

# Typography Principle by Viewpoint of Part and Whole

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**Background** Study on typography has focused mainly on material(type etc), background(history and character etc), and special effects(expression, media, etc) etc. Although typography means how to use the types, the study has focused on external things excluding the principle. That may be because the principle is based on the vacant space with no coordinates given and thus the value judgment is too subjective and difficult while the material, background and special effects etc have clear shape, fact/relationship and usage and thus the logical proving is easy. Actually, most of the typography theories explain in detail about the material, usage, background, and special effects etc but they explain the principle in only abstract and conceptual way and only show the practice examples and existing work pieces. To answer to this situation, the researcher intends to analyze the characteristic of the meaning, form and content of typography to propose detailed principle for the typographical practice and learning.

**Methods** The researcher proposes the concept of part and whole as the core principle of typography. He investigates the general and philosophical concept of part and whole and searches for concurrences between the meaning, form and content of typography and concept of part and whole. He comprehends the characteristic of the concept of part and whole deducted from typography and converses it into a viewpoint and proposes the disassemble and assemble as the practical operational principle of this viewpoint.

**Results** The core concept of typography is part and whole. Meaning(terminology, unit and space), form(letter and text) and content(grammar and flow) of typography are all composed of part and whole relationship. The term typography itself and all the typographical elements like unit, space, type, character, grammar of text and flow of content etc are all relationship of part and whole. Part and whole has characteristic of structure(frame, connection), system(order, rule) and recursion(part=whole, circulation). If you substitute these into typography, character and text has characteristic of connection of frames, order according to the rules and circulation of part and whole. These characteristics work as the viewpoint of the following principle.

The specific principle by viewpoint of part and whole is. disassemble and assemble. Disassemble works in the order of ① disconnection → ② search for frames → ③ comprehension of order → ④ and discovery of rule. Assemble works in the order of ① establishment of rule → ② creation of order → ③ formation of frames → ④ and connection. Disassembly and assembly circulate reversely and in order.

**Conclusion** Borges' novel <The Library of Babel> describes limitless books composed by a dozen of alphabets. This composition is the typography and its main principle is the disassembly and assembly by the viewpoint of the part and whole.

**Keywords** Part and whole, disassemble and assemble, typography

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## 1. Introduction

### 1.1. Study Background

The researcher has comprehended the type and structure of Hangeul through the keyword, 'Deong-i(lump)' throughout his doctoral thesis and in the case of Hangeul(Korean alphabet) typography, he discussed the differentiation and interaction between lumps in the typography(typography can be divided into typography inside the text which deal with the type and problems between types and the typography outside the text which deals with the space arrangement etc) inside the text. However, this study was limited to study on Hangeul, inside of the text and principle of text shape etc except for the space arrangement and problems of content of the text.

Study on typography has been focused mainly on type, history, theory of work, expression and media problems etc. Although typography is the use principle of the type originally, the study has been focused upon external studies except for the principle. It was because while the material, background, special effect etc have clear shape, fact relationship and usage and thus the logical proving is easy, the principle is based on the vacant space to which no coordinates are given and thus judgement of its value is very subjective and difficult. In reality, most of the typography theory books explain in detail the material, terminology, background and special effect etc, but explains only abstractly and conceptually and stops by showing practice examples and existing work pieces for the principle. Like this the problem of typography outside the text has been the main aesthetic judgement, lacking the logicity. The researcher has judged that the characteristic of lump, the theme of his doctoral thesis can be applied not only to the Hangeul typography and inside the text but also to the outside of the text.

On the other hand, since the term, lump is focused more on Hangeul and Hangeul typography principle, the study will deal with the whole typography field by deducting the new keyword, 'part and whole' which can be applied to universal typography of all the cultural areas and study and prove the detailed formative principles for the reasonable typography

practice and lessons.

## 1.2. Study Purpose

This study aims to deduct the practical formative principle from the part and whole concept of typography. While the existing doctoral thesis of the researcher has been limited to ① Hangeul typography, to ② type and spacial problems inside the characters and text and has excluded ③ the type spacial problems outside the characters and text, this study has included and magnified ① to the typography of all the cultural areas, extracted ② the new keyword, 'part and whole', magnified to the ③ shape and spacial problem outside the character and text and included and magnified to the ④ content aspect of the text. This research intends to develop universal typography principle which can be applied to both the shape and content not only to the shape of the characters and arrangement simply, while developing universal principle which covers the general characters of typography to the text of typography.

