built environment linguistics with an easy-handling essence. This means that built environment linguistics is a normal part of everyone's daily life; and people use it consciously or sub-consciously everyday. This aspect unauthorizes built environment linguistics from the professional experts,

meanwhile returns it back to an exoteric place.

To the academic scope of the structuralism, structural linguistics and semiology, there are also two aspects of theoretical value that are worthy of paying attention to. Although it is not the emphasis comparing with the theoretical value in the built environment field, for compiling an integrated theory they still cannot be ignored.

- Firstly, built environment linguistics is a systematic realization of the semiology in the built environment field. Indeed, Barthes' effort pushed the literature-fitted principles of Saussure's structural linguistics into the unlimited world of signs but didn't scientifically practice his theory within one of sign systems. So through the procedure of the demonstration in this thesis, the semiological knowledge is instantiated by truth.
- Secondly, for the system of the structuralism – structural linguistics – semiology – deconstruction, this realization in built environment also is a beneficial practice to neutralize the extreme tendencies of Hegel's Logic and deconstruction. Actually, the ubiquitous applicability of built environment linguistics, which is developed from the neutral theories – the structural linguistics and semiology, clearly manifests the rationality and correctness of the rule of the golden mean.

From the above paragraphs, the theoretical value of this research is clear.

Undoubtedly they are important for abstract study. However, since the built environment is a subject closely related to practice, and furthermore built environment linguistics has been proven to be an indivisible ingredient of everyone's life, so the practical value of it should be more crucial.

7.2 The Practical Value

The practical value of built environment linguistics naturally fuses every aspect of our societies and cultures. As what has been emphasized many times in this thesis, as long as in the built environment, this very habitual business happens almost at any time in everyone's mind. If following the taxonomy through the chapters above, generally two sorts of people will practice linguistics in different ways. They are the professionals and the general public, who surely experience different practical value of linguistics.

To the professional experts, including the architects, planners, artists, technicians, surveyors and builders, etc., built environment linguistics should be no more than a part of their basic trained knowledge and one of their essential accomplishments. This value can be manifested from two aspects according to the structure of the linguistics theory per se.

- Firstly, the fundamental troika organization of linguistics – langage, langue and paroles combo – establishes a rational framework for the creating process. Probably it cannot obviously affect design and construction; however this framework provides a selectable logic for built environment practice. With the clear concept of langue and parole, the architects or planners can arrange their works in a soberer way and keep their projects under theoretical control. It

should be acknowledged that this kind of influence is normally too subconscious to intently locate. However, similar to all the very abstract theories, they indeed exist in our minds and exert their functions in our work.

- Comparing with the former one, the rules in the significant operation evidently offers more functional values in professional practice. Hereinto, the syntagmatic axis and systematic axis indicates the existence of explicit dominance and implicit dominance, which can be flexibly developed into built environment vocabularies. This pair of terms highlights the most conspicuous opening of the theory. Clearly, based on them, professionals can freely summarize their familiar built environment elements together, classify them by personal habit, and finally build up their individual built environment dictionaries. This will be the further development of the study, and more detailed interpretations will be expounded in the next chapter. What is more, the synchronic aspect and diachronic aspect designates the influence of time within built environment scope. By this pair of terms, the phenomena of the perpetual beauty and ephemeral fashion in architectural art field have been given a clear explanation. Certainly, if the professionals want to create great timeless architecture or cities, what cannot be dispensed with is the capability of forecasting the potentialities of their projects and the willpower of cultivating the potentialities. Indeed, what has been proven more than once in the architectural history is that the everlasting beauty always depends on careful study in local culture and circumstance, excelsior elaboration in design,

precise work in construction, and lastly, the talent inspiration. They are undoubtedly the keystones from where strong potentialities can be constructed.

Among the public, no matter whether the DIY builders, everyday users, earnest tasters, rigour estimators, insouciant tattlers, occasional beholders or only hasty passers, etc., this linguistics theory could be broadcast as a part of the "knowledge-popularizing education" about built environment. Although in fact they sub-consciously use the particular linguistics everyday, it is still useful to master the panorama of the meanings of their buildings and cities with more confidence if they have understood the framework of the langage and the elements of the significant process. This theory is a guideline to teach the public how to sensibly understand their built surroundings. By holding the knowledge, the public will obtain the capability to rationally analyze the creators' original ideas (if they want), to clearly develop the individual imagination with theoretical support, and never feel confused encountering those unusual and bizarre novelties.

From the above two branches, it is not difficult to realize that the practical value of built environment linguistics is more an indirect general guidance than a direct appliance for both the professionals and the public. Despite this, as a very basic theory binding with the extreme freedom of further usages, I would like to argue that built environment linguistics is well positioned. After all, behind the rough guidance, what

is returned back to us is the lightheartedness of creations and comprehensions. On this point, built environment linguistics plays the same role in built environment as that of Saussure's, Lévi-Strauss', Jakobson's, Hjelmslev's, Barthes' and all other great linguists' theories playing in our daedal spoken & written langages.