## 1.3. Study Method and Scope

This study will follow the following study method. ① Investigation of the part and whole concept from the meaning, type and content of typography. ② Study on the characteristic of part and whole. ③ Converse the characteristic of part and whole into the viewpoint of typography principle. ④ Disassemble, assemble and extract as this typography's practical principle from the viewpoint of part and whole. This study takes the scope of universal meaning of typography which is dealt with commonly in the design world of all the cultural areas.

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## 2. Concept of Typography: Part, Whole

### 2.1. Meaning of Part and Whole

#### (1) General Meaning of Part and Whole

Part means “one of the pieces of the whole divided”(Korea Lexicography

Research Group [KLRG], 2009a) and the whole means “the whole lump which is composed of several elements”(KLRG, 2009b). Every entity exists by starting with an atom or the smallest part which is smaller than the atom and by way of permanent circulation. Atoms get together to form particle and particles get together to form a material. This goes the same with typography. Typography has distinct part and whole concept in many design fields. parts get together to form a whole and that whole becomes a part of a bigger whole. It means that part is whole and the whole is part as well.

## (2) Philosophical Meaning of Part and Whole

The concept of part and whole has existed since a long time ago. The viewpoint of seeing the sum of parts as the whole and the viewpoint of seeing the whole as bigger than the sum of parts differ depending on the relationship between the part and the whole. The whole in the typography is physically the same of the sum of the parts, but can be superior to the sum of the parts depending on the content aspect or aesthetic value. The concept of part and whole appears commonly in the Eastern and Western philosophy. The philosophy of Hangeul, ‘Taegeuk’ is the Eastern philosophy which shows the principle of part and whole the best.

When we look at ‘Taegeukdo’, the diagram of ‘Taegeuk → Yin and Yang → men and woman → birth of all creatures’ comes from one and becomes several and is embodied back into one. This shows that Taegeuk which is one and several at the same time coincides with the concept of being part and whole at the same time. Epigram of Laozi's <Tao Te Ching>, ‘道生一， 一生二， 二生三， 三生萬物’ {dosaengil(Do(enlightenment) produces one), ilsaengi(one produces two), isaengsam(two produces three), samsaengmanmul(three produces all things)}(Laozi, 2002, p. 177) is also the same. The principle of ‘Do’ where one comes from enlightenment, two comes from one, three comes from two and all creation comes from three coincides with the concept of part and whole. The ‘Monad’ of Leibniz is the concept meaning the basic of all things. “Now where there are no parts, there can be neither extension nor form[figure] nor divisibility. These Monads are the real atoms of nature and, in a word, the elements of things.”(Leibniz, 2008,

p. 1) We can find the concept of part and whole from ‘Emanation’ of the Greek philosopher, Plotinus. He wrote “It is in virtue of unity that beings are beings.(Enn. V 9, 1)”(Plotinos, 2009, p. 70) What needs attention in ‘Emanation’ is that the uniqueness of ‘One’ leads to the ‘whole’. Democritus asserted the ‘Atomic hypothesis’ which means that the things in the world are composed of atoms. He sees that the smallest piece left after splitting an object into smallest pieces is atom and these atoms form different materials by being combined in different ways. The atomic hypothesis coincides with the concept of part and whole.

## 2.2. Part and Whole in Meaning.

### (1) Part and Whole which appear in Terminologies.

① Origin of Words : The terminology, typography itself has the meaning of part and whole. According to the Etymology Dictionary(Online Etymology Dictionary, n.d.), typography comes from a Latin word, typographia which is a combination of Greek ‘typos’ and ‘-graphia’. Typography means ‘writing(drawing) in types(picture, symbols and signs)’.