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Summing up these two sections, the value of built environment linguistics is clear. Indeed, as an academic development, it unites the previous different built environment language (langage) studies together as an integrated but legible knowledge, whilst also clarifying all the confusions between the built environment and langage. As a comprehensive theory, this linguistics is free for everyone and can be grasped by whomever. As a real practice, it is not only a part of working philosophy for the professionals but also a piece of living philosophy for the public. Probably to most of the populace, it merely exists in minds, passively and intangibly, but in the hands of designers and builders, the linguistics of the built environment will be a totally different story. To be similar to the authors who give a speech or write a book, the built environment creators also can narrate and compose by their own special linguistics. Further, to be similar to the coexistence of the good and bad works in literature as a whole, the products of the built environment also could be a success or a failure. However, to be different to litterateurs, who working in the scope of built environment actually grasp the super power to create the biggest and greatest artificial
~~~~~~~~~~

products of human being, and even to recast the surface of the earth. That is in fact a paramount responsibility loading on every built environment creator's shoulder, which is potentially much more significant than that of other writers, which cannot be neglected anymore, which is trying our best to produce the beautiful langue of the built environment for our world.

Here! The soul of built environment linguistics is contained inside.

8 The Further Work

The last but not least chapter focuses on predicting future work of this study. According to the clue hinted at Chapter 7, the framework of built environment linguistics is an open theory rather than a closed one. So following-up the established theoretic venation, there are still plenty of work waiting to be completed.

The direction of future work firstly can be detected from built environment linguistics theory per se. From the previous chapter – Conclusion, built environment linguistics theory has been clearly pitched as "a part of working philosophy for the professionals and a piece of living philosophy for the public." This means that the framework of built environment linguistics is still too abstract and recapitulative to be applied in practice. Plainly to say, through systematic analysis, the aim of this thesis, which is to explain "what is the universal essence of built environment linguistics, what is its universal mechanism of operation and can it be mastered by everyone", has been achieved already. So based on these efforts, the next step should go into the more pragmatic scope and try to answer the question about how to apply this linguistics in work and life. It is undoubtedly a necessary theoretical development.

What is more, if tracing back to the literature review in Part One, the future development also can be manifested from former studies. Within those different

branches of language (langage) studies about architecture, cities and landscape, it is evident that not only many former language (langage) studies focused on the practice, but also they all can be suitably embedded in the framework of built environment linguistics identified in this thesis. So based on this comprehensive theoretical linguistics of the built environment, it should be optimistic that a comprehensive practical linguistics can been achieved, too. It is a theoretical possibility.

Based on these two aspects, a blueprint of the further work of this research topic can be gradually figured out from the integrated framework of built environment linguistics.

The structure of linguistics in built environment contains two main parts – the radical troika structure (the langage, langue and paroles combo) and its derived consequence (the significant operation). Hereinto, in the history of linguistics study, Saussure's troika structure is a classic foundation and closely associates with every further development in linguistics by far. So this part should be unwavering within the framework. However, on the contrary, within the process of significance the diverse individual thoughts are inflating. In theory, this part uncovers the general principles hiding behind the multiform phenomenon, and meanwhile provides a platform for flexible progress. On this platform, the active connecting plugs are the Explicit Dominance and Implicit Dominance. Additionally, as what has been reviewed before, the previous built environmental "language" (langage) studies can be divided into the

dictionary compiling group, which is represented by Alexander, and the grammar exploring group, which is represented by Jencks. Tracking these two groups, the explicit dominance and the implicit dominance will logically result in two systems.

- Firstly, on the route of compiling the built environment dictionary, to be similar to Alexander's Patterns, both the explicit dominance and the implicit dominance can be respectively developed into a series of sub-level built environment elements. However for emphasizing the gene of structuralism of this linguistics, it is reasonable to arrange all of these elements in a multilevel pyramid structure. Within the pyramid, the two dominances form the top; following them, corresponding to the particular attribute of each dominance, two series of mostly primary built environment domains will be developed respectively and compose the second level together; then, below every domain a group of smaller but more detailed aspects will be enumerated out, and surely all of them will make up of the third level; certainly following them, the same thing could happen level-by-level, again and again. Following this tendency, the dictionary of the built environment will become increasingly detailed to every facet of the practice.
- Secondly, on the route of exploring the grammar phenomena of the built environment, the two dominances will experience a different story. Grammar is about the use of the whole langage. It includes the syntax, the rhetoric and their responding semantics study, etc. In these systems, there are no rules

especially pointing to the explicit dominance or the implicit dominance. So exploring the grammar of built environment linguistics is actually the study about the mixed-use of the two dominances, and the dominances should be colligated together rather than separated from each other. Based on this condition, it is foreseeable that a series of regulations or rules of using built environment linguistics can be listed. Additionally, following the rules, trying to sum up their latent meanings is also a possibility.

Going through the two tendencies mentioned above, it is evident that the former route is focusing on the built environment per se, and the later route is pointing to people's active practice to the built environment. The former is the stuff to compose the linguistics but the later is a rule to run the linguistics. Here if tracing back to the analysis about the previous built environment language (langage) studies, it is clear that this compatibility between the two tendencies actually corresponds with the second reciprocity of those two groups of previous language (langage) studies (2.4). So the two tendencies cannot be dismembered anyway. Both the dictionary and its suitable grammar are all essential in further work. (Figure: 8-1)

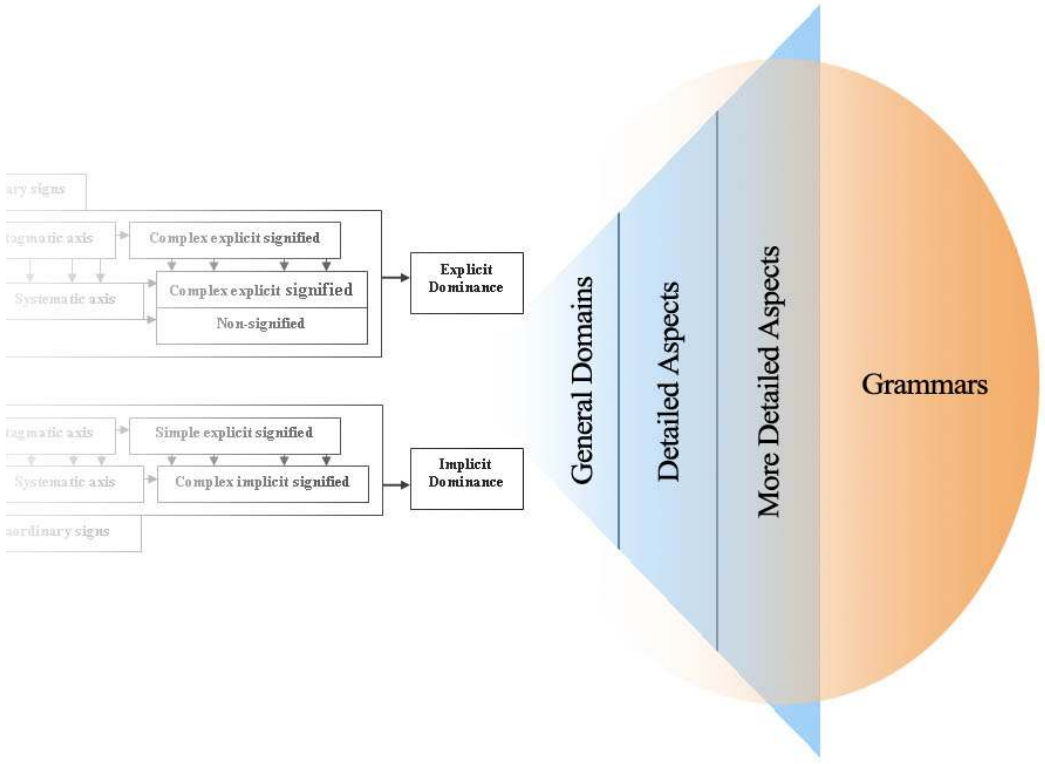

Figure: 8-1, Further Work about the Built Environment Dictionary and Grammar

This consequence has designated a major direction of the prospective development already. But behind the integrative entity of dictionary & grammar, there are also two progressing possibilities that are worth noticing. They are the commonness and the particularity of the built environment dictionary & grammar.

- The first possibility is comparatively easy to interpret. The commonness actually designates the existence of a general dictionary & grammar of the built environment that can adapt to all situations. Most of the previous studies were trying to achieve this aim, such as Alexander's pattern language, Cullen's townscape, Jencks' postmodernism language, Broadbent's deep structure and the classical Orders, etc. Indeed directly or indirectly, seeking the timeless way

of the built environment is the general aspiration of these scholars.

- Another possibility is going to the opposite side. The particularity designates the diversity of the built environment dictionaries & grammars. It could mean that the individual dictionaries & grammars are compiled by many different professional designers. It also could mean that the unique dictionaries & grammars implicating in the different cultures, districts or historical periods. For the former range, those special studies about some architects or planners with very strong personalities belong to it. Their projects all reflects out extremely individual techniques, such as Michael Graves, Mario Botta, Tadao Ando, Santiago Calatrava, etc. For the latter range, they should be classified into the local studies or historical investigations. Clearly Form Grammar studies belong to it. What is more, this whole possibility also can be positioned in a coordinate, in which the X axis indicates the different Architects, cultures and districts but the Y axis indicates the times. Actually by this way, another important principle of the significant operation of built environment linguistics – the diachronic axis and synchronic axis – can be clearly included within. These two ranges uncover the flexibility in usage and the diversity in development of the linguistics. They are the indispensable supplement of the first possibility (Figure: 8-2).

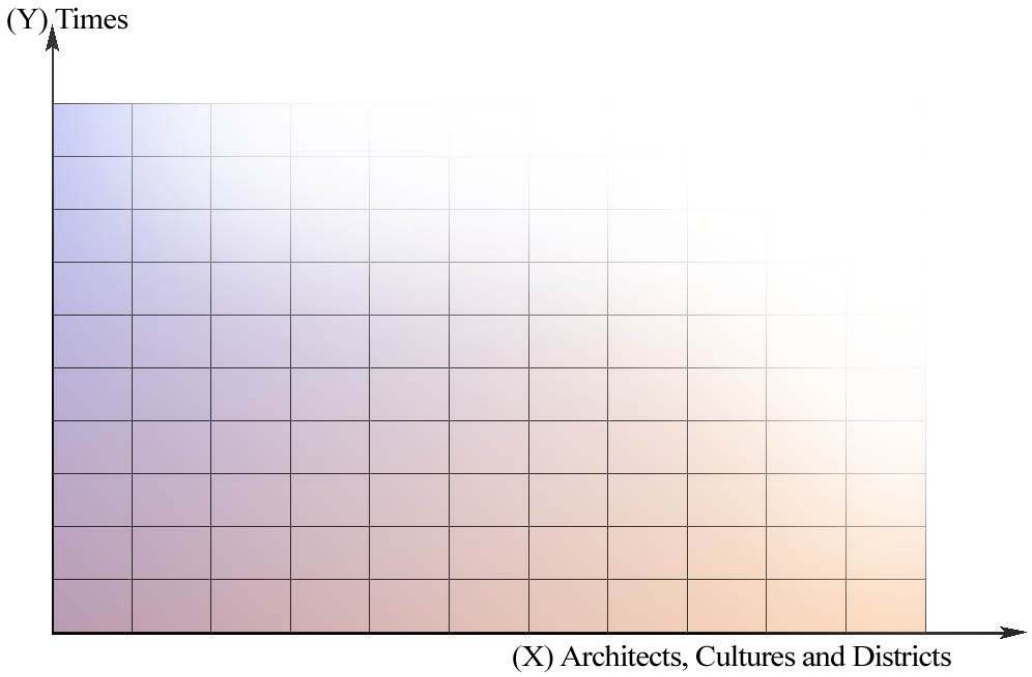

Figure: 8-2, the Grid of Further Work about the Particular Langages Studies

From the dictionary & grammar to the commonness and particularity, it is predictable that, to be similar to the complex theoretical framework of built environment linguistics completed in this thesis, the pragmatic framework of built environment linguistics practice is also a daedal and reticula system. In fact, the most important gap that leads to all research in this thesis is the abruption and potential compatibilities between those two groups of previous language (langage) studies. The first reciprocity has been realized in this thesis. So for holding this elementary aim, the most crucial goal in the further work is to achieve the second reciprocity. It is not an easy way to go and the precondition is nothing more than the devotion with all the heart. Because it is perpetually true that the “Ends Well” only comes out after the “All’s Well”.

Appendices

The Main Simulation Test

OSA Signal Tower

Group One, Eastern Non-professional

1-2-1

那一个是一个那种像平房那样的东西，不过是被架在空中，被四根柱子架在空中的一个平房．然后是从东南方向看过去的，然后看不到北面和西面，所以说就那样了．可以看得到那个房子右边的墙，从东南方向看的，然后门是在南面的墙上．四个柱子架在空中．上去… 我怎么知道，能跳的话跳上去跳下来了．然后门的旁边就是一个窗户，南面的墙就是一个… 大概像差不多正方形的一个形状．然后东面是一个长方形的，东面的墙是长方形的，然后有两个窗户．然后这门的前面有一个很小很小的平台，很小，就是门口，有一点点平台．然后三个窗户上面都有… 就是窗户都摆有像花那样的东西．房顶就像那种三角顶吧，很常规的那种三角顶．然后墙的颜色都是白的，就只有像门啊，门框或者是窗口，窗台的那个框是黑的．然后没什么特别的颜色了．屋顶… 看不到屋顶，从那个角度．然后门口那个台子上有一张折椅．从那个方向看不到房子里面所以说里面就… 总体就是从房子的外面看… 就是这样了．

1-2-2

这是一个平房，由四个柱子支起来的平房．然后应该是三角屋顶．在…就是最靠你… 最靠外面呢有一个小小的阳台．阳台上有一把椅子．然后就是有阳台的这面墙上有一个门，一扇窗．就是在你右边，另外一面墙上有两扇窗户．然后三扇窗户里面好像都放着，好像是花一样的装饰品，三扇窗户里面都有．然后整体的颜色应该都是白色，除了窗户，窗户框和门框好像都是深红色．其他的好像都是白色，我不记的屋顶了．

1-2-3

一个平房，屋顶是三角形屋顶．正对着你的那面墙上有一个门一个窗户．正对着你的墙上还有一个阳台．阳台上还有一把椅子．在这个房子东面的墙上有两扇窗户．窗户上都摆着，三扇窗户… 一共三扇窗户嘛，三扇窗户上都摆着花．然后那个房子是白色的，门和窗全是朱红色的．

Group Two, Eastern Professional

3-2-1

这个房子呢大概在一个城市里头，但是呢，它算是有点类似… 感觉上好像盖在城市的那种边陲地带的一个空地．周围有… 周围有围墙，然后会是一些比较老旧的房子这样．然后这个房子它是由四根混凝土柱撑起来，抬高的一个建筑物．所以它底下还是透空的空地，然后大概抬高一楼半左右．那抬高起来的这个房子呢，它非常的可爱．就是一个小HOUSE，然后垫起来．然后它有一个很大的特色，是它有一个小露台，铺满草皮的小露台．然后那个房子就是有个门可以通到那个小露台，然后就可以坐着，乘凉啊，看风景之类的．然后这个房子除了门通往小露台之外还有开一些窗户．这个房子属于长方形的，那小露台是盖在短向的那一边．然后所以短向那一边除了个门之外还有一个窗．然后长向有两三个窗吧．那它每一个窗台都种满了花．所以感觉上很小巧，很温馨的样子．窗台都种满了花，只要有窗户都种满了花．那这个房子它，基本上是混凝土造，但是它的结构会让你感觉很像木框造的感觉．虽然它用混凝土柱跟梁框，你从外墙上可以看的出，它的感觉很像那种…比如说很像英国的那个都铎式时期那种木梁外露的那种感觉的建筑．然后其余的地方是漆成白墙这样子．然后呢这张照片是在晴天，就是白天然后艳阳高照，然后整个背景都是

蓝天，天气很好的情况下拍摄下来的．长向上… 我忘了,两个还是三个窗户．没有和一楼的连接．没有看到任何的连接的，就是看到四根柱子撑起来．然后窗户有一扇是开着的，然后有一个人探出头来，看着你．柱子其实不会很粗哦，因为基本上这个 HOUSE 不大．很有特色是那个小露台．小露台其实蛮小的哦，大概宽度是短向房子的一半而已，然后往前突出来．那这个小露台呢铺满了草皮，就好像一块草地的那种感觉,而且是没有栏杆的，没有扶手的．然后上头就摆了两张乘凉的椅子．还有就是整个色彩感觉就是很鲜艳，就是有花有草这样子，很鲜艳，很阳光的感觉．

3-2-2

房子是在一个城市的边缘，然后是在一片空地上．周围大概有围墙之类的东西．然后还有一些老墙．这个房子是一个，看上去就像混凝土的一个房子．然后一个小 HOUSE．底下有四根混凝土柱子支撑着．然后宽呢大概是长的一半．在短边那一个地方有一个露台，就指挑出来的露台，露台上铺满了草坪，然后有张椅子，有一个门开向那个露台．然后还有一个窗户．然后在长边上也开着一些窗户．然后窗台上都有花．然后有一扇窗户在打开着，然后有一个人的头在往外张望着．然后这个天气呢非常晴朗，蓝天白云啊，艳阳高照哇！墙是漆成白色的．城市的边缘，你看上去吧，它是有点接近城市的气息，但是呢它又不是在市中心，它是在城市的边上．有点那种城乡结合部…

3-2-3

这个楼是个小建筑．它位与城乡结合部，是一个远处可以看到城市的地方．然后它自己坐落在一片草地上．底下它的长边有四根混凝土柱子支着．它的短边开了一个大阳台，就是挑了一个大阳台．阳台上面有人，还有花，后面开了个门，开了个窗户．它的长边… 就是这个建筑是个方型的，长边是短边的两倍．我刚刚说的阳台是在短边上面．四根混凝土柱子是在长边，长边的下面．然后在长边上面开了几扇窗户，其中有一个窗户还开着，里面有一个人在向外招手，一个人在里头站着，就是倚窗而立．然后天气非常好，晴朗，阳光灿烂，草地碧绿．短边有一个窗户一个门，人是从门里出来的那肯定．

Group Three, Western Non-professional

4-3-1

It is in the city. It is clear day, blue sky. The building is located off… it is got four pillars, four concrete pillars, located off the floor, about two meters high. The building itself is concrete building, with concrete slabs. For the walls, there is two windows, one on the east, one on the south, the paper points north. There is a guy appearing onto the east window. The building is in a very… is located in the city, so it is just behind a wall. There imagine in somewhere you get train station, you get big walls if you going out the train station. It seems beyond the line. There is no train station there I only try to describe the building behind a wall and what type wall it is. That say this the old, grey prefab type concrete buildings. The building is located on sort of four feet if you like, quite a way up. So you get the actual building. It is on four pillars. It is risen up above the wall. The wall looks quite small, is not significant. It is just a kind of brick wall, but it is prefab type building. The prefab concrete type is… you know… grey brown structure, grey brown colour, but the walls are all white, the outside walls are white. There are flowers hanging from a couple of windows off the roof. It is very, very small compact building. Just a structure with couple of windows in… it slightly different shed between window and roof. There is a lot of industrial commercial type of building in the background, might be Birmingham or somewhere. The building is behind the brick wall but the wall is not significant, because the rise… a platform on it. So four structures, the brown grey four structures raised quite ahead, and it must be about four to six meters being top. So the one columns is probably a quarter, that is just the natural pillars. Quite light blue sky as well.

4-3-2

This building is sat in the city landscape, so environment is quite few sorts of commercial and industrial buildings. I think it is typical sort of Birmingham sort of city background. So the context is that. It is a bright day, shinning

day, blue sky, that kind of thing. The building itself is raised up off the ground on sort of four pillars, which are on my imagination is sort of building actually raised up, prefabricated concrete sort of building. On my imagine like a on the age old, sort of concrete slab facade, so the building is pretty ugly. It is actually in the city. As the picture… sort of north… there are two windows, one in the wall of the east, and one in the south. Like all I drawn, it is like a square shape, the building itself rises off the ground on these pillars. It is raise building. I imagine the building is like a sort of cube… sort of thing, maybe a little bit taller than that cube, and that is what it shaped. I imagine that is like sort of 60's concrete office… sort of you know there is the building which is like the concrete slabs for the cladding, and also the walls are apparently white, on the out side, but it seems to be a structure as I imagined there are sort of sections in the facade when you actually got concrete pillars going up. The building's sides there was grey brown colour. The concrete building is going up. I imagined… I considered there is extensions of the support legs, just went up, that is gone up full high the building, which provide part of the structure there for each one of the legs. On the window of the east, there is a chap coming out the window… I am doing it pretty naked so I don't draw any cloth as well. But anyway, it just a person looking out from the window. And just above both windows, there are some plants, hanging out, possibly hanging basket or just flower hanging down from the top of the windows. I just said that is the north is if you look up, in the direction you looking up the page, so if you imagine on east facade, south facade, there is one window on each of them. It is one on the east, one on the south. And one on the east there is a chap looking out the window. On the floor ground as well, like a brick wall going across, so that building, which are on put on the support legs, is just behind this wall. So the wall is going on in front of it. And I think it is sort of very substantial harden wall, brick wall sort of thing you can get around the train stations. And it partially obscures… just the bottom of the legs, from the building, so maybe a third… a third a bit of the support legs, just covering on the building itself. I think it is just part of the foreground singly, since the building is just behind it. I think also around the building that is in the urban landscape, a lot of commercial, industrial buildings dotted around, typical cityscape. It is just very busy cityscape in the background. That is a bright day.

4-3-3

The landscape first. It is a city landscape, very urban, very grey, but blue shinning day. So maybe imagine sort of Bridgford or Lenton on a blue day. Very close to the industrial around, that is sort of industry. Not necessary a power station but factories, housing great tower blocks, concrete. We are talking 1960s'. This is the sitting it is in. Yes very shinny beautiful day in the city, enjoying the greatness in someway. And the building is on four pillars, is raised from the ground. The pillars don't any support of the building, there is fixtures of the building and they go up on the edge of the building, sort of tall… supporting… tower… pillars or legs, you can see them from the outside. The building is grey concrete slabs and on the south side there is a window, and there is a man getting out of it, looking on the urban landscape. On the east side, there is a window box, and flowers, sort of really colourful flowers, so pouring out. And in front of the building there is a wall and it is an old, stone, Victoria wall made by bricks and rags, there is lots of different colours. It has been there for years. It is very tall. You couldn't even look over it. That is the position of that. And it is in front of the house, and it is just obscuring the legs. So… and it is tall, I imagine it is a one storey building, but on high stilts, very high stilts. I think that is the main things. So it is quite like a modern building in quite… sort of 1960s' concrete building, the material is from the 1960s'. That is all concrete, fashional concrete, we were doing things in prefabricate, but yet innovative in its style and actually quite attractive, and so pleasure. There are four columns, standing on the outside support the building, and they extend up the edges, they are a feature of the building design. The building itself is made of prefabricated concrete slabs, but with one single window on the south side and one single window on the east side. And there is a lot of flowers pouring out of east window. That is grey, sort of contrast thing, the concrete… but it is just literally concrete grey slabs… I think. And I imagine it is pretty fabric.

Group Four, Western Professional

5-4-1

There is a house, but not a normal house, it is a single storey house on four concrete legs. And it must be a storey in the half in the air. When we looking, it is rectangular, we looking up, at the short end with the long side, in the setting moving the way, it is got a pitched roof. In the four legs, on in the corners, the sets slightly in a bit. And rectangular, you have 1970s' concrete legs, and it is like a base of the house, concrete base, and they continue up on the base to the roof floor. Between the columns where the house is, it is infill white timber, infill house. Where the columns accounting the base, accounting the base of the house and they continue above the base to the roof level. It is not much moved on the roof at all, and it to make at roof level. Between the columns , these are the timber cladding, white timber cladding. And there are two windows on the long side, and one window on the short side, of rectangular of the house. And also in the short side, there is like a projecting balcony, taking half line of the short side, and it sticks out about meter. There is no hand rail on the balcony, it is covering the fake grass. And there is series of hanging baskets, you always got a little flowers in there. In the foreground of the image, there is a red and black crumbling wall, which is crumbled away from the bottom of the image, which isn't part of the house, just part of like a cityscape, in foreground of the image. Beyond, in the distance, underneath the left of the house you can see a cityscape. They are three or four storeys buildings.

5-4-2

This is the about 1970s' concrete house, one and half storey… It is rise up on four concrete pillars, concrete columns, slightly set back from the edge of the house. And the short end of the house, it is near view and the long end going away in the space of it. And the roof is pitched. And there is a brick wall crumbing, falling down, which is from leading you end to the image. So it is coming, from front going back, and they stop, and… the house, is there you can see the outline of the brick houses through the… because it is raised up, the concrete pillars are raising up that platform and through the underneath of the house you can see a brick outline of the city. And there are hanging baskets with flowers in, hanging on the roof. And there is a balcony, over hanging on the short side of the house with fake grass on it. On the long side there are windows on the white timber panels. And it is not much an overhang on the roof, where the roof meets the wall. On the short side there is a roof, is broken up by section roof, I think.

5-4-3

We have a concrete cottage, not a cottage; they called it the concrete building, which is on pillars, on concrete pillars. These pillars are not up to the same surface on the side of the building, they are a little bit inside. They are the support structure. We have a solid structure, which has a pitched roof, this is quite sensible. Then there is a brick wall, which is the thing through the pillars. So we have this brick wall, which is underneath the house, the place where the pillars are. And it is like crossing the house or… So we have this brick wall somewhere underneath. And also there is grass, and on the long side of the building, which we see in perspective, so we have the front side which is very near towards us and then see in perspective, so the long side has windows, and these windows have the white timber panels.

Group Five, Eastern Children

6-4-1

Well, there is a brick wall. You can put anywhere. Then there are four sort of poles stand… so behind the brick wall. On top of the four stands, there is a sort of house. The house is sort of white, with black lines on it. It has windows. Vertical lines. And on the window edge there is sort of plant, which is sort of like a mini bush with some

flowers in it. At the bottom of the brick wall there are some shrubs and some bushes. And in the background of the actual house there are some more buildings.

6-4-2

Draw a brick wall, can be cross the page. And behind the brick wall draw four supports, support pillars. On top of the brick wall draw a building with a triangular roof. Then draw two windows… sorry one window, on the window so draw a flower, or actually a flower pot. The building itself is white with vertical black lines surround it. I think it made of wooden planks. Then, next to the brick wall draw some shrubs and bushes. And in the background draw buildings surrounding… the building you have just drawn. The building and the four support pillars are behind the wall. Yes, the four support pillars hold the house. The colour of the roof… any colour you like. The pillars… again any colour you like. House colour… white… the planks, vertically, give me the impression that it is made of wooden planks, and then painted white.

6-4-3

At the middle of the page go five centimetres left do a wall to ten centimetres right. Draw three quarters on the page… horizontal… as a wall, draw it to the end of the page but leave two centimetres gap. Right… at the bottom… on the top of there, there are some cylinders, but to support the house, four… and then, on the house, the top is a triangular roof. It has one window. On the window there is… on the window, a pot… empty flower pot. And then put a shrubs down to show that is made of wood. Any colour for the house, and then any colour for the roof, the brick is just brick colour. Bricks are on the bottom. At the left side of the page, put some hay, on the right side put some hedge. The supports are just stony colour.

6-4-4

about three quarters down the page, draw a line, a horizontal line. And then draw four pillar things to support a house. And then to the house, there are base for it, and then there is a window with a flower pot on it. There are no flowers. And then the roof, is just… you know… triangular roof. On the left side, there are some bunch of hay. And then on the right there are some bushes, hedges… same thing. And on the bottom of it, the line you draw, underneath it, it is like bricks, so…

Group Six, Western Children

2-3-1

There is house in the middle, like… it is white but with brown bits, like brown, like the corners are like brown on that. And then it got a roof like, the roof is like triangle, and it is like a teapoy. And then just out side the door, which is in front, like, on the right hand side there is like a little bit of something green, looks like grass, and there are two chairs on it. There is man popping out the window behind on the side of the house. The house is standing on the four legs. There is all grass next the house. There is like four legs. On the door side there is like a bit of plant, more like a bit of grass, with two chairs, a pink chair and a blue chair. The blue chair is more like a stall, a bit. And there is a little wall underneath the four legs are holding this house. There is no stair to get onto the house. It is brick wall. And there is buildings, normal building behind the actual house and the picture like in perspective. There is some buildings. And some plants next to the brick wall and the legs. And some man popping out the window, no one man. The sky is blue, with some… like cloud.

2-3-2

In the middle of the picture it is a house. It is black white, black green and white. It is 3D, touch just a square. And it got triangle roof, brown. The house being hold by four legs. There is a door to the right of the house. Outside the building there is grass which two chairs on it. One is pink and one is blue. On the side of the house there is a window. It is brown with a man, which is black popping out. And under the house there is a brick wall. In the

background there are small houses. And then through of the brick wall there is grass. And the sky is blue with clouds.

2-3-3

It is a house in the middle which is 3D. And there is a roof, which is brown, which is 3D as well. The house got like legs on it, holds you by legs. On the right hand side of the house there is a front door. On the left hand side it is like a window, a man heading out. Then on the left hand side there is true grass with pink and blue chairs outside. More houses are in the background which are 3D. There are two chairs which on the floor like blue and pink. And standing like houses in the background which are 3D. The legs, in the bottom, that touch the small wall, a brick wall. The sky is blue, the cloud, white clouds. And next the brick wall there is some grass. You know where is the brick wall there is grass.

Peak Lab.

Group One, Eastern Non-professional

1-3-1

它是一个建筑, 这个建筑呢, 是通过一个钢结构支架架在一个悬崖上面, 是悬空的. 这个建筑的, 明白我的意思了不? 这是一个建筑, 这个建筑通过钢结构把它悬挂在悬崖壁上. 所以看起来是悬空的一个建筑, 只是通过钢结构固定在悬崖壁上. 那么这个建筑是圆桶型的. 然后顶部有剖面, 斜剖面切开, 就是斜斜的一个面切开, 不是正正的一个, 完整的一个桶状. 然后呢怎么样到达那个建筑呢是通过一个楼梯. 那么这个楼梯就是从悬崖上一个斜的楼梯, 相当于一个通道一样通到那个建筑上面. 那么并且在建筑的外面好像看起来有一个像电梯一样的东西可以上下升降. 这样呢你就可能把你输送到你所要去的楼层里面. 那么这个圆桶形的, 就是扁圆桶的这个建筑, 外面好像贴上了… 或者看上去像玻璃一样的… 应该叫玻璃窗吧. 就一圈都是玻璃的, 看起来是蓝色的. 基本就是这样吧, 就是一个建筑, 扁圆桶的, 它是通过钢结构悬挂在悬崖壁上, 露空的实际上是. 那么这个建筑本身的重量全部靠这个钢结构跟那个悬崖呢固定. 所以挑在空中的一个建筑是. 然后在建筑的底部, 底部外面那个就是墙上有看见两个小椭圆形的洞, 可能是用来做通风用的. 就在靠建筑的底部, 两个洞. 你想嘛, 一个就悬崖壁嘛! 悬崖壁上就通过像三角形这样一个钢结构把它挑… 支撑住嘛, 悬挂在那个空中. 这本身是一个建筑, 这个建筑它不是坐落在地上, 而是通过钢结构, 被这个钢结构挑在半空当中, 这个钢结构是连接在悬崖壁上面. 就是靠顶部的悬崖壁上, 并不是悬崖的正中间. 那么怎样到达这栋建筑里面呢, 那么不是挑在半空当中的吗? 那么它有一个像台阶一样, 就是像楼梯一样的梯子通过悬崖壁的顶部就可以延伸到建筑的里面. 那么在这个建筑的外面有一个电梯一样的东西, 可以通过它上下, 就是升降电梯. 你通过这个电梯可以… 虽然一开始, 最初是到达顶部, 然后通过这个电梯可以上下移动, 这就是我们一般的电梯的功能, 对吧. 这个电梯是在外面, 也是钢结构, 看起来像透明的这种升降电梯一样, 或者叫观光电梯一样. 那么这个建筑本身呢是个扁椭圆形的, 那么是玻璃结构的, 窗户从外面看起来都是一小块一小块的玻璃. 建筑的本身顶部并不是平的, 它是通过一个什么平面一样一切. 切掉一块, 所以是斜斜的一个面, 面向东. 如果你这个… 建筑应该是挂在悬崖的东面, 所以说悬崖在西面应该说是. 然后建筑的底部就有两个洞, 两个看起来就是… 墙体上就有两个洞, 椭圆形的洞, 可能是用来通风用的.

1-3-2

这个建筑首先是在一个悬崖上, 然后这个建筑还是悬空的, 它是有一个… 底下有一个三角架一样, 三角架是在悬崖上, 下面还架空起来的. 然后那建筑本身是一个圆柱体, 椭圆柱体吧. 椭圆柱体它的顶部是一个斜的纵切面, 并不是正的圆柱体. 顶部是纵切面. 然后它有一个楼梯, 是从… 就是在这个画的东面… 是从悬崖上面一直延伸到那个建筑里面. 就是这样子人就可以上那个建筑了. 就在这个画的东面, 东面那个悬崖的面上上到那个圆柱体上面的. 楼梯应该顺势有点弯度吧. 然后在圆柱体的西面它有一个升降的电梯, 在

建筑外面… 当然在建筑里面了,但是能看见, 能看见那一面上, 可视那一面上. 然后整个这个建筑是玻璃面的, 是小方格块的玻璃面, 它是蓝色的. 三角架支撑的.

1-3-3

是在悬崖上, 由三角架支撑的一个椭圆柱体的一个房子, 椭圆柱体的. 然后它那个圆柱体, 就是房顶不是平的, 是斜的, 切下来的那一种椭圆形的, 斜切下来的房顶. 反正它那个房顶是斜切下来那一块, 不是那种平的. 然后从东面的悬崖上, 有一个楼梯直升到椭圆形的建筑上. 西面有一个升降的电梯, 在圆柱里面, 但是外面可以看到. 然后这个整个的建筑都是由蓝色的小玻璃构成的, 就整个建筑的外表还有顶, 都是由蓝色小玻璃构成的.

Group Two, Eastern Professional

3-4-1

你要先想象一下这个建筑的环境. 首先这个建筑是用两个三角形的钢结构, 把它连到一个冰天雪地的悬崖峭壁上. 就是这个建筑吧, 是个椭圆形的, 但是你的角度是从下往上看, 就是相当于你是在仰视它. 你看不到它的顶, 但是你只能看到它那个… 这边有一个椭圆形的, 弧型的建筑竖上去的, 然后通体是玻璃的, 是蓝色的. 然后就说是… 大概分… 因为它用了四道白色的圈圈作为横向划分, 然后分了五部分, 就是相当于是椭圆形的划分, 然后从底下往上越来越小变的. 因为你是从下往上仰视看它, 所以有一个透视角度在里面, 不是那个椭圆形越变越小, 而是划分的每一部分的长度越来越小. 比如说第一次划分的最高, 然后第二层要短一点, 第三层要再短一点, 第四个再短一点, 到第五个的时候就是说只有一半了. 然后上面它不是一个椭圆形的平的, 大概像是有一个弧度, 左边会高一些, 右边会低一些, 就那样的一个弧度就下去了. 然后这个建筑, 你看到的是椭圆形那个尖尖的那一部分, 而且还能看到椭圆形那样延伸, 就是长边延伸过去的那一部分. 然后它是用两个三角形的钢结构, 然后是竖向的三角形. 那个钢结构就相当于上面有一条腿, 下面有一条腿, 然后是一个三角形, 跟它这个椭圆形的东西通过… 就是这个椭圆形玻璃建筑旁边有一道竖向的钢梁, 那个钢梁是分别连到了两个竖向, 三角形钢结构的… 就是两个相连接的. 然后这两个三角形的钢结构又跟悬崖峭壁是相连的. 所以就能把这个通体玻璃的建筑悬挑在悬崖外面. 这是一个类似于 90 度的峭壁, 冰天雪地的, 上面有雪, 然后下面也是雪地, 然后那个地方也就是有点像山的感觉, 非常冰冷, 然后从悬崖的顶上有一个楼梯, 有一个白色的钢结构的楼梯通到这个建筑上. 楼梯是斜下去的. 从坡顶, 从峭壁的顶上就那样一阶一阶下去的, 下到建筑上去的. 三角形钢梁有两个, 它也是成一个三角形的… 这三角形的钢梁, 它有两个边的交点, 是跟峭壁相交的, 然后它就有一个边跟那个椭圆形建筑是竖向上并列的. 它的第三条边跟建筑是竖向并列的. 然后它就是通过竖向并列的这根钢… 就是这两个三角形是相交于这一点的, 或者说是相交于这个面的也可以. 然后这两个竖向三角形钢梁就相当于是分开了, 分开一点, 但是同时都相交于与建筑平行, 竖向垂直的那跟钢梁上. 在这个通体是蓝色的玻璃的建筑最下面有两个小的, 不是方形的玻璃, 四角都是弧形的玻璃, 但也不是圆的, 就是四角本来应是垂直的, 但它是弧形的. 玻璃窗, 弧形的玻璃窗, 两个, 在最下面一层. 上面四层都没有. 三角形钢梁是圆柱型的钢管, 它要组成一个三角形的话它要有上面一根下面一根, 那就说明它的角是插在悬崖峭壁上, 但是它还有第三条边, 第三条边要把这两根钢管连起来, 那第三条边就是附着在椭圆形建筑上, 它跟它就相当于连为一体的. 那另两根钢管跟连在建筑上的第三根梁, 第三根钢管就组成了一个三角形. 然后只有这一个三角形钢管的话那个建筑肯定会左右摇摆, 然后它有多了一个一样的三角形的钢管组成的钢结构, 然后但是它的交点不跟这个三角形是一个点, 它又在悬崖峭壁上同一个水平线又平移了一些位置. 那样就说它那三个点就又组成了一个水平的三角形, 这样它就稳固了. 玻璃的蓝要浅一些. 跟悬崖相交的那个点有一个铁板就把那个点和悬崖连在一起. 因为那个点肯定是不稳固的, 所以它多了一个方形的钢板, 不是很大, 就跟悬崖卯在一起.

3-4-2

现在想象一个场景, 这场景就是在悬崖边, 悬崖峭壁, 那悬崖很陡的. 有一个建筑物你是由下往上的仰视.

然后这个建筑体它是圆柱形的．所以由下往上看会底部是比头还要大．然后这个建筑体它是通体蓝色的．然后这个建筑体它有四条线分割它，水平分割它，所以会有五等份．然后这五等份不是等分的，是由下到上越来越小．然后五等份最底部的那个等份它有窗户．就是五等份里面，最下面最宽的那一个等份它有两个窗户．然后这个窗户的颜色也是蓝色，但是它是比较浅的蓝色．因为这个建筑，这个圆柱体它是悬挑出悬崖上吧，所以它又一个结构是卯在悬崖壁上的，就是两个三角形钢．两个三角形状的钢梁．然后卯在那个山壁上．然后它的支点应该是在… 讲其中一个三角形，它的支点是在山壁上，然后它不是还有另外两个点吗，是在那个圆柱体上．然后它就形成支架．然后另外一个三角形的钢不是跟它叠在一起的，是错开的，有点位移，平行的位移．应该是平行的．不会叠在一起．因为它会造成是变成一个立体状嘛，所以它一定要错开．才有办法稳固那个结构体．然后有一点就是悬崖到圆柱体有一个楼梯．然后这个楼梯是有点斜下，往下走的楼梯，就是从悬崖走到那个圆柱体里面，是要往下走的楼梯．大概就是这样．建筑盖在悬崖边，它是挑… 它是腾空在那个悬崖边，出挑出去的，等于说是你腾空啊，然后它旁边有一个悬崖．楼梯从悬崖走下去到那个圆柱体．反正是悬在悬崖边上的．是往下走，楼梯是斜的，我觉的是斜的．就是不是那种攀附到屋顶那种，是咚咚咚往下走那种．只有两个窗，是浅蓝色的．因为它是一个圆柱体，所以它附在那个圆柱体上，所以它会有一点弧形．建筑屋是通体蓝色，通澈．背景大概就是悬崖边．

3-4-3

圆桶状的建筑物，然后整个都是蓝色的，也是很蓝很蓝的一个圆桶状建筑物．然后它悬挑出一个悬崖．其实那个场景是一个很陡峭的悬崖．然后有两个三角形的那个结构体去撑住那个建筑物．然后这张图片是仰视，从底下往上看，所以你会感觉这个圆桶状的建筑物底大头小这样子．然后接着它，建筑物上头有四条线，就是水平的四条线分割成五段．然后这个分割线底下比较宽，越往上越密．然后最底下的第一层有两扇窗户．然后那个窗户是浅蓝色的．也是蓝色系，是浅蓝色的．然后在悬崖上有… 就是有一个楼梯，由上往下走，然后通到这个建筑物．就是说这个楼梯是由上往下连到建筑物．楼梯在悬崖上，楼在悬崖的… 有可能中间．就是说它是整个出挑出来的，所以它有可能不是在最顶端，建筑应该不是在最顶端，就是它还有几阶踏步．大致上就这样．踏步是直接通到连接建筑物．就是从悬崖上可以走下去，走到建筑物里头．这个楼应该不会很大，理论上大概应该是两层的感觉吧，它分五道，但是只有最下面那一层有窗户．底下连接部位是两个三角形的结构．没有什么环境．那个结构应该是属于比较框架性的吧，就三角形那个结构，框架，然后架着这样子．房子是蓝色的，架子… 没有．

Group Three, Western Non-professional

4-1-1