PROTO-INDO-EUROPEAN	GREEK	LATIN	FRENCH OR GERMAN	ENGLISH
to strike cut hew	dent impression mark figure original form	figure image form kind		symbol emblem printing blocks
(s)teu-	typtein	typos	typus	type
			typo- graphia	typo- graphie
				typo- graphy
gerbh-	graphein	-graphia		-graphie
to scratch carve	write to draw to scrape to scratch	description of		writing recording description

Figure 1 Etymology of ‘Typography’ (www.etymonline.com)

Typo means 'to strike', 'to cut', 'to hew', 'dent', 'mark' etc and -graphy means writing, recording and description. The act of making a mark by hammering on is to make trace, some part by hewing or

beating some object, the whole. This trace reminds us of the 'Type' in today' world. It is because types are a sort of traces that exist by being separated individually. In the etymology of -graphy which means writing, the meaning of scratching and writing characters on the mud plate stylographically is included. In the '-graphy', the meaning of trace like type exists. Also, the plate of characters which was made by making traces reminds us of today's typeset. We can deduct that '-graphy' has the meaning of part, the traces and the whole, the plate.

② Type : Movable type is the essence of typography. The value of the Gyoni type of China and the metal type of Gutenberg likes in the 'movement' of the character. The printing before 'type' was not individual characters but a plate printing type as a whole. The plate used to plate printing was produced only for one type of printing. For example, in order to print 100 pages, 100 print plates were needed to be produced. But, the type uses combination of characters separated individually and thus one type can be used for several prints. The labor force and a large amount of time used to produce many printing plate for printing was reduced by the invention of type and this contributed much to the advance of human beings. The reason why '活(live)' is used in the Chinese word '活字(type)' comes from the characteristic of the 'lively movement'. Typography was created from 'making the plate with movable characters' for printing. Types are the "individual letters that could be arranged, edited, printed from, then dismantled and reassembled to print again in a new configuration"(Loxley, 2006, p. 7). What needs our attention here is the individuality of the type. From this individuality, the characteristic of type, 'part' can be derived. Typography means making a plate by moving parts of types. The parts divided for the whole, the type is part after all.

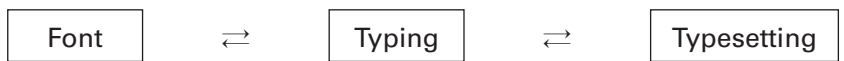
③ Typeset: 'Writing and drawing' means 'making plate(typeset)'. Typeset means "weaving the printing plate with the characters selected according to the manuscript or the typeset itself"(KLRG, 2009). The word, typography has been magnified into the design scope of more abstract meaning in the modern era but the original meaning is typeset. Typeset or typography all include the meaning of material(type), act(selecting

type and weaving) and result(plate). We can infer a fact from the following picture that the typeset process of today is the process of part becoming the whole.



**Figure 2** Process of Typography by Hand

In the past, when we used to print through manual work, the types were picked from the type case where individual types were contained being separated according to the types to weave the plate.



**Figure 3** Process of Typography by Computer

Today, we weave by typing in order the fonts using the computer typeset. The design act of selecting types, typing fonts on the typeset arranged in the actual plate or on the computer screen and arranging them in space is the act of making the whole using parts. We make the whole by collecting a few types and make the whole text collecting the wholes. If we detach a few wholes in order to differentiate them, it composes an arrangement of space, a layout.

### (2) Part and Whole which appears in the Unit.

Typography is a field where a concept of number is apparent among all the various design fields. In the size and space etc regarding the type, the material, the unit of points of very small sizes that can be designated are used. Precise recognition about units are required in all stages of typography. The numerical unit forms as the relationship between part and whole.



**Figure 4** Part and Whole of Unit

### (3) Part and Whole which appears in the Space

The basic premise which enables the typography is space. As with most of design fields, as for typography, the result is decided according to the

specific space scope regulated by way of situation of the media. The direct meaning of typography, 'how to use the type' is not a problem limited to the type itself but if it is formed by way of the co-relationship with the space. Space in typography exists in the gaps of all the parts which becomes text from fonts.