It is on… is very top on the mountain. There is lots of mountains on the background, low level, tops of the mountains. And this building is fixed to the side of like a mountain cliff, looks like is quite near the top. There is quite a lot of snow, around the side of the cliff, a little bit of rock getting through. And the building actually is built hanging on the side of it, and it is supported out from the edge of the cliff, and daggling over edge something, and supported out by triangular, sort of supporting structure where the two corners of the triangle structure actually on the building and then one point against the cliff. And the other supporting structure of the building is a staircase with a handrail, coming down from the cliff to connect the top part of the building. So that provides another support for the building itself. The structure is a kind of tube metallic, the structure is actually supporting the building out form the edge of the cliff, so it is sort of hanging out over the edge. The building itself is got sorts of… the building itself is like a sort of squash cylinder, as if you image you have a cylinder shape, you stay it on the table and squash on the side of it. So if you look on the top, it is look like sort of ellipse rather than a circular shape. And this is vertical orientation. The facade of the building is sort of lattice shape, you got vertical and horizontal lines. That is bluish grey, a kind of glaze facade all over it. At the bottom of the ellipse squash cylinder structure if you like this, two, ellipse holes. One is over the other, about half the diameter of the building itself.

And the bottom of the building is slight angle up towards away from the cliff face, and at the top is slight angle down away from the cliff face. Slight angle on the top and the bottom, but non part of the triangle, probably not… there is also a small… I don't know it is radio or antenna something on the top spine on the left hand side of the building, which is near the cliff. The support structure from the cliff face to the building, where connects the building there is vertical metal tubes, which provides the interface between the supports going to the cliff face and the building itself. And this is very, quite small triangular sort of pattern of the support structure again made from little metal poles, looks like scaffolding pole but bit shinning. Blue sky in the background, no clouds. Ok, so just record, that sort of structure connected to the cliff is hanging off over the edge, and supported by some triangle frame, also stair going a cross line… bridge stair with hand rail and that is that it is going down on some angle, not quite 45 degrees, going down from cliff face to near the top of the building.

4-1-2

The surrounding are mountains and they have some snow on top. It is very blue sky. And you can see there are a lot of mountains on the background. The building is hanging on the cliff, somewhere on the mountain. It is being supported by… it is a cylinder shape, and also a smash cylinder. It is being supported by triangle structure. There is a touch to the mountain on the hill, and touch the building. The main body of the building is a large cylinder in a vertical orientation. But it has two smaller one underneath it. The main body of the building is a cylinder shape, vertical, but it is kind of cylinder that has been smashed on both sides. As if you can give a can a little bit force to make it a little squashed. It is sat on the top of two smaller ones, just smaller volume, similar volumes, I believe. It has a triangle structure, triangular that is. Somehow two sides are touched to the building, and one side is touched to the cliff. Itself is hanging from the mountain. The facade is all over the glazing, kind of bluish, and has vertical and horizontal lines. There is a staircase from the top of the building, there is also helping to holding the building, to the face. And there is also a TV or radio, well, it is from the reception. I think that is main things, yes, on the top of the structure, of the building yet. So the main thing reading, it is that surrounds are really mountains and snow. It is hanging from one of these mountains. And it is kind of cylinder smashed shape, that is a square cylinder, triangular structure. Well, There is a structure somehow holding the building to the cliff, to the mountain side… the surrounding, the shape of the building, and the building sits on two smaller ones, it has a staircase touches into the mountain and also the triangle structure, and facade, they has glazing, bluish glazing and vertical and horizontal lines.

4-1-3

You got this building. I will describe it secondly but describe the landscape, environment first. The building is located in mountain region and below the mountain is clear blue sky with sort of darkish cloud, dark cloud. The building itself is a rectangular squashed cylinder. So I imagine that is a drink can we squash it. The building is a squashed cylinder, the main building, but it is located on two smaller cylinder tanks. So below the cylinder, the squashed cylinder, there are two cylinders which is found it out. Below that, there are the supports for the building are triangular. So you got triangles supports to the structures, but then two cylinders locate on the top with the squashed cylinder, it is the main building. One squashed cylinder, that is the top one. Within that cylinder it must be a big glazing area, big some space, that colour is blue, it is strongly, strong blue. So big glazing area on this squashed cylinder. The supports are triangle. This building is located on the cliff edge, with the mountain's regions. The mountain's regions beyond it, this is the cliff edge where the building located out. From the building to the mountains there is a staircase. So you really have your mountain's area. There is many, many, many mountains, blue sky. I put like a chimney with smoke bellowing out of it. That is the cylinder. The environments basically just is mountain which is grey volcano, I think I really got to be. I didn't emphasize the staircase. Blue sky, but heavily clouded, mountains, I put snows on the mountains, I try to, I also put where the staircase is, that is a path leading a way from the mountain, so it looks like some gravel road… building, I think I included everything in the building,

so big glazing area on this squashed cylinder, two cylinders sitting beneath it, supported by triangular structures. That is located on the cliff edge.

Group Four, Western Professional

5-1-1

In an Alps landscape, in the peak of the mountain, there is this building. That is detached from the mountain, it is like a cliff, cliff in that mountain, but it looks like we are on the peak of the mountain, there is a detached building. That is only connected to the mountain by a structure, tubular structure, pipes, like pipes. That is very high-tech structure. It is attached to the mountain with a deltaic structure. But the building is like a vertical tube. All the finish of the building is made of solar panels, or something similar to that. And this vertical kind of pipe or tube, that is the building, has, in the lower part, two windows, oval windows, or elliptical windows… in the lower part, two elliptical, one over the other. And this building is connected also to the mountain in the upper part with a kind of bridge stair, or stair bridge. The landscape has a beautiful blue sky, and you can see up to the horizon. You can see the structure attachment to the mountain in the extreme of the structure, the tethraedrical structure. But the building is like flying so it has no earth under the building, there is no earth, is just air.

5-1-2

In the Alps landscape, we have a building, which is little detached off the mountain. It is on the peak of the mountain, we have the mountains. So on the top of the mountain we have a structure, a building, a small structure. And this structure has the solid part, which is cube, a vertical cube. And then the part which is connected with the mountain, is like a truss structure of the beams, columns or only metal I don't know. So imagine the structure holds the building and connects with the mountain, and then you have this cube which is detached off the ground. So it is like flying. Also there is a connection with a bridge, not a bridge, like a bridge which is a stair, with the mountain, from aside. So there are also two windows, which are oval windows, at the lower level of the building, of the cube. My understanding of this building is that it is a cube, that is on a structure, a light structure. Because it is connected with the ground, the ground within the mountain. So it is like a flying object with very light connection with the environment, not solid. So the building is solid and the connection part is light. You have ability to see through. For me it is a solid thing and a structure that is supported it, and connection with the mountains, so we have a lonely building, a lonely cube.

5-1-3

Where in the Alps setting, and there is lots of pine trees. There is mountains in the background and foreground. And the building is on an isolated place, on the top of the mountain. And then a big cube, that is… kind of… sets apart from the block of the mountain, which is the main element of the building. And then there are grid beams and columns. They attach to the mountain side, support the cube. There are two windows, quite low down, and some steps take you up, and there is a bridge that touches the cube to the mountain. It is a low level window on the cube.

Group Five, Eastern Children

6-2-1

Left hand side, there is a cliff, about seven centimetres, about three centimetres actually. And on the top, about three quarters high of the page, and it is quite rock and bumpy. On the top there is a staircase… sort of cylinder. That staircase is about five centimetres long, going directly down. And it is attached to about three quarters up the cylinder. The cylinder the top on is making a sharp point. The left of the cylinder is going slow up smoothly, but the left one is still going up. And the cylinder is a solar collector, which are solar panels, which are curved on

cylinder. About in the middle of the cliff, there were attached the cliff… there is metal bole on the cliff, they are attached the metal boles to the solar… to the cylinder and to the cliff very stable. Beneath all of those are small mountains bluish so high. The steps, there is an entrance to the cylinder as well. The solar panels are squared. And about every three centimetres, there is a line, and half way through the curved solar panel, there is a line downs there, quite rough.

6-2-2

Well, there is a hill, sort of cliff thing, and on the left side of the page. On the top of the hill, there is about a cylinder thing. And the cylinder has solar panel on it. And just as you know there is a door in the cylinder. And on the side of the cylinder there is sort of ladder, staircase. And also at the bottom of the cliff, there are other little mountain cliffs as well. And that is it. And there wasn't very much colour.

6-2-3

On the left of the page, there is kind of big cliff. There are some cliffs underneath it, that small rocky cliffs. And the cylinder type thing on top of the cliff. And it has a door. And then, there are about two or three solar panels coming up from it, the top of the cylinder, not the cliff.

6-2-4

A large cliff on the left hand side, and smaller more distinct cliffs below. Then draw a cylindrical shape in yellowish colour with glass entrance. On the top of the cylindrical shape draw multiple solar panels and draw a sun facing, towards the solar panels.

Group Six, Western Children

2-1-1

It is a large mountain on the left hand side. That is full of snow. There is a building hanging off the mountain. It is like the shape of cans. It is like a lipstick thing. From mountain to building there are steps. At the bottom of the building there are two oval windows, one is above the other one. And underneath it, it is… it is a lot of snow. Building is grey.

2-1-2

There is a mountain with two mounts, like two mini peaks at the top of the left hand corner, so large mountain. There is the snow on the top of the mountain. Where the snow finishes there is some grass. The wooden steps leading to lipstick shape building at the bottom. It is large building as well, all grey. There are two oval shape windows at the bottom, one over another. One, the top one slight to the right. There is a mountain at the top left hand corner with two little peaks on the top. It is large mountain. it is snow on the top. Where the snow finishes there is the grass, bright green grass. There is a wooden step leading to a lipstick shape building at the bottom of the page and the wooden step leads from where the snow to the building more or less a straight line. Slightly diagonal, the building is on the bottom of the mountain and the snow on the floor where the building is. Close the floor on the building, there are two windows, two oval shape windows, more or less big, one on the top of each other, and the top one is slightly to the right of the bottom. It is all the windows. The building is all grey, nothing else on it. There is snow in the floor. That is about it. The sky is white. So it has no colour.

2-1-3

Ok ,well! There is mountain with two peaks at the left hand side corner over on the top. And then, the snow on the peaks, and then, there is grass when the snow finished. And then there are some wooden steps diagonally down on to a building. It is a lipstick building, it is looks like a lipstick. It is all grey, the building. The step, the wooden step is go like down diagonally. And the snow under the building is there. And there are two oval windows. And one over, well, one is like at the bottom, another one is over a bit right. And the sky has no colour. There is a snow man

besides the lipstick building. I want to show that there was snow.

Adorno's Hut

Group One, Eastern Non-professional

1-1-1

大概是这样一幅画, 其实也很简单. 背景就是一个很简单的三维立体一样的. 大概是那样的背景. 然后那个材质, 就是那个地板的材质和墙的材质. 地板是木质地板那种材质, 墙是那种, 比较粗糙的那种, 原始的那种材质. 就是盖房子的时候, 那个石灰还没抹的时候那个墙, 就那个样子. 而且那个砖是大块的, 大块的砖. 这就是… 现在是简单讲的是你的背景. 木地板的材质就是一般的那种, 浅黄色的木地板那个颜色. 然后后面背景那个墙就是深灰色的. 然后这大概就是背景. 然后现在就讲那个东西吧. 那个东西就是一个… 你有没有见过就是盖房子没有盖好的梁那个样子. 上面有一个三角形的那种, 三角形那种梁那样的结构, 然后底下有两根大柱子. 然后呢有一个就是那种… 你站在那个图面前看… 往后看的一种抽象的图画. 后面是斜的那种… 抽象的几根大柱子, 就有点像… 大概就这样一个图形, 就有点像那种… 你从平面看就是上面一个三角, 底下两根柱子, 然后这幅画再立体起来, 后面就是有几排柱子,但是是立体的. 然后就是… 在这幅画的西边… 西半面有光线, 是采光的面. 然后西半面是用的红色, 红色和木质… 柱子都是木质的… 然后上面… 你有没有玩过积木那种东西, 积木, 然后上面有那个… 有红色的漆的铁质的东西把它固定住了. 就是个木质的结构, 然后但是… 就是像是外面好像有一层裹着的壳一样漆… 红色铁的东西把它固定住了. 然后就是那个… 这是你的左半边图的效果是这个样子. 然后你的右半边的那个柱子全部都是木制结构. 就是这样, 然后左半边是采光… 不对, 我说错了, 西边, 西边好像是采光的, 东边是暗的, 阴暗面, 就这样. 完了之后还有一些细节. 就是这是大概的样子, 然后, 就是刚才我说的背景那个墙那个地方, 在墙的… 它不是一个三角的… 不是一个三维立体的那种墙嘛! 然后就是在墙的… 在墙的后面… 不是后面, 就正对方吧… 你面对着画的方向, 就是你能看见的地方, 有那个像暖汽片那样的东西. 就应该是暖汽片. 就暖汽片… 你能看见一点点, 露出点端倪, 大概就这个样子. 大概看见的这个物体吧就是一个房子的内结构一样的, 但是是一副立体的. 就是这样. 上面是三角型, 底下有支柱, 有承重的, 就是这样. 就是西面, 刚才我说的西面是红色的, 然后是那种大红色, 东面的柱子是像树皮的颜色, 你就画成棕色吧. 西面的柱子… 就是你看见那个, 比方说你走在林荫道上, 你看见那个树… 在你眼里看见那个树, 一排, 这样竖着看下去一排一排的就是那样… 那个… 就是那样摆的. 就是一排下去它不是有个透视的效果嘛, 就是那样子. 西面的颜色, 还有东面的颜色… 就是西面因为它比较复杂一些, 西面是… 先是就那种原木的颜色, 就是木的本白色. 然后上面有铁质的那个, 铁质的是红色的, 是漆. 你要是还想画的细一点, 就可以把那个… 铁质的… 有那个小螺丝钉.

1-1-2

就是说一个像房间一样的地方的感觉. 然后是木地板, 然后墙是… 就像那种砖墙没刷过… 没贴过墙纸或刷过漆那样的. 然后房顶就是那种普通的木三角的那种房梁吧. 然后西边… 就是光是从西往东照. 西边那几条柱子是像铁柱, 然后有一点锈, 有一点红色那个样子, 就是西边那几条柱子有点像铁锈那种红色. 然后东边的是像树那种树皮那种颜色. 然后大概是北面的墙上好像有像暖气那样的东西吧, 像暖汽片那样的东西.

1-1-3

那个东西呢看起来像一栋房子. 那个东西呢有一个木地板. 东面和西面的墙就是我们一般的砖头那种墙. 然后在西面还有一些柱子. 左西右东. 好! 那个东西像一个房子, 然后有木地板, 东西的墙就像我们一般的砖墙. 然后在西面有的是…有一个铁红色的柱子, 西面有铁红色的柱子, 东面是有一个像树皮色一样的柱子. 然后呢还有屋顶, 屋顶呢是我们一般的木屋顶. 就是我们的尖角木屋顶. 还有北面那个墙, 北面墙上有

一块像我们暖汽片一样的东西. 木地板, 东西两座砖墙, 西面是铁红色的柱子, 东面是树皮色的柱子, 北面墙上有那个挂着的东西, 然后三角屋顶… 好像就这吧. 木头的三角屋顶.

Group Two, Eastern Professional

3-3-1

这是一个结构体，然后这一个结构体呢它是由…左半边是钢梁的结构，右半边是木头的结构. 钢梁结构是, 有点类似 I 型钢. 然后那个钢梁是红色的. 那木头结构就是它的原色. 然后它的形状有点像希腊神庙的那种，上面是三角屋顶的形式，下面就是它那个柱状的结构. 所以就是左边是钢梁，右边是木架构. 然后在木架构的正面你可以看到它有三颗铆钉，是外露的，它们都是结构外露的. 然后它这个结构体总共有四根钢梁，然后四根柱子这样子. 总共有四组，也就是说，它是一个整个结构体，但是呢，我们可以算那个… 它又… 它的长就有四根落柱. 就是分别有四根钢梁落柱，四根木头的落柱. 就是说这个结构体它有一个深对吧… 那这个深呢，左侧是钢梁，右侧是木柱，木头柱子，然后钢梁就有四根，然后木头柱子就有四根. 它们中间就是，就像我刚才提到的它的正面他有一个，很清楚的铆钉，它就是铆起来的，铆钉铆住的. 在中间，这个铆钉是水平的, 是水平排列的. 它不是上下垂直排列, 它是水平的. 表面上看从中间… 一半的中线的地方往木头铆过去. 这是一个透视图，主要表现的是一个二向透视. 所以我们可以看到正面和侧面. 它就如同我所说的, 侧面我们就可以看到它有… 其实正面是山墙面，侧面是可以显示出它有四根钢梁以及四根的柱梁，柱子. 山墙面上面的山墙，例如说三角形，它也是一半是钢梁做成一半是木头做成，组起来的. 所以组好这个屋顶的部分之后，它有两根落柱，左边也是钢梁，右边也是木头.

3-3-2

这是一个框架，它是由一个钢架和木架结合起来的一个，像一个屋架结构一样. 然后左侧是一半三角形… 可以这样想象，它就是一个传统的，就是说，山墙面，山墙面就相当于一个帕提农神庙一样，希腊神庙那种，上面是三角的, 底下是落了两根柱子，就是在一个角一个柱子，只需要一根，两边各一根就行了. 然后呢，等于是从中间劈了一半，然后左侧这一部分全是钢结构，右侧这一部分全是木结构. 然后沿着这个一直往过排，排了四榀，有四榀桁架. 就把这个三角形，山墙面相当于往后排四次. 这样的话，相当于在左侧形成四根柱子. 山墙面算一榀，算一组，每个山墙面…这个山墙面左右两侧各有一根柱子. 左边是钢结构，右边是木结构. 钢结构是红颜色的，木结构是木色的. 然后相当于这个算一组，然后往后阵列四次. 这样形成一个二维透视. 左边看到正面，所谓的正面，实际上就是咱们的山墙面. 然后侧面就是那四根柱子，四榀. 那么四榀的话一样的重复，就是说左边是钢结构，右边是木结构. 大致就是这样，从形态上就是这样. 然后呢，它的连接方式是通过铆钉… 就是木结构这边通过铆钉，也就是从你的山墙面上可以看到水平的三个铆钉. 具体位置在哪我不知道. 也没有这方面的信息，但是我把它放在了横梁上面. 其实这个简化说来就像那种农村盖房的屋架一样，就是那种感觉. 然后无非就是说朝阳这一坡是钢结构，那一坡是木结构. 然后一共有三个开间，所以就四根柱子. 是个两点透视，两个灭点. 然后颜色是红色和木色，两个颜色. 其实就是个双坡屋顶的房子，三个开间，然后把屋架画出来，一坡是钢结构，一坡是木结构.

3-3-3

这个建筑就是一个，是坡屋顶，就两面坡的坡屋顶. 然后你可以从山墙的角度… 就是侧面看过去，就是说你能看到山墙，还能看到另外一面坡屋顶. 然后右边坡屋顶是木结构的，然后你能看到它那个… 里面结构都是露出来的，就是三个开间，所以有四榀三角形的那种坡梁，支撑屋顶的三角形的榀架. 然后因为有三个开间所以你能看到四个榀架. 然后它的左面是钢结构的. 从一面山墙可以看到另外一面，右面的坡屋顶. 你是从山墙的角度往那看，你可以看到两个面，就是你看到山墙，还能看到右边的木屋顶，但是那个木屋顶只是一些框架在里面，它是外露的嘛，没有屋顶铺的那些瓦啊，屋面板之类的，就是能看到四榀的三角形的榀架. 然后这是右边，右边是木的, 是原木色的，左边是钢结构的，然后钢结构是红色的. 然后它不是像右边那样外露的，是铺满了那种… 就是有屋顶的. 所以就相当于一边外露，一边不外露. 每一榀都有两根柱子支撑着它，就相当于从第一个山墙那种榀架… 两个柱子支撑着往后重复四个，因为它

有三个开间．左边就是钢结构的，是红色的．只是说屋顶的左边是钢结构的，右边是木结构的．至于柱子是啥的… 你就看着画吧，我也不知道是啥，那就还是按一边钢一边木吧．反正木头是原木色的．

Group Three, Western Non-professional

4-2-1

That building is in another room, a big room, a kind of extend or demonstration thing. It has more than a shape as you would draw a house as a kid. You don't see the big building, you just see this inside a room. It is a kind of demonstration thing I believe, because it has two different structures. The all will shapes the same as a house you will draw as kid. It's… for roof… for walls… not more than that… but the left side… when you look at the picture… the left side so are metal structure, red metal structure, so the beams, the columns and the roof are all metal, all red. The building is divided right in the middle. Left side so red metal structure, and the right side is wooden structure. So they have the same shape, they connected to each other, but they have two different materials. It is like a demonstration, is like a stand-out something for kind of fairy. So it doesn't have walls, or windows, or roof coving it, you just see the structure. You don't see anything else. It is sort of single word what really give you a idea being a building, just the columns, as if you looking at the Parthenon in Greece. You know whether there wasn't anymore, but they have the columns all align. The columns, on the… your left wall and your right wall, so it is a longer, square rectangular shape building but doesn't have wall or roof, it just have the columns and the structure of the roof. And all the left side is metal structure and all the right side is the wooden structure. The metal structure is red. The wooden structure is not painted at all. But the columns are more rustic, so the rest of the structure is just plain timber, just normal timber, but the columns themselves they look like just a trunk. It doesn't have any cover for the roof, doesn't have tiles anything, just a structure. As it doesn't have the walls, I think the only thing that is being demonstrated by this building is really the structure. And half… maybe a metal structure will be connected to a timber structure. So the roof, there is nothing covering on it but you can see the structure. Again, half metal and half timber. They are connected with each other so for example the timber beam gets more or less the size of the metal structure. And they are connected by screw. By screw… a big, metal… So it is not a real building, it just is a structure of a building, doesn't have walls or floors or roof, but it does have the whole of that shape. So consequently it doesn't have a door, or windows, or anything just the structure of the building. So you always see a roman temple, or a Greek temple, you know it doesn't have any more you have the columns, and you have the out shape, which is triangle kind of roof, and just columns on the left and right sides. That is mainly but much smaller. I believe there are four or five columns on each side… the triangle shape for the roof, that is it. The room is dark, you can tell how the feeling is because it is on the picture. All you can see is the wall behind it, a little bit further behind, and there is a heater, like radiator on the floor, kind of grey colour. Just dark room… no… nothing in the room. In the picture just see the building and the radiator on the wall behind it. The building we are talking about is not very big because it is a demonstration thing. It is not… anyway it can be inside another building. So it is not anything massive. If you compare with the radiator behind it, it is quite small. You probably can get inside it but you won't to be much bigger than two and half meter or something like that. How would I say it is just demonstrated how metal structure can connect to the timber or how the substation are different from one side to the other side or something.

4-2-2

The first I describe is the surrounding, then that is the building. It is in a large, large room. It is the building all in a large response space. The building actually is very small, compared with this very dark space, maybe an exhibition hall, that is I imagine it. This is a demonstration building, demonstrating the way of the steel and wood can be used in manufacture and in building construction. It is the building, is like a Greek antique theatre and it is got the

columns. So half of the building is metal and metal is red, and half of the building is made of wood, a raw rustic style, it is like a children's house. It is very, very simple. It is a basic house you would draw with a triangular roof, and that is all… square, wood. But it hasn't got windows. It is just like… it got columns. And on one side, that is the left side, it is made of steel or some sort of metal and the metal is red in colour. This thing is red colour, I think it is paint in red. And on the right hand side, very rustic wooden building, a sort of style, sort of thing many be you find more in France. A column collage, you know the half timbered, sort of style. That is how I imagined. That is really just, and then you got really quite intricate demonstration that how the two have been connected together in between the building, so the wood joins to the metal, and how the metal connects to the wood. And I imagine that there will be lots of different ways doing that different… I think that is it, a demonstration building, it is a quite small building; it is about two meters high in total. You got like a children's house, that with a triangular roof, and square room. The left side of the house is made by the red metal, is red metal structure. And the right hand side is made by traditional French, sort of style rustic wood. So you got a house slides down the middle, almost between the red metal structure and more traditional construction. And you have not got the wall; you have not actually got the wall filled in the columns. So that is all of a structure. There is no walls. You have not got floor… we have got a floor, looks like this on the floor, but that hasn't the house actually got the floor, and the roof, the structure for the roof is there, but there is no roof tiles on there for example. The structure for the wall is there but there is no actual wall on… and again on the wood side the wood structure is there. So it is like… it is a house hasn't got the… it is just got the core basically, almost like… is like the bones of the house. And it is in a very big ground, very dark ground. So it is sort of quite small in true. The wood isn't treated, just wood, bare wood. The metal has been paint to red. I imagine it might be a sort of thing, you might see like 100% design, like the NEC in Birmingham, so go around in a big exhibition hall. That is my imagine. It is the construction techniques.

4-2-3

this seems to be a like a sort of model building, like a concept building, so that is not full size, totally about two meters high configure. And this model building inside a dark room, so it is like a quite… not sure for this… a hall, probably, some like a big hall maybe exhibition hall on this size like a model building inside, and the hall itself is quite dark. And the building is totally about two meters high. It seems to be like a mixture of two buildings join together. And it is sort of the overall building is a typical kiddie sort of building with a triangle roof, vertical size and so on. It is divided… if we can do it from left hand side to the right hand side. The left is made… is like a sort of Greek style building with columns, and red painted metal. But then, the right hand side, is French style, but doesn't have any windows on the right hand side, is made of wood, it is like a light colour wood, untreated wood. The whole building doesn't have a floor, so you can see through like it is a building shell kind of thing. So you can see the wooden structure on the right, the whole open of the roof structure, and so on. But it is not sort of solid wall, anything like that windows. The traditional French wooden building, but I just, follow to it, it is just a wooden building with triangular roof, no windows, non just… so I imagine it just like a wooden frame, but wasn't actually filled in. You know, it is like a wooden scaffold construction if you like. And it just is holding up a triangular roof. And I don't pick any tiles or anything on the roof itself. So again I imagine it is like a structured roof, maybe the trusses for example. You have like a wooden structure of the roof, but without covering by tiles as well. So the whole building is in the rather frame on the transparent… on the structure, too. And it doesn't have a floor opposite the ground standing. Left hand side, like a vertical columns, like sort of Greek classical style building, like a sort of market square… you know the council building market square we got the lines, we got the big vertical columns in it, like a classical Greek… yes post, made in metal, paint in red. I haven't get anything inside I think it is like a shell of building rather than solid wall and roof. So you pretty much imagine to see through the structure.

Group Four, Western Professional

5-2-1

So imagine this building, which is not a solid building, it is more like an exhibit. And it is huge, when we scale it when we look the people. But it is a like an ordinary house, which means that. It is only the skeleton. We have the structure… for example, when you think a house as a child, you have the triangle for the roof, and then you have square for the rest. So imagine this as a frame, repeated four times. And the strange thing about the building is halfway. It is made of steel beams of H shape, and the other half is made of wood. And specially the columns… four columns in the right hand side are made of… it is like a… the whole body of the tree. So it is not cut. So it is like very original wood, like a tree which is put there as columns. So you have four steel columns and also the part of the roof, which is connected with this triangle part of the roof is steel for things. And the other part is made of wood. The important thing is the big scale, very big scale, that couldn't be house for example. And also it is placed on a garden, which is made of the square tiles, huge square tiles. Just remember it is frame structure, and it is four frames of triangle and square.

5-2-2

The thing to your remember is a scale. It is a very large scale. So you are very small in this area. The next thing… it is not solid space. It is a frame. It is built for very distinct frame. There is a repartition in that frame. So the frame is four cubes and four triangular elements above the cubes, almost domestic like a house. Remember the scale is very, very large. I mean in there you are very, you are quite insignificant. Within this frame, they also built a series of like a... It is a kind of semi-cut almost, so the series square is on the presentation, exhibition. That frames, two of them are steel, H sections, built in H section. So you have the H section creating the cube, and H section creating the triangle on the top. But the back two elements these are not steel, they are timber. And they are more organic like trees.

5-2-3

I imagine this building has been… just like a… you just see the frame of the building… you know like a real building. And it is formed like by cubes, but humongous cubes. So at this scale you are really very small, very, very small. So this construction is huge. And it is formed by tube of steel. So the frame is made of H prefab of steel. But between them, they are like panels of woods, very natural. On top of this kind of cubic frame structure, there are two triangles, like a shaping of the traditional house but very big. I suppose these triangles are also made by some kind of woods, natural material. But the rest is just this steel structure frame. That is what I imagine. This structure, as I remember is four squares, but is 3D I just presume it like four cubes, or eight cubes. But on top it has two triangles, just shaping like a normal house, very big. You are very, very, very small in there.

Group Five, Eastern Children

6-1-1

Four pillars in the middle… four posts, yep, draw four posts they go in forwards, into the picture. And then four posts next to it is the same way, in yellowish, brown colour, just brown or yellow something like that. And then on the top there are red triangles, like buildings. A half of the picture there is a line, but there is a back wall on the floor, there is line, and then the wall is like bricks, grey bricks, concrete grey bricks. And then the floor, it was tiles, square something…

6-1-2

It has four posts at the front, and there is some bricks in front of the posts, about three centimetres. There is a large triangle up on top of the cylinders, which the cylinders are brownish and yellowish. The triangular top is red. The cylinders are at the back and front, and draw three centimetres high bricks at the top. And the triangle at the top of

the cylinder, which is red, the triangle is. The cylinders are brownish, yellowish and reddish. And the bricks are just brick colour, which are three centimetre a bit bricks.

6-1-3

A ten quarter brick base. There are supports… supports are from front to back, dark yellow, dark yellow with brown. A triangular roof on the top of the supports. And entrance as well. The roof was red and a car outside. There are some windows. The car, blue…

6-1-4

The building has a brick base, which is sort of brown. It is got triangular roof. It is got a few windows. It is got a car next to it. The car is blue. The roof is red. And actual building is sort of yellow colour.

Group Six, Western Children

2-2-1

It is all the structure so it has not get more situate. It is in a dark chamber. There are four opposite columns, vertical columns. The four on the left hand side are metal and bright red. Four columns, red, metal and the screw thing. Sort of square rectangular columns. Four, all four red, on the line. Oppose parallel to the square columns there are sort of four columns, there are the cylinder columns, and they are wooden. You got proper wood like on the tree, like the trunk for tree. Then over each of the square columns, and grasped like another horizontal column on top. The one in the right hand side is wooden but that one is not a trunk thing it is like a wood cut each into right angle. It is a large cylinder goes over all four the vertical columns. And the same on the other side but that one is metal and red as well. Then, perpendicular to each column, there is another column joining the two opposite columns, it is like metal to the wooden one, that is all the thing. But half of the column is metal and then is crewed onto the wooden one. And the metal is obviously, the metal is red and on the side of the metal structure. And the wooden is on the side of woods. There is one joining each pair of the columns and there are all the same. And from either side of that horizontal joining the two of them columns there are two bars, like joining in the peak climb in your top of the house, that half of it this is the metal again and where joins to create a sort of triangle shape on the top. It is wooden on half, metal red, same for each column. That is same for each horizontal column. So that is the structure. Then the floor is passed square things, like tiles. And there is sort of clay colour, they looks like some sort of clay, square on the floor. Right at the bottom, in the fore wall, the walls are stony, grey stone. Ah the back wall, the back wall and side wall which is, the only one you can see at the right, those are stone wall and they got stone all around. But at the fore wall, at the bottom of the structure, there is a door, it is right behind the red columns. Oh the door, oh there is no door, that is like a hole, I think there was a door there but there is a corridor, all you can see is black. You just can tell that, a corridor, a way from that chamber. And then, on the bottom, close the floor at the either side of the corridor, there is a black heater, electrical, radiator. The black radiator at the either side of the off the corridor. It the rectangular radiator. Black, all black, it has two little round thing white on the side of each, which that is to the wall. There is light coming from the right. I see there is a window there but you can't see the window, you can just see you were. The wall continues, so out side the picture it might be a window that is lighten. Because you can see the light coming. So that is the place. Sort of bluish light on the floor. I got from that, the chambers, darkness.

2-2-2