Figure 5 Part and Whole of Space

The typographic space in the outside of text like character or words depends on the implicit space division rule called, 'grid'. This was invented to visualize effectively the 'repetitive order' inherent in the letters and text. This is especially useful for the case of multi mass of media where continuous space like 'page' exists as with books. Grid divides the regulated space systematically from the whole into parts. According to Brockmann(Brockmann, 1981), space by way of grid is divided as follows.



Figure 6 Part and Whole of Space

## 2.3 Part and Whole in Form

### (1) Part and Whole which appears in the Form of Letters.

① Letters in General : The modern typography requires understanding about 'letters' of much more scope as well as the types. Most of the letters is a whole composed of parts. Although there are differences according to the letter, all of them are created by way of combination of promised symbols. A letter is a whole which is a combination of parts, the symbols.



Figure 7 Part and Whole of Letter

② Hangeul : Hangeul has a strong characteristic of whole and part. Other character symbols have less morphological and semantic relationship with one another. But, Hangeul was produced systematically in its minimum morpheme, alphabet and syllabary. The core principle



of Hangeul production is that the addition of strokes and combination reflects the characteristic of part and whole. The principle of addition of stroke appears in the alphabet creation process. The minimum morpheme according to the morphological classification of Kim Jin-Pyeong is line, slash, circle and point. (The minimum morpheme deduction methods are various depending on the grounding opinions.) Morphemes combine to become alphabets.



Figure 8 Part and Whole of Hangeul

The principle of combination appears in the syllabary creation process. The vowels and consonants formed based on morphemes form syllabary by being combined according to the up and down and left and right combination principle.

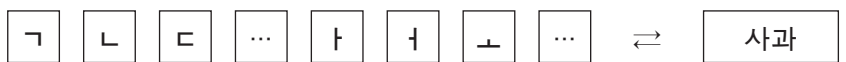


Figure 9 Part and Whole of Hangeul

### ③ Roman Alphabet

The invention of the 26 Roman alphabets enabled the fast development of Western Europe civilization. By memorizing the 26 symbols and combining those 26 symbols differently according to the object, they were able to change the language into characters and the public education of knowledge became possible.



Figure 10 Part and Whole of Roman Alphabet

### ④ Chinese Character

Chinese characters are created by way of combination by different method of parts which have various characteristics. We can know the characteristic of part and whole in the Chinese character through the 'Liushu(six ways of writing)', the principle of Chinese character making. Take an example of 'Hyungsung'(forming the sound), one of the 'Liushu', we can know that the meaning part of '水'(water) and the sound part of

'青'(blue) combines and the whole '清'(clear)is formed.

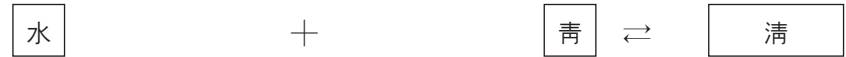


Figure 11 Part and Whole of Chinese Letter

**(2) Part and Whole which appears in the From of Text.**

① Text in General : 'Form of text' means the physical form of the text not regarding the content of the text. Characters get together one another to form short or long text. The form of text is composed following the below steps.

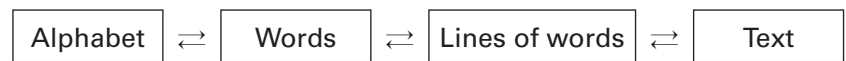


Figure 12 Part and Whole of Form of Text

Alphabets get together to form a word, words get together to form lines of words and lines of words get together to form the text. Based on the words, the alphabets are parts, based on the lines of words, the words are the parts and based on the text, the lines of words are the parts.

② Hangeul : Unlike other characters, in Hangeul, the combination of alphabets, syllabary exist between the alphabet and words. For example, 'ㅇ' is an alphabet and '한' is an syllabary. Although there are differences in other characters including Hangeul and Roman alphabets, but the text is composed by way of the same procedure. In this flow of alphabet becoming the text, the process continues in which parts get together to form a whole and that whole becomes a part to become a bigger whole.



Figure 13 Part and Whole of Form of Hangeul Text

**2.4. Part and Whole in Content**

**(1) Part and Whole which appears in the Grammar of Text**

① Relationship between the Content and the Grammar : Not only the forms of the character or the text but also the content contained in the character or text is formed by way of the part and whole structure. The

content and grammar of text are different in terms of their characteristic but they have undetachable relationship. It is because formalizing the content, in other words, expressing the content visually is grammar.

② Composition of the Grammar : The most fundamental grammar is composed of word, phrase, paragraph and sentence. The grammar of text is composed by the following steps.

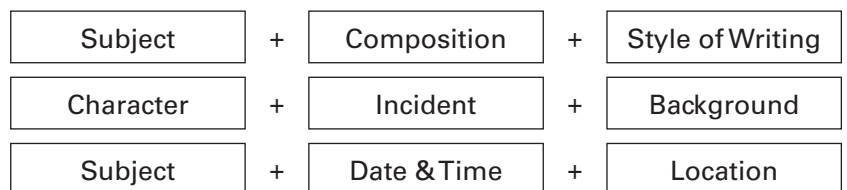


**Figure 14** Part and Whole of Grammar of Text

Words get together to form a phrase, phrases get together to form paragraph and paragraphs get together to form a sentence. Based on the phrases, the words are parts, based on the paragraphs, the phrases are parts and based on the sentences, the paragraphs are the parts. In this flow of words becoming sentences, the process repeats in which parts get together to form a whole and that whole becomes a part to form a bigger whole.

**(2) Part and Whole which appears in the Flow of Text**

① Composition of Text : When we disassemble into parts according to the content flow of the text, we can divide into various parts according to the characteristic of the text. We can divide by thesis, composition and style of writing and if it is a play, we can divide into commentary, text and conversation. If it is a subject of an event we can divide into subject, date and location. Also, we can divide into character and character or into what is important and what is less important.



**Figure 15** Part and Whole of Flow of Text

② Fluid Relationship : The part which appears in the content flow of text does not have vertical flow as with the type and grammar mentioned

above. Subject, composition, style of writing, incident and background etc are independent parts respectively, have fluid relationship according to the importance in a sense of content flow and these parts get together to form the whole, the flow the text.

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### 3. Viewpoint of Part and Whole : Structure, System and Recursion

The viewpoint of part and whole is the attitude of searching for method of combination performed by way of reasonable method by analyzing the parts, the components of character or inside of the text. The reasonable method means the structural, systematic and recursive thought extracted from the part and whole which appear in the typography.

#### 3.1. Structure

Structure means “collecting each part or element and making up a certain whole”(KLRG, 2009). According to Foucault(2012), structure depends on 4 variables. The 4 variables are “the form of the elements, the quantity of those element, the manner in which they are distributed in space in relation to each other, and the relative magnitude of each element”(Foucault, 1994, p.134). Typography makes up structure by mixing these 4 variables of material and act process. The frames as parts are connected to form the whole of frames. Take the human body, for example. The bones are connected one another and they form the whole body. The key words of the structure are frame and structure.

#### (1) Frame

① Center : Frame is the “content which comprises a certain phenomenon”(KLRG, 2009). Text is composed of various types of components. Text is divided into rhetorical writing and novel etc according to the characteristic. For example, the rhetorical writing is composed of a larger subject, smaller subject, body and annotations etc and this composition repeats several times in general. Here, the one axis

of the big subject, small subject, body and annotation is the center of the rhetorical writing and is the frame. A novel is composed of an axis of beginning, development, crisis, climax and conclusion. This axis is the frame of the center of the novel. By comprehending the central frame of the text, we can deduct the overall contour of the text.

② Contour : Frame is the landscape or contour of the whole. Contour is “the general synopsis of an event or an incident”(KLRG, 2009). Without the additional remaining elements other than the center axis of the text, we can comprehend the contour of the text by way of the frame. Frame represents the overall contour, in other words, the status of the text.

## **(2) Connection**

Frames are connected one another. Connection is “weaving some object with another object”(KLRG, 2009). Frame has interdependence and interrelationship. Character, text, unit and space exist as the whole through the connections of parts.

① Dependency : Frames depend on one another. Structure can not be made up with one frame. Several frames co-exist to form the structure. For the case of a novel which we took as an example before, the beginning, development, crisis, climax and the conclusion are connected one another. If even only one of these elements is missing, the frame is not formed.