In the left, it is like four columns. On the right hand side, there is another four columns, which is cylinders, which are wood, like the tree wood for that columns. And in between these columns, just like the bar, look like a bar thing but it like wood and metal, which is red. Then, it is like a roof, which is like normal shape roof thing, one side is wood one side is metal again. Red steel one on the left, then is another one. Behind these columns, it is like an

open doorway but it isn't a doorway, like a black corridor thing. And then on the floor, it is like the floor is like square, which is clay, clay colour. That is pink colour. Next the steel red column, this is like a wall which got a window, which is like light coming through somewhere, black wall. And then on the floor, it is like… under the tiles is like blue floor.

2-2-3

On the left hand side there is four red columns. On the right hand side there is four brown cylinders. Four. And between them it is a bar, half is red, half is brown. On the red, left, there is a mill hole way, like a door. And the floor, that is like pink tarnish, that is great tiles. On the right hand side, there is a black wall, there is a wall window which is let light through. Underneath the tiles it is like blue underneath it.

Sweet Heart Cottage

Group One, Eastern Non-professional

1-4-1

首先它整个的布景是在悬崖上, 然后左边的三分之二你可以规划为房子的一部分. 右边的三分之二是由桥和瀑布组成的. 应该算是山上. 然后左边三分之二是房子和通向房子的一条石路. 不是三分之二, 其实应该是五分之三, 然后右边的五分之二就是一座小桥, 然后底下就是瀑布. 就是桥下是瀑布. 就是水上面是座桥. 然后房子有两个屋顶, 就是一个比较大的房子吧, 有两个屋顶, 前面一个, 后面一个, 是蘑菇形的屋顶, 圆圆的, 不是三角形的, 前面一个, 后面一个. 然后上面有三个烟囱. 然后就是后面那个屋顶的底下是一个门. 它其实就有点像是两个房子, 但是其实是一个, 应该是一个. 然后前面那个屋顶底下是一扇很大的窗户. 然后窗户分四格, 一个大窗户分四格, 然后每个格有一个心形, 心的形状, 每个格上. 石路通向那个门. 后面那个屋顶下面是门, 就是说那个门在后面那个屋顶的底下, 不是在前面那个屋顶底下. 然后石路是通向那个门的. 否则人怎么进去呢? 蘑菇状的屋子… 也可以… 但是它那个屋顶没有那么大. 然后整个的色调就是那种… 等于是黄昏时候的那个景色. 所以整个的颜色有点桔黄色的那种感觉吧, 暗暗的, 就是黄昏时的那种颜色. 然后窗户框和门框可能颜色要深一些, 但不是黑色, 可能是棕色吧. 然后… 小桥, 流水, 房子…

1-4-2

基本格局是有两栋房子, 在一个山上. 然后山的一边… 左边以房子为主, 右边以一个瀑布和一个小桥为主. 桥下就是… 有瀑布流下来的水, 然后在桥下淌过的… 整体格式. 然后两栋建筑一前一后, 分为, 但这房子的整个结构是蘑菇形状的屋顶. 然后前面那栋房子呢… 前面那栋房子上你就要看到的是一个十字形的窗户, 窗户上有就是我们星星的那种花纹. 后面那个房子会看到是一扇门. 然后这两栋房子的屋顶有三个烟囱, 各有三个烟囱. 然后这两栋蘑菇形状的房子呢… 因为有一个… 后面那个不是有门的哪个嘛… 那么你还会看到门前面的一条小路, 通向了这个门. 这门是有一个通道. 整个颜色是基于黄昏的颜色, 所以整个背景色会比较黄色一点, 就是这种桔黄色或者橙色, 黄昏色的那种颜色. 就是整个布局就是左边是房子, 右边是桥. 左边的房子的话就是两栋房子, 一前一后, 两个蘑菇形状的房子. 屋顶都有三个烟囱, 第一个蘑菇形状的房子带着一扇窗户, 十字形状的, 然后窗户上有花纹. 第二座房子呢… 会看到一扇门, 门前有一条小路, 就是石子路, 或者就… 什么路吧反正就连在一起. 大概就是黄昏色的背景.

1-4-3

大概就是有一个像小山坡这样的东西, 然后上面有两个蘑菇形的房顶的建筑. 然后那两个房子的房顶都有三个烟囱. 然后前面那个房子上面看的到一个十字形的窗户. 然后后面有一个… 后面那个房子就有一个门, 然后门前有一条小路. 然后那个山的右边有一座桥, 跨过一个像… 像小溪吧那种东西. 然后… 就是房子的右边, 大概那个方向… 就是从瀑布上流下来的水经过那座桥嘛, 就那个桥跨过那个… 那个水从桥底流过. 然后色彩方面大概就是黄昏那样的时间, 然后大概就那样的颜色. 整个色彩是黄昏色. 就是有一个瀑布

在流水，然后水经过那个桥，从桥底下流过.

Group Two, Eastern Professional

3-1-1

这幅画描述的一幅场景是一个山里面的一个黄昏或者早上．它就是形容一种比较朦胧的一种感觉．它的场景是有两间山间的一个小屋.在这个小屋门前有一条小溪流.这个小溪流在小屋的正对口,就是小屋正对着这个溪流的位置有一个桥,拱桥,可以到达小溪的对面.这个小溪接近画的方向，就是接近画的下面的这个方向它是一个小的,一个类似于瀑布的东西．整个水汽，整个是云雾缭绕… 小溪的下游有瀑布，等于小溪是垂直于这幅画下来的．然后这个建筑坐落在小溪的左侧．也就是说这个小溪是从山上下来的.它会形成一种坡，有坡… 然后在画的下面会形成一个小的瀑布．像一个中国画里面叫涧的感觉.但是没有那么陡了,有那么一个坡度而已．然后把水汽激荡起来就形成云雾缭绕的感觉．沿着这个小瀑布的左侧有好多踏步．建筑物在左侧画的中间的位置．然后沿着溪流的左侧有一些踏步就可以通到这个建筑的入口处．而且这个建筑的主入口是面向溪流的，不是面向画的外面，就相当于面向右侧．然后在主入口的对面有一座桥，桥的那面是山里面的树，松树，柏树那种感觉,朦朦胧胧的感觉．然后画的上部分是一种偏紫色，偏暖色的一种黄昏场景．紫色，黄色，黄昏的场景．然后我刚才形容的在左下角那一块有好多踏步往上走，相当于山间踏步往上走的那种踏步．在踏步的左侧又有一些路灯，小的地灯，比较有规律的排在山路的旁边．然后在地灯的左下端口，怎么形容… 应该是左边是一些踏步，在左侧踏步起始的地方有一个稍微高起来的路灯，等于在最左下角有一个路灯，然后慢慢慢慢往右上角走有一些小的地灯．然后这个路灯上面好像还有一颗心．这个心不是一个真的心，它是一个心脏形的东西，看着还比较温暖，比较有家的感觉．然后整个周围，远处的山林,树林有郁郁葱葱的感觉，但是又很朦胧．基本就是这样．就是一个山林深处，相当于山谷的地方，从山谷的上游落下来一个水，在水的左侧是两间房，门口是一个小拱桥，到山涧的那一边,然后沿着山涧的左侧有一些踏步，有一些小的地灯，然后在地灯的端头有一个高起来的路灯，大致的场景就是这样．然后这个房间里面，侧墙，山墙上面还有一些窗户，窗户上面可以隐隐约约透出一些家里面黄色的光．然后整个色调就是暖色调．在山谷的端头那边还能看出远远有一个太阳或者月亮的东西，反正是个黄颜色的一个，不知道什么东西的一个东西．整个渲染了一个气氛，暖色调的气氛.

3-1-2

这个场景是在一个山里头，然后是那种烟雾袅袅，云雾缭绕，黄昏，夕阳余辉的感觉时候．然后山上有两栋房子，然后房子前面有一条小溪，然后…… 房子就在山上，然后树林里呀！然后就是……就我刚才讲的气氛．然后有两栋房子在一起．然后房子的前面有一条小溪流过．然后房子的主要大门跨出来就是接着一个拱桥，可以越过那个小溪．那在小溪的另外一侧有一个瀑布，就是它有……它在山谷嘛，它在山上然后有一个瀑布，有一个高低落差这样，就是在房子的正面那一侧，就是主要的门出来，面对的是小溪流，还有一个拱桥跨越小溪．然后会有个瀑布，从小溪流下山谷这样．然后这个房子，从房子的窗户里头可以透出温暖的光，就是说觉的室内是很温暖，有光芒，温暖的光芒．然后这个正门，房子的正门并不是直接接拱桥，是说拱桥跨过溪流，然后有阶梯，有好几节阶梯慢慢的往上爬，然后才接到那个房子的入口．就是从阶梯接拱桥的最底下呢，会有一个路灯，有个路灯，在阶梯的左侧，有个路灯．然后那个路灯呢……就是路灯的造型是有点象心形这样子，然后会发出光芒，就是晕开的光芒，很温暖这样子．然后接着阶梯往上爬呢，左右两侧都有那个小的，小灯，就是脚边的那种灯，矮灯，就是照亮那个阶梯，然后接着就一直延伸到，阶梯就一直延伸到建筑物的主入口，是大门这样子．那这整个背景的气氛就是，房子盖在山里嘛，那周围就都是树林啊，可能针叶树林，松树什么之类的．然后时刻是那个，夕阳余辉的时刻．所以你会感觉到那个，有夕阳的光辉，光芒照耀这那个房子跟树林．然后同时又有…… 两个小屋．所以你就想象小屋是在那个山里头，树林包围里头，然后山谷里头，然后门前就是有溪谷的感觉．那当然越过溪谷的另外一边同样还是那种树林，就是针叶林的感觉．应该就这样吧，两栋山间小屋这样.

3-1-3

想象一个场景，就是在山谷里面，这个山谷里面就是云烟袅袅哇，绿意盎然．那么在山谷中间呢，有两栋房子．这房子，什么形态可以想象一下，那它… 这房子前面它有一条河．那么这条河跟这房子中间的连接是石阶梯．是有阶梯的,才会到那个河边，那河边上面有一座拱桥，那拱桥再过去有一些流水，瀑布之类，就是在那个河的对岸这样子．然后，好，在河的…河岸边就是有一盏路灯．那这石阶梯呢也有那种小路灯一直延续到房子的附近．好！然后… 因为山谷嘛，所以它的背景都是比较… 就是松树的那种感觉．这个山谷，是比较… 它在那个屋子的附近的背景是比较…松树…苍松林立呀的感觉．然后那个天空的状况是比较接近黄昏的．屋子本身… 没有哎，就是说这个，就是说没有什么很具体的轮廓,所以你可以… 我是根据之前的… 所以你可以想象一下这样子．说在山谷里面的房子大概会是什么样子，两栋房子．对对… 就有点像与世隔绝的感觉.

Group Three, Western Non-professional

4-4-1

Great! Sitting first. It is in a woods. It is surrounded by trees. There is a river, a river going through. This woods is quite big, river… that sort of… very misty in the background, but the sun… the sun try to break through the mist, all very colourful sort of mist, sort of earlier in the morning. Maybe, and the sun is just starting to rise to go to colour of the morning. It really runs in the hard woods, it is very, very dense on both sides. The house is on one side, the river through the other side just lots of trees. So still the sitting. Ok the house, so on the left side, looking in the page it is the left side, is a house, I think it is the T shape. But the top of the T is very small; the left half of the T is hidden in the trees. The bottom of the T is towards you, coming towards you. There are some steps, some stone steps, very wide steps with the rail, is leading up to the right hand side of the T of the house, passing along the long bottom of the T to the top, to the cross, the right hand side of the… the path… is like a step actually, it is like a concrete, no, not concrete, is stone steps, and then they lead up to a door, and the door is on the top of the T, the cross of the T, on the right. Ok following the river along, the river is through on the middle, and path is going on next to it. This actually running on parallel to it, it is got rail. The door… the house, on the cross bar of the T, so it is the path leads out to, and there is a door, is a wooden door, it is got small window on the top a bit, with light, a lot of yellow light streaming out of it. That is all the wooden door with a sort of big sliding latch… on the right… so if you draw a T shape, on the right hand side of the top of it. So if you looking at it, draw a T, you looking towards the T, on three dimension of the T. it is very short T, very pressed T, this is actually some sort of vague shape of the house, and on the right hand, not on the very edge, if you looking at from the bottom, the right hand… looks like a three dimension T. I think the most important thing is the path leading up to the door, the door is wood, it got big bolt sliding back and forwards. And it is got little window, the light pouring through. Now on the bottom part of the T, there is a window, and there is light streaming out, almost like inside there is warm fire. It is like the bottom, the tiny bit of the T. you got the cross of the T, the T is comes down, on the bottom, it is like… slight bottom of the house, there is window on it. Now more important thing, the roof is… there are three chimneys on the roof and smoke pouring out form the chimney. The house is made by sort of reddish bricks. They are quite old, potentially you look character to them. And the roof is … on the wall, if you looking in from the front space through into the roof, is a lot of stones around the roof. Yes there are a lot of stone… It is triangular roof, right, and the edge of the triangle there is large amount stone, grey stone. It all like a country cottage, it is a country cottage, in the middle of the woods. That is all the place, you know, you quite like country house. The T… I think, it is very small T… like… the cross of the T is very short compared with the length of it. So important things, important features of the house is, surrounded by woods, in through the river, there are a lot of flowers, also some colourful sort of pinky moon flowers, scattered around. Lots of flowers. In the middle of the forest. It is not really in the clear, in the really dense… in the right next to the river. The house is right through the… so then the stone steps

going up. One more thing I tell you, stone steps going up to the door, which is a wooden door with big size, such clear on the top of the door, there is a small window, the lights pouring through. The step is following the edge of the river. At the bottom of the step it is like a sign… pole running up, a cross bar crosses on the top, and a small heart hanging down, pink heart, I assure that that heart has the name of the house on it, at the bottom of the steps. Basically, it is really misty, and it is like sort of wavy colour. It is quite luxury thing. One another important feature, if you carry on this distance, more or less far, just onto the door, just off the T, there is a bridge goes cross the river, that is a curved bridge, made by wood, just an old wooden bridge. I think there are lights… inside… to there a little bit. And all along the path, there are lights as well. I think that is all the main things. You got triangular roof on the house. And then you stake three chimneys on it. but basically I think to a plan, about the T is in a little woods. There is lots of lights coming out the window which in the front of the T, that is warm. I think that is warm glowing fire in there. That is the glowing coming out. There are sort of cooking there, roast dinner. It is morning, isn't it? So maybe they having porridge for their breakfast, more in going.

4-4-2

The sitting is the first thing. So it is sunny morning, but it is very, very misty. You got blue sky with misty, with sunny, so like beginning of the morning. There are a lot of trees around. The sun is coming in through the trees against the sky. There is a river, going through the cross of the page. And there is a house located above the river, and it is T shaped. T, like a T, the house. Going up to one of the crosses of the T, it is a stone path, like staircase. Located on the river, it is a bridge. So the bridge is going over the river. The T shape, it is a block T, the house is the T shape, vertically. That is going up from the river. One side of the T is covered by trees. But there is light coming in the direction of the house. The stone wall is coming from the roof. It is actual stone wall, not brick. All the T is going to be covered by roof. There is stone wall coming down from the roof. Two windows locate in the back. Don't put too much emphasis on the T, but the detail, I am struggling to remember… it is sort of… just like a typical wood sitting. The house… no wood, it is a wood sitting. It is located in the wood. Someone cooking in the window, I mean he is on cooking pork joint. The roof… I don't know, just a roof, but I think there is any windows or skylight. There is some plants coming from somewhere, but I don't know where they go.

4-4-3

The surrounding is trees, trees and trees, very misty the sun going through the trees. There is a river crossing the picture. And the house is just somehow close the river someway. You got some bridge crossing the river. The house has a T shape, vertically, not horizontally, just vertically T shape. And you have a roof… you have a window someone cooking, I guess someone cooking inside the room. Lots of plants, the whole thing is really in middle of the trees, kind of forest atmosphere. It is a blue day but very misty. There is a lot of windows, but through one window there is someone cooking. There is a bridge, we get a little bridge over the river, and also stones, there are lots of plants, but I really don't know where… apart from the trees, and misty, some section of the atmosphere. So the river crosses the picture and you get lots of trees there. That is kind of taking over the picture. And the T shape… misty… the whole atmosphere… sun going through the trees… very misty atmosphere cross the river…

Group Four, Western Professional

5-3-1

Do you know a fairy tale, something like, you know, Shrek or something else like that. That is we gonna think about. So this is a view… on the end of the building where are two gables, two gable lines, in brick, and thatch, sense something is very like a little cottage, very vernaculars. It is got… ok… just setting around the building, it is like two pine trees, and a river with the… like in a valley. There is a waterfall coming down on the right hand side, about half way, the waterfall starts where the building… the end of the building is. On the left hand side there are

smaller trees with pink right leaves. And so there is a path leads you into that building. The path goes up, around the waterfall and in the distance, like where the sort of the garden will be behind the building. There is a bridge, a curve bridge taking off to the other side of the bank. There are chimneys. So each gable has a chimney, which has a little fabulous smoke, a little sort of weak smoke coming out. So the second gable behind the first one is set back a little bit to the right, as your right, as you looking. And there is a door, with an arched top to it. It is just like off set, same proportion as the first. There is an off set, and a little higher. And there is a heart engraved into the door and this thatch. There is a heart, like in printed in the thatch. The thatch is over hanging… you know what is thatch, it is like a twigs, is like a roof, is made of from lots of wood, so you see around it is very old fashion way doing a roof, very sort of thick. So on the gable line they look very thick. And into that it describes a heart. It all quite rustic and fairy tale, magical, romantic. And there is the window, there is window on that gable line. There are two windows, one slightly moves on the above, the main one. It is all misty, all kind of misty… quite misty area, enchanting, but it is a little bit soapy. It is not my taste.

5-3-2

You are going to think a fantasy world, like a fairy tale, legendary world. You see in the very green woody place, a pair of cottages, very… kind of traditional cottages like for dwarves. One is behind the other, so you can see mainly the front one, but the other you can see behind. At the entrance it gets a… like… small structure doing that roof, that kind of roof with wood and twigs. That entrance facade has two windows. One is a little bit bigger than the other. And in the roof, these cottages have chimneys, with small part of smoke going out. At the right of the image you can see a couple of pine woods, pine trees, big… I don't know. And at the left, you see another tree with pink flowers and pink leaves. From the first cottage, the one that is in front, there is a path goes out, goes to the grass trees. Valley, it is kind of valley. And the place is misty. And on the right, you can see a stream or a river, and it is coming and beside these cottages there is a waterfall. And beyond the second cottage you can see in the river an arched bridge cross this river.

5-3-3

You got to imagine a fairy tale world, a kind of fantasy world almost. And it is a pine forest setting, you got pine trees, the forest… forest setting. There are two cottages, one is in foreground, one is behind you can only part of it. They are very, very small cottages, imagining for almost like dwarf, you remember in fairy tale world. Two cottages… one against each other. First cottage, the foreground cottage has a kind of small door, two windows, and a covering over the door, timber covering over the door. On the roofs, they got chimneys with smoke coming out. Again, very fairy tale like… they got winding path, coming across the grass to the cottage. To the right of the cottages, there is a pine forest. There are pine trees, quite large pine trees hanging over there. Into the left, there is a tree with pink flowers. Also to the right, it is a stream, a small kind of bubbling brook almost, with a little waterfall. There is one cottage in front the other cottage, you can see the cottage in the background only half insight. They got chimneys with smoke coming out, they are a kind of fairy tale.

Group Five, Eastern Children

6-3-1

To the right draw a stream with a small waterfall. And at the left stop of the stream draw stairs with a light on every two. Draw a building on top of the stair but leave little gap between the building and the stream, do this by drawing a cube with a triangular roof, on top of the stairs. But leave a gap between the building and the stream. Then draw a window similar to once found in the church on the face of the building. And behind it, draw a rectangular building, well, a longer building, longer but shorter building, also with triangular roof. Then draw three chimneys on tops of the both building but not each. Then draw the entrance, draw the door on the right hand side