② Relationship : Frames make organic relationship with one another. Every entity in the connection of the components of a novel, the beginning, development, crisis, climax and conclusion are differentiated an connected by the relationship of complementing and conflicting with one another. In other words, the development exists since there is beginning and the climax comes from the crisis.

## **3.2. System**

System means “an organization of each thing combined systematically according to a certain principle”(KLRG, 2009). The core of the system lies in the ‘certain principle’ and principle means a rule. System provides

'order' in disordered parts and configures the level or hierarchy through an order. In other words, it systemize by providing order in disordered parts and forming a hierarchy. The key word of system is rule and order.

### (1) Rule

In origin, a design means creating a rule. For the case of typography, the designer understands the text which is paraded in a complex way and interprets it and deducts a rule which reveals the information on the text clearly. A rule is not something which is configured according to the designer's arbitrary judgement or preference. "All languages have a stock of morphemes (word parts) and a set of conventions for assembling them into meaningful combinations such as complex words, phrase, and sentences."(Pinker, 2011, p. 213) The visualization is realized by finding these rules which exist in the inside of the text already but is difficult to be found if one does not search the text in detail. For example, in the case of Hangeul, there is a rule of adding stroke or combining the characters in the up and down or left and right direction and in the case of Roman characters, there is rule of combining in the linear way. The text has a rule of beginning from the smallest unit and proceeding to bigger units. The grammar contains the meaning of rule in its word itself. In the content flow, although there is no strict rules as with the type, there exist an agreed rule in a custom's sense in the function that has to convey the information of the content.

① Combination : Rules is not constituted through one or two characters or texts. They depend upon the universality and consistency that can be applied to many number of characters and texts just like equations in mathematics. "the rules are combinatorial. They don't just have a single slot, like a fill-in-blank exam question; every position in the sentence offers a choice od words from a lengthy menu."(Pinker, 2011, p. 6)

② Production : A language depends on rules. In a language, "the rules are productive. By specifying a string of kinds of words rather than a string of actual words, the rules allow us to assemble new sentences on the fly and not regurgitate preassembled cliches-and that allows us to convey unprecedented combinations of ideas."(Pinker, 2011, p. 6) Since

the rules of languages as the raw material of typography is productive, the rules of typography are also productive. Collections of characters as well as characters as the language's direct expressing tool are governed generally by the repetitive rules. For example, in one thesis, the subject, body and annotations etc repeat several times in its composition. Repetition raises the productivity of an entity and once we understand the repetitiveness of one composition, we can easily apply the remainder of the composition to the same rules.

## (2) Order

① Maintaining the System : Part and whole keeps their order through the rules. Every step from the alphabet to the text keeps their place and maintains the order. If the alphabet goes beyond the system and becomes too large or small abnormally, the syllabary, can not be maintained soberly. In the content, if the size and location which are most appropriate for the importance of the information are not maintained, error occurs in the information interpretation. The amount of the text or the incident which are assigned according to the importance of the characters must be properly maintained to convey the content of the text.

② Comparison: Order is obtained from “terms of identity and difference”(Foucault, 1994, p.54), in other words comparison. “whether in the form of an exhaustive census of all the elements constituting the envisaged whole, or in the form of a categorical arrangement that will articulate the field of study in its totality, or in the form of an analysis of a certain number of points, in sufficient number, taken along the whole length of a series”(Foucault, 1994, p.55) In typography, separation of parts should be achieved through comparison.

③ Hierarchy: Parts in typography have their own hierarchy inside the whole. The layout in typography means “integrating the whole as one when elements of typography governs and subordinate one another”(Won, Seo, & Song, 2004, p. 158). Typography has the governing and subordinating hierarchy between the part and the whole. There is vertical hierarchy and parallel hierarchy in the hierarchy of the

part and whole. For example, the content of a book can be divided into the hierarchy of the big subject, middle subject, small subject and the body. Here the 'big subject → middle subject → small subject → body' is a vertically arranged hierarchy. Various small subjects under a specific middle subject is a horizontally arranged hierarchy. The hierarchy of part and whole can be expanded or contracted. It expands and contracts from the smallest part to the biggest part. While there is expansion in the alphabets, syllabary, words, lines of words and text, there appears also the expansion of tension and relaxation in the content of text.