of the longer building. make sure the two buildings are not separated and are joining with each other. And then draw trees around it. Draw boreal trees around… yes, that is it. Colour! The house it self is made of brick, so it is brown, the roof is grey. The cathedral… window is yellowish. And the tree… of course.

6-3-2

There is on the right, it is a waterfall with a stream flowing out bit. Waterfall with stream… going into stream. And then where the stream finish there are some steps going upwards. Do you know the steps coming from the stream, up from the stream? Going up from the stream. And then I think every two steps there was a light, on the steps. Right! Waterfall… and a stream flowing down it… and then they goes into a big kind of stream, river thing… and then it goes up to steps… and then on the second step, there is a light, at the end of the stream, there is steps. And then there are some chimneys. There is a house on the top of the steps. There is a house up to the steps. And there is a window but that is a church's window, and then the triangular roof, and there are chimneys on it. One window. There is chimney. Draw a house next to it connecting to the first one and it is a little bit rectangular. That is the base. And then… another triangular roof… with two chimneys… so it is still triangular. Now to the right of the house, the base, the flat of the house, there is a door. The second house, there is a door to the right. And there are some trees surrounding yet. And then, right the colours, the waterfall and trees are just like normal waterfall and trees. And then the house, the first house's window is yellow, and then the second house is like bricks, so is brown. And the roofs on both of them are grey. The steps… grey, brown… yes, brown…

6-3-3

Well, on the right of the page, there is a fountain. And on the fountain it sought like… in the fountain it sought like a stream. And that leads to… it is like a stream on the fountain. And then there is another stream coming out the bottom of the fountain. There is a house next to the fountain. And the house has a pointed roof. It has sort of like… you know churches, you know the window on the churches… it is got a window like that, and it doesn't have a door. There is a chimney. Connected to the house it is another house, this has no window with a door. The roof is pointed, with two chimneys. Next to the house are some trees. And that is it.

6-3-4

There is a fountain. And the water are going into a river. That goes into the middle of the page. And next to the river there is a house with pointed roof. The roof is red. There is only church window no houses. And next that building there is another house, no window on the same point and it is still there but it is just a house. The door colour is brownish. And there are two chimneys the one that only has the door. And one chimney at the one only with the windows.

Group Six, Western Children

2-4-1

There being top left hand or middle over the left hand side like a cottage, the cottage shape. The roof is blue, that body is like brown. And on the middle there is a love heart on it. The colour is a bit blue, a bit lighter. The door on that is a little orange a little bit golden. It is like the golden. So there is another cottage. It is like a cottage but it is like, a little bit like a wall way, it is like a door, that is attached. It is a little grey thing off the door on. That is all bluish as well. Do you know go to the door there is some stairs getting down to the stream. Going down, which got a lot of flowers going where, lots of flowers on land. In the background it is like ladder lead to bridge. Not a ladder, and… the stream goes like down stop like one of the black bridge down to some kind of ladder, means stairs. And the stream is like blue. And then behind the house, it is like lots of trees, it is like what you get forest. On the top of the bridge it is like a little birds, it is hovering. Right, do you know where is the ladders, the stairs. Right it is like a bridge over in there in the background. It is like a curve bridge, through it you get into forest. The birds colour is

black. Just like tiny points on it. I think it is a bird. And then the land is lots, lots, lots of flowers, flowers everywhere. The sky is red and blue, and the trees are just green. The sky fills like big clouds. The forest… the sky, red and blue. Yes, there are rocks stay on the water. Some orange things are on the rocks, orange that was. The sky is red and blue. The red is on the bottom, the blue on the top. There is pink yet in the colour.

2-4-2

Well, about in the middle of the left hand side there is like a cottage, but don't just draw a cottage, it is like a cottage with another like new cube attach to it, with two little triangle roofs, which are blue, on the rest thing is brown. And at the big, like the main part of the cottage, on top of that little roof there is like a love heart, blue as well, just like plenty of blue. You know in the triangle, In the middle of the triangle roof, on the roof, there is like a love heart, paint on it, like blue as well. And then, in the other little cube there is a door. Then just from the door there is like some steps leading to the stream. But the stream doesn't go all the way cross the page. It is like start from one end of the page and goes down like about the middle. And under the step there is like a little bridge. The steps lead to like a little bridge that goes across the little river, the stream. And around the stream there is like rocks. Over the rocks next the bridge there is an orange dot. And then, the roof of the little one is blue as well. Behind the cottage and behind the whole of the page, it is like a mountain, like a little hill that goes down to the stream. And behind the cottage there is like trees, like in woods. But do space for the sky because the sky is red underneath and blue over that. What mountain? No! It is, the cottage is on the hill! And then, so forget about the hill, there is like a black thing, hovering over the, that like a bird, a black bird, hovering over the bridge. And there is, you know the rest of the hill like a little bit going down onto the stream, and all the rest you should have empty. There is flowers, all around. Or you can just do like Paige suggest one big flower. Or at least big flowers. Well it is not a house, it is a cottage. It is like say a cube. It is brown, doesn't has any windows, excepted for the door that is on the other little cube, and the roof is blue with a love heart that is light blue in the middle of the roof of the extra cottage that one doesn't have a door. The door is jut like an oval thing. Well I draw it as oval, where is like under brown. So I expect it is kind of wood. The steps, they are like little brown thing, just like brown sticks going down, grow bigger because it is like forest…. and they have a round about brown…. And then you have to leave space for the sky, because the sky is like red underneath and goes to blue. And that is it. The flowers colours are pinks, two yellow, two red. The forest goes over across the page, yes, all over. It is not a river, stream. I already explain it go from…. There is no river, it is a stream. That means it like a real thing. I already said that it doesn't all cross the page, it starts form like the left hand side and it is like goes down about in the middle of the page. The sky, is kind of pink to red by the way. Well it is the underneath is paint to red and goes on to blue.

2-4-3

And well, on the right hand side of the page more or less in the middle there is a cottage, a brown cottage with blue roof. In the triangle of the roof of the front there is a heart, draw it. A heart, in light tone to blue. And there is a like second block attached to a cottage, which is jut like a smaller of this cottage. It is like without the heart. The cottage is just plain, nothing in it, except for a little wooden door with a yellow handle in the cube touch. All of this back, there is like a land of trees, forests on it, like kinds of staff of that, different tones of green. But above the trees there is sky, red… about up the top is blue, at the bottom is any sort of mix into the blue. The roof being both of these of the cottages, like on the big on the small blocks they are both blue and a sort of triangle. From the door of the block touch the cottage there is some steps that go down onto bridge, a little bridge that crosses a stream that one only cross half of the page. It is like a clear stream. And in the side of it there are little stones, and one stone of the top left hand corner near the bridge has an orange dot. There are some birds, black birds hovering over the little bridge. And all cross the left hand side of the page, there is like great field of flowers, all red, red and yellow, reddish colour, pink. And a suggestion from the Paige, just draw just a big great flower, which I didn't follow. Like all ready colours, pink, yellow, orange, red.

The Auxiliary Test

Professional

我们现在要描述的是一座凉亭. 那它坐落在一个年代很久远的石壁的悬崖上. 先说一下周围环境好了. 它有一侧是陡峭的岩壁. 然后其他的三个面是由很天然的石头错乱的堆砌而成. 那它有许多石块石板,方面除了造景之外, 它还堆砌出蜿蜒的小径, 那从四个方向都可以慢慢, 蜿蜒步行到凉亭上来. 那这个凉亭地处的位置很高, 就是基本上那些乱石堆成的小径是比较陡峭的. 周围就是有一些植物啊, 造景之类. 然后至于这个凉亭呢, 它是大概 3.5 公尺乘以 3.5 公尺见方的一个正方型的凉亭. 然后这个凉亭它大致的造型就是底下有大概 90 公分高的石墙为基座, 然后以上就是木造的构架. 就是, 它是一个正方形的凉亭, 然后木造构架大概上来有一个双层式的屋顶. 那它… 这凉亭很有特色的就是它那个屋顶. 它的下层屋顶是曲线朝上的, 有点类似上弦月的曲线, 然后四面朝上. 然后顶上盖了一个碗在它上头成为第二层上层的屋顶, 然后那个上层屋顶的曲线就是朝下的, 像一个碗罩一样. 那它那个四面矮的石墙上头就是木造的构架,然后有一面是封闭的. 面向最陡峭的石壁那一面是木材质的墙给封住, 然后就是漆上白色的油漆. 那另外三个面有两个面是… 左右两个面是由木框隔出六个窗户. 那窗户也分为上下两层, 就是上层比较小, 下层大概是上层窗户的两倍大. 面对着封闭墙的另外一面就是有一个… 除了左右各有两道窗户之外, 中间就是框出一个木门. 然后同样都是木造, 然后白色的,漆上白色油漆. 关于屋顶的材质, 它是木片, 由薄木片拼凑起来, 做成屋顶这样子. 凉亭里头基本是空的, 没有摆任何的座椅或什么的, 但是在凉亭里头视野很好, 可以看到山坡下的景色. 这整个凉亭造型很古典, 就是它的屋檐… 你很清楚看到它的屋檐和墙的接缝处是有木构架的一些细节, 就是有一段一段木构架的细节.

Non-professional

The building is a square building. It is about six… may be eight by eight foot square. The door of the building is facing towards the north. It is situated on the top of a mount, which is surrounded by… which… it is made of lots of rocks, it in fact is a rock way. it is that situated on the top of the rock way. And there are many plants and trees around. The building, the bottom section of the square building is made of natural rectangular sands stone bricks, very rough coarse bricks. They are probably twice size of the standard bricks, or maybe slightly bigger. They are quite big blocks. It is quite higgledy-piggledy… it got very rough coarse texture actually when you hand over it. And above the bottom section which… it stands almost waist-height above the ground. The building then comes to wood, and is painting white. The back face, which is facing south, is the solid white wooden slides, which are… vertical… in vertical section. So you got a series of slides… it is the back, so completely solid. The sides, in the fronts, are made of the grid structure, which are windows frames without glass. The bottom part is rectangular, large rectangles. On the east side and west side, I think there are six of these rectangles one after the other. So, next with each other, it is like six window frames without glass. Above these large long rectangular panels, there are smaller rectangular panels, six, which are directly above each of these longer panels. And these are… I am now bringing you to the top of the building. And you don't have as a small rim or an overhang rather roof, where the panels meets the roof, and there is the small overhang. And all around the overhang, every few inches there are small decorated features, which are… just small curves… they are almost like supporting beams for the roof. But they got decorated curves. The front of the building is same sort of window frame structure. But there is a door which is on the central. And it is sort of standard door you get on the house. But the house doesn't actually get the door, and it is just a hole. The roof… curved roof. The best way I can describe it maybe be… it is almost like a bee hive, one section of the bee hive. Ok image that… image you have to make a chimney, or something… no… image

you have a pot, a flower pot, just like that thing you got plant in, and you got another pot, and you took the first pot… you put the right way around, and you place one on the other. So then you will get the curve of the pot, and suddenly, there will be a… there will be a going into another pot. So that is all the shape just like the curved, flat so, curve down like going down the other side of the other pot, and you have another pot underneath. So it is like a taper structure. I think that is the curve take the structure centralized a dome of the building. Yes, that is a wrong building, they should put the blind flat panel on the other side, and they should have sun… south facing, because on the moment, so we don't sham, nobody ever use it. So I think the university actually need redesign the building, so is actually sun inside. And they should put furniture as well; it is only the concrete floor. And it is very plain inside.

Children

Well. I thought it was an amazing place. Much more than… when you start looking onto it from all the different sides with all the different features on the area, much more than what you think these features comes looked at… just glance sight it. There is a small square monument building. It is built on brick base. Then it rises with the white painted wooden board. There is a wall on the back. And that wall faces cliff. The cliff… faces to the place on that way. You cannot see it from the place. You can just see it when you are coming from the other side. It is all covered in plants, all different sorts around it. There is little interlocking path. That is taken it two ways around the all… basically around the place. And then, there are a lot of rectangular windows on the all the two sides and on side of the door, which is the one opposite to the wooden wall. The all the wood oppose to this point… the point of the ceiling, is painted in white. And then the ceiling rises in tiny plates like scales, all wooden… wooden colored little tiles, that goes up and then out again and up like a little shape from mushroom. The floor is just stone… not actually stone, but stone tiles. And then as you face out from the door, there is a little path from the grass land, and plants, and there is a pool full of water. There is a lot of trees around, quite couple of trees around, many have been cut down, and you can see them cut, so that you can see the building, the actual building unless… Lots of trees with green leaves above the building and the fence… a wide fence to protect anyone from falling off the cliff, but that is on the back of the building where you can't see really the fence because of the wooden wall of the building, which has got no windows. And then if you face outward, not in the forest, that is to the left of the building, but out the forest, large plain of grass and the road that fronts by. And beyond the road there are more grass and more trees and more… then if you look to the other side of the road but further around you can see the city or the town; you can see houses and more buildings. Then there is very bush forest to the other side, with lots of ivy pulling over the place and then trees rise on… It is all built up to emphasize the building if you looking at it from the grass. It is sort of in the hill. The hill has got all the little paths lead to it. And there is a lot of plants around, vegetation of different sorts.

Bibliography:

Books and Papers:

1. Alexander, Christopher., Ishikawa, Sara., Silverstein, Murray., with Jacobson, Max., Fiksdahl-king, Ingrid., Angel, Shlomo., *A Pattern Language, Towns Buildings Construction* (New York, Oxford University Press, 1977),

2. Alexander, Christopher. *The Nature Of Order, An Essay on the Art of Building and the Nature of the Universe, Book One, The Phenomenon of Life*, (The Center for Environment Structure, California, 2002)

3. Alighieri, Dante.; with Illustrations by Gustave Doré, Translated by Henry W. Longfellow, *Divine Comedy, Hell – Purgatory – Paradise*, (London, Arcturus Publishing Limited, 2007),

4. Amelar, Sarah., 'F-2 House', *Architectural Record*, Apr., 2002, Vol. 190, Issue 4,

5. Architekturabteilung HTA Luzern, Prof. Ulrich Pfammatter, Betreuer: Christian Fierz, Mathias Frey, Armando Meletta, Urs Rieder, Lehrstuhl für Gebäudelehre und Produktentwicklung TU München, Prof. Richard Horden, Betreuer: Lydia Haack, Walter Klasz, Tragwerksplaner: Joseph Schwartz, HTA Luzern, 'Peak_Lab Research Station', *Detail*, 2004, Dec.,

6. Augenbroe, Godfried.; Malkawi, Ali M. and Wilde, Pieter de., 'A Performance-Based Language for Design Analysis Dialogues', *Journal of Architectural and Planning Research*, 2004, Vol. 21, No. 4, Winter,

7. Bachelard, Gaston. *The Poetics of Space, the Classic Look at How We Experience Intimate Places*, Translated from the French by Maria Jolas (Boston, Beacon Press, 1994),

8. Barthes, Roland. Translated from the French by Annette Lavers and Colin Smith, *Elements of Semiology* (London, Thirty Bedford Square, Jonathan Cape, 1967),

9. Barthes, Roland. Translated by Richard Howard, *The Eiffel Tower and Other Mythologies*, (London, University of California Press, 1997),

10. Barthes, Roland. Selected and Translated fro the French by Annette Lavers, *Mythologies*, (Vintage, 2000)'

11. Bennett, Paul. 'The Language of Landscape', *Landscape Architecture*, Vol. 89, No. 5, 1999, May

12. Bonta, Juan Pablo. *Architecture and Its Interpretation, a Study of Expressive System in Architecture*, (Lund Humphries London, 1979),

13. General Editor: Burenhult, Göran., *The Illustrated History of Humankind, People of the Past, The Epic Story of human Origins and Development* (San Francisco, Fog City Press, 2004),

14. General Editor: Black, Jeremy., *World History Atlas, Second Edition* (London, DK, 2005),

15. Blackler, Zoe. "CIC Reveals New Design 'Language'", *architects' Journal*, Vol. 216, No. 2, 2002, July 11,

16. Bobic, Miloš., 'A Timeless Pattern Language: On the Translation of a Pattern Language', *Archis*, 1996, No.7, Jul.,

17. Boddington, Anne., 'The Remaindered Landscape, Post-urban Esperanto, a Language of Transgression', *Architecture design*, 1998, Vol. 68, No.1-2, Jan. Feb.,

18. Bowring, Jacky., 'Land as Text', *Landscape Journal*, Spring, 1997, Vol. 16, Issue 1,

19. Broadbent, Geoffrey., Bunt, Richard., Jencks, Charles. *Signs, Symbols, and Architecture*, (Chichester, John Wiley & Sons, 1980),

20. Broadbent, Geoffrey., 'Alexander's Pattern Language', *AAQ*, 1979, Vol. 11, No. 4,

21. Brown, Nancy Clark. 'Aesthetic Composition and the Language of Light, a Subject of Academic Inquiry'. *Journal of Interior Design*, Volume: 30-3. (2004)

22. Çagdas, Gülen. 'A Shape Grammar Model for Designing Row-Houses'. *Design Studies*, 17 (1996),

23. Çagdas, Gülen. 'A Shape Grammar: the Language of Traditional Turkish Houses, the similar schemata of traditional Turkish houses'. *Environment and Planning B*., Vol. 23, No. 4, Jul. (1996),

24. Calvino, Italo. *Invisible Cities,* Translated from the Italian by William Weaver (London, Vintage, 1997),

25. Chappell, Sally A. Kitt. 'Cahokia: The Symbolic Language of Landscape Architecture'. *Landscape Architecture*, Vol. 93, No. 5, May, (2003),

26. Consultants: Cooke, Fred., Dingle, Hugh., Hutchinson, Stephen., McKay,

George., Schodde, Richard., Tait, Noel., Vogt, Richard. *The Encyclopaedia of Animals, A Complete Visual Guide* (San Francisco, Fog City Press, 2004),

27. Editor by Cruickshank, Dan., *Sir Banister Fletcher's A History of Architecture, Twentieth Edition* (Oxford, Architectural Press, 1996),

28. Cullen, Gordon. *The Concise Townscape. The Fifth Impression* (London, The architectural Press, 1968),

29. Curl, James S., *Oxford Dictionary of Architecture*, (Oxford University Press, 1999),

30. Dooley, Mark., Kavanagh, Liam. *The Philosophy of Derrida*, (Acumen, 2007),

31. Dovey, Kimberly. 'The Pattern Language and Its Enemies'. *Design Studies*, Vol. 1990 11, No. 1, Jan. (1990),

32. Duany, Andres. 'A Common Language of Urban Design', *Places*, 1998, Vol. 11, No. 3, Winter,

33. Dülgeroglu-Yüksel, Yurdanur. 'The Language of Walls in the Traditional Turkish Houses', *Open House International*, 2002, Vol. 27, No. 1, March,

34. Eisenman, Peter. *Eisenman Inside Out, Selected Writings 1963-1988,* (New Haven and London, Yale University Press, 2004),

35. Ellin, Nan., *Postmodern Urbanism, Revised* Edition (New York, Princeton Architectural Press, 1999),

36. With a Preface by Evers, Bernd., *Architectural Theory, from the Renaissance to the Present*, (London, Taschen, 2006),

37. French, Leanne B., 'George Yu Creates a Language of Versatile Components Tofashion MaxStudio.Com Stores Across the Country', *Architectural Record*, Feb. 2004, Vol. 192, Issue 2,

38. Forty, Adrian. *Words and Buildings, a Vocabulary of Modern Architecture* (London, Thames & Hudson Ltd, 2000),

39. Fu Xinian, *The Study on the Chinese Ancient City Planning, Architecture Layout and Design Methods* (BeiJing, China Architecture & Building Press, 2001),

40. Gandelsonas, Mario., 'From Structure to Subject: the Formation of an Architectural Language', *Oppositions*, 1979, No. 17, Summer,

41. Gelernter, Mark. 'Christopher Alexander and Pattern Language'. *Architects'*

Journal, Vol. 177, No. 1, Jan. 5, (1983),

42. Geoffrey & Susan Jellicoe, *The Landscape of Man, Shaping the Environment from Prehistory to the Present Day*, (London, Thames & Hudson, 1975);

43. Edited by Gottdiener, Mark.; Boklund-Lagopoulou. Karin.; Lagopoulos, Alexandros Ph.; Semiotics, Volumes I, II, III, IV, (London, SAGE Publications, 2003)'

44. Graves, Michael. 'A Case for Figurative Architecture' in K. V. Wheeler, P. Arnell, T. Bickford, ed., *Michael Graves Buildings and Projects 1966-1981* (London, The Architectural Press Ltd., 1983),

45. Harley, Trevor A., The *Psychology of Language, from Data to Theory*, (New York, Taylor & Francis Inc. 2001),

46. Hale, Jonathan A., *Building Ideas, an Introduction to Architectural Theory*, (John Wiley & Sons Ltd, 2000),

47. Hammatt, Heather. 'ASLA, Constructing a Language of Gardens, Taking a Meaningful Journey through the Landscapes of Julie Moir Messervy'. *Landscape Architecture*, Vol. 94, No. 2, Feb. (2004),

48. Hancock, Claire. 'Your City does not Speak My Language: Cross-Channel Views of Paris and London in the Early Nineteenth Century', *Planning Perspectives*, 12, 1997,

49. Hansell, Mike., *Animal Architecture*, (Oxford University Press, Oxford, 2005);

50. Hauxner, Malene., 'The Language of the City Talks About Landscape', *TOPOS: European Landscape Magazine*, 2001, Jun. No. 35,

51. Hawker, Marc J. 'Body Language: an Architectural Approach to Performance', *World Architecture*, No. 45, 1996, Apr.,

52. Hawkes, Terence. *Structuralism and Semiotics* (London, Methuen & Co. Ltd, 1997),

53. Edited by Hays, K. Michael., *Architecture / Theory / since 1968*, (London, the MIT Press, 2000)'

54. Hesselgren, Sven., *The Language of Architecture, Volume 1, Volume 2* (London, Applied Science Publishers Ltd, 1969),

55. Hill, Jonathan. 'Criticism by Design: Drawing, Wearing, Weathering'. *The Journal of Architecture*, Volume 10, No. 3 (2005),

56. Hill, Kristina. 'A Process Language for Urban Design'. *Arcade*, Vol. 21(4),

Summer, (2003),

57. Hogben, Gavin., 'Wealden Poolhouse: Reflections on Language and Architecture', *ARQ*, 1995, Vol. 1, No. 1, Autumn,

58. Howells, Christina. *Derrida, Deconstruction from Phenomenology to Ethics* (Cambridge, Polity Press. 1999),

59. Hugo, Victor. The Hunchback of Notre-Dame, (London, Penguin Books Ltd, 1965),

60. Edited by Innis, Robert E., *Semiotics, an Introductory Reader*, (London, Hutchinson, 1986),

61. Ficacci, Luigi., *Giovanni Battista Piranesi, the Etchings*, (London, Taschen, 2005),

62. Kanekar, Aarati. 'From Building to Poem and Back: the Danteum as a Study in the Projection of Meaning across Symbolic Forms'. *The Journal of Architecture*, Volume 10 (2005),

63. Klotz, Heinrich., Translated by Radka Donnell, *The History of Postmodern Architecture* (Cambridge, Massachusetts, and London, The MIT Press, 1998),

64. Knecht, Barbara. 'Building Regulations May Finally Shed their Impenetrable Language'. *Architectural Record*, Apr., Vol. 191, Issue 4, (2003),

65. Jacobs, Jane., *The Death and Life of Great American Cities: The Failure of Town Planning* (New York, Vintage, 1961),

66. Jencks, Charles., *The Language of Post-Modern Architecture, the Sixth Edition, Academy Editions* (London, Academy Group Ltd. 1991),

67. Jencks, Charles., *The New Moderns, From Late To Neo-Modernism, Academy Editions* (London, Academy Group Ltd. 1990),

68. Jenks, Charles. *What is Post-Modernism? Fourth Edition,* (Chichester, West Sussex, Wiley – academy, 1996),

69. Lambert, Elizabeth., 'A Pattern Language, Black-And-White Dreams above Manhattan', *Architectural Digest*, 1999, Vol. 56, No. 5, May.,

70. Landa, Frank. 'Sign Language'. *Interiors for architects and Designers*, Sep. / Oct., (1999),

71. Lawson, Bryan., *The Language of Space*, (Architectural Press, 2001),

72. Lechte, John. *Fifty Key Contemporary Thinkers, from structuralism to postmodernity*, (London and New York, Routledge, 2003),

73. Edited by LeGates, Richards T. and Stout, Frederic., *The City Reader*, (London, Routledge, 2003),

74. Levit, Robert A. 'Language, Site and Types: A Consideration of the Work of Álvaro Siza', *The Journal of Architecture*, Vol. 1, Autumn, 1996,

75. Long, M.J. and Wilson, Colin St John. 'Talk to your Client about Architecture'. *The Journal of Architecture*, Volume 7 (2002),

76. Lynch, Kevin. *The Image of the City, the Twenty-sixth Printing* (Cambridge, Massachusetts, and London, The MIT Press, 1998),

77. Moravánszky, Ákos. ''Truth to Material' Vs 'The Principle of Cladding', The Language of Materials in Architecture'. *AA Files*, No. 31, Summer, (1996),

78. Mulfinger, Dale. 'Putting a Pattern Language to Work, an Inspired Approach Achieves High-Quality Space on a Tight Budget'. *Fine Home Building*, Vol. 1987, No. 38, Spring, (1987),

79. Patterson, Richard., 'What Vitruvius Said', *The Journal of Architecture*, Vol. 2, Winter, 1997,

80. Patterson, Richard., 'Trauma, Modernity, and the Sublime', *The Journal of Architecture*, Vol. 4, Spring,

81. Piaget, Jean. Translated and edited by Chaninah Maschler, *Structuralism* (London, Routledge and Kegan Paul Ltd. 1971),

82. Pile, John., *A History of Interior Design, Second Edition* (London, Laurence King Publishing, 2005),

83. Protzen, Jean-Pierre. 'The Poverty of the Pattern Language, Value in Design: a Dialogue'. *Design Studies*, 1980, Vol. 1, No. 5, Jul.

84. Psarra, Sophia. ''The Book and the Labyrinth Were One and the Same' – Narrative and Architecture in Borges' Fiction'. *The Journal of Architecture*, Volume 8 (2003),

85. Psarra, Sophia. 'The Parthenon and the Erechtheion: the Architectural Formation of Place, Politics and Myth'. *The Journal of Architecture*, Volume 9 (2004),

86. Robinson, Andrew., *The Story of Writing, Alphabets, Hieroglyphs & Pictograms*, (London, Thames & Hudson, 2003),

87. Salingaros, Nikos. 'A. The Structure of Pattern Languages'. *ARQ -London-*, Vol. 2000 4, No. 2, (2000),

88. Saunders, William S. 'A Pattern Language'. *Harvard Design Magazine*, Winter/Spring, 2002, No. 16, <http://mitpress.mit.edu/HDM>;

89. Saussure, Ferdinand de. Edited by Charles Bally and Albert Sechehaye in Collaboration with Albert Reidlinger, Translated by Wade Baskin, *Course in General Linguistics* (London, Peter Owen Ltd. 1964),

90. Spirn, Anne Whiston. *The Language of Landscape* (New Haven and London, Yale University Press, 1998),

91. Steiner, Frederick., *The Living Landscape, an Ecological Approach to Landscape Planning*, (London, McGraw – Hill, 2000),

92. Summerson, John., *The Classical Language of Architecture*, (London, Methuen & Co Ltd, 1964),

93. Taine, Hippolyte Adolphe. Philosophie De L'Art, Tome Deuxième, Vingtième Édition, (Paris, Librairie Hachette),

94. Thallon, R Tusa, John. 'From the Viewpoint of a Client'. *The Journal of Architecture*, Volume 7 (2002),

95. Thallon, Rob and Edrington, David. 'Working with a Pattern Language, How an Oregon Architectural Firm Uses this Benchmark Book to Design House'. *Fine Home Building*, Vol. 1986-1987, No. 36, Dec./Jan., (1987),

96. Thayer, Robert L. Jr. 'Landscape as an Ecological Revealing Language'. *Landscape Journal*, (1998),

97. Tschumi, Bernard., *The Manhattan Transcripts*, (Academy Editions / St. Martin's Press),

98. Urbach, Henry. 'Writing Architectural Heterotopia'. *The Journal of Architecture*, Volume 3 (1998),

99. Venturi, Robert., Brown, Denise Scott., Izenour, Steven., *Learning from Las Vegas: The Forgotten Symbolism of Architectural Form, Rev. Ed.* (Cambridge, Massachusetts, and London, The MIT Press, 1977),

100. Vesa, Marita. 'The Poem's Space – Poetry of Space? Reflections on the Relationship between Architecture and Lyricism'. *Architecture Design Art Path*, 2 (2001),

101. Vico, Giambattista. Translated by Thomas Goddard Bergin and Max Harold Fisch, *The New Science of Giambattista Vico, Unabridged Translation of the Third Edition* (1744) with the Addition of "Practic of the New Science"

(Ithaca and London, Cornell University Press, 1984),

102. Wallwork, J. F., *Language and Linguistics, an Introduction to the Study of Language* (London, Heinemann Educational Books Ltd,1969),

103. Watson, Victoria. 'Mies Van der Rohe: a Drawing and a Letter to a Client'. *The Journal of Architecture*, Volume 7 (2002),

104. Watson, Victoria. 'Never Talk to your Client about Architecture – Introduction'. *The Journal of Architecture*, Volume 7 (2002),

105. Weston, Richard. 'Poetic Patterns'. *Architects' Journal*, Vol. 186, No. 44, Nov. 4, (1987),

106. Wilkinson, Chris. 'Logic and Language: Foster & Partners' City Hall', *Architecture Today*, No. 131, 2002, Sep.,

107. Edited by Wood, David., Bernasconi, Robert. Derrida and Différance, (Evanston, IL, Northwestern University Press, 1988),

108. Editorial Consultants, Winston, Robert. Dr. Wilson, Don E. *Human* (London, New York, Melbourne, Munich, and Delhi, Dorling Kindersley Limited, 2006),

109. Winters, Edward. (guest editor with Paul Davies), 'Architecture and Human Purposes'. *The Journal of Architecture*, Volume 4 (1999),

110. Young, Terence. 'Moral Order, Language and the Failure of the 1930 Recreation Plan for Los Angeles County'. *Planning Perspectives*, 16, (2001),

Internet Source:

111. Adorno's Hut, [online]. Available at: http://jacketmagazine.com/15/finlay-milne.html
[22 February 2007]

112. Deconstruction, from Britannica, [online]. Available at: http://www.britannica.com/eb/article-9029711/deconstruction
[14 May 2008]

113. Hegel's Trisection System, [online]. Available at: www.hegel.net
[20 Mar. 2007]

114. I-n-t-a-c-t, [online]. Available at: http://www.i-n-t-a-c-t.org/events.htm
[20 February 2007]

115. I-n-t-a-c-t, [online]. Available at: http://www.i-n-t-a-c-t.org/area.htm

[20 February 2007]

116. I-n-t-a-c-t, [online]. Available at: http://www.i-n-t-a-c-t.org/intro.htm
[20 February 2007]

117. Language, from Merriam-Webster's Collegiate Dictionary, [online]. Available at: http://www.britannica.com/dictionary?va=language&query=language
[22 May 2008]

118. Louis Hjelmslev, from wikipedia, the free encyclopaedia, [online]. Available at: http://en.wikipedia.org/wiki/Louis_Hjelmslev
[08 Nov 2006]

119. Metaphysics, from wikipedia, the free encyclopaedia, [online]. Available at: http://en.wikipedia.org/wiki/Metaphysics
[12 Feb 2007]

120. OSA, [online]. Available at: http://www.osa-online.net/de/press/intact/intact4.htm
[20 February 2007]

121. Peak lab, [online]. Available at: http://www.hcla.co.uk/projects/?prorub1=tr&prorub2=15&pid=97
[22 February 2007]

122. Peak lab, [online]. Available at: http://www.hcla.co.uk/projects/?pid=119, http://www.hcla.co.uk/projects/?pid=120, http://www.hcla.co.uk/projects/?pid=121,
[22 February 2007]

123. Roman Jakobson, from wikipedia, the free encyclopaedia, [online]. Available at: http://en.wikipedia.org/wiki/Jakobson
[08 Nov 2006]

124. Sign, from Merriam-Webster's Collegiate Dictionary, [online]. Available at: http://www.britannica.com/dictionary?va=sign&query=sign
[14. May. 2008]

125. Sign, from dictionary.com Unabridged (1.0.1), [online]. Available at: http://dictionary.reference.com/browse/Sign
[21 Nov 2006]

126. Sign, from American Heritage Dictionary, [online]. Available at: http://dictionary.reference.com/browse/Sign
[21 Nov 2006]

127. Sign, from WordNet, [online]. Available at: http://dictionary.reference.com/browse/Sign

[21 Nov 2006]

128. Sign, from Crystal Reference Encyclopaedia, [online]. Available at: http://www.reference.com/browse/crystal/34735
[21 Nov 2006]

129. Sign, from Wikipedia, the free Encyclopaedia, [online]. Available at: http://www.reference.com/browse/wiki/Sign
[21 Nov 2006]

130. Thomas Kinkade, [online]. Available at: http://www.thomaskinkade.com/magi/servlet/com.asucon.ebiz.biography.web.tk.BiographyServlet
[26 February 2007]

131. Thomas Kinkade, [online]. Available at:http://kinkadeartwork.net/page00000031.html
[26 February 2007]

132. Thomas Kinkade, [online]. Available at: http://www.thomaskinkadedestin.com/store/sweetheartcottageii.htm http://www.artontheweb.com/kinkade-trivia.htm
[26 February 2007]

133. Universal, [online]. Available at: http://www.britannica.com/eb/article-9074353/universal http://www.britannica.com/dictionary?va=universal&query=universal
[15 May 2008]