### 3.3. Recursion

Recursion means "going back to where one used to be"(KLRG, 2009). Part and whole is a relationship of recursion.

#### (1) Part = Whole

① Recursion of the Language : A sentence is divided into a noun phrase and verb phrase, the verb phrase contains a sentence and this sentence again is divided into a noun phrase and verb phrase and the verb phrase contains a sentence. This process repeats permanently. As the method of recording a language, "grammar is recursive: The rules create an entity that can contain an example of itself"(Pinker, 2011, p. 8)

② Recursion of Typography : Alphabets get together to form words, words get together to form lines of words and lines of words get together to form text. Parts get together to form a whole, part, the whole get together to form a whole and this whole get together to form another whole. The part and whole which appears in the meaning, form and content of typography all have this recursive relationship. Part is whole and whole is part, too.

#### (2) Circulation

Circulation is "circulating of a certain phenomenon or a series of change process in a periodically repetitive manner"(KLRG, 2009).

① Repetition : In the elements in typography, part works as a whole and this process repeats continuously. The frame of text, connection, order and rule, the cores of typography have the characteristic of repeating in



a certain manner. Thanks to this repetitiveness, once we understand the core of the part and whole of a text, a certain design principle can be established.

② Network : Part and whole have logical structure and system and at the same time the part and whole of different characteristic have mutually organic relationship. For example, grid of form specie and the subject of content specie have relationship. The networks of various angles as well as the vertical and horizontal hierarchy of the part and whole situated in the hierarchy structure are important.

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#### **4. Principle of Typography by Viewpoint of Part and Whole : Disassemble and Assemble.**

##### **4.1. Disassemble and Assemble of Structure, System and Recursion**

① Detailed Methodology : The researcher has deducted the characteristic of structure, system and recursion from the part and whole concept which was paid attention to in the material and act process of typography. He saw the specific methodology which took these characteristics as the basis of the principle of typography as disassemble and assemble. In other words, the principle of typography that the researcher proposes is the structural, systematic and recursive disassemble and assemble based on the concept of part and whole.

② Order and Reverse Order : Each process of disassemble and assemble follows the order and reverse order. Disassemble proceeds in the reverse order of connection, frame, order and rule and assemble proceeds in the order of rule, order, frame and connection.

③ Infinity : As we can know in the infinity of the number of words combined with alphabets discussed in the <arithmetic problem regarding

combination of objects> by Paul Guldin(Eco, 2010, p.366), the method of disassemble and assemble enables the infinite expansion of the interpretation of typography about characters and text.

#### 4.2. Principle of Typography by Viewpoint of Part : Disassemble

##### (1) Relationship between Part and Disassemble.

Disassemble means “dividing the thing which is composed of several parts into individual parts”(KLRG, 2009). The key words of disassemble is separation and interpretation.

① Separation : Part has the meaning of dividing. The Chinese meaning of part has the dividing also. Disassemble means splitting and separating. Take the calculation method of an entity, for example. Binding and the same entities dispersed irregularly into the following few groups and counting them is swift and easy. As for the characters and text also, if they are same type, it is reasonable to separate into a few groups.

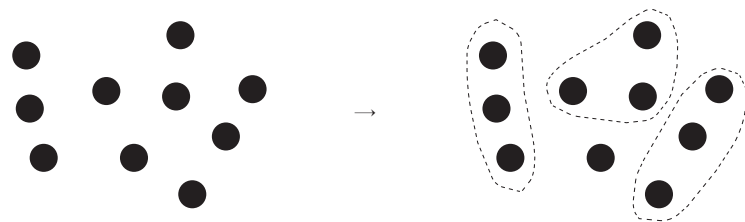


Figure 16 Count by Grouping

② Interpretation : Disassemble has the meaning of interpretation. Part of the word, ‘disassemble’ has the meaning of solving in Chinese letter. Disassemble is the disassemble of the center of meaning through interpretation of text. When various types of entities are mixed, we interpret each types and separate them and count them. When disassembling parts of characters and text, we should interpret the meaning and bind them by the same specie.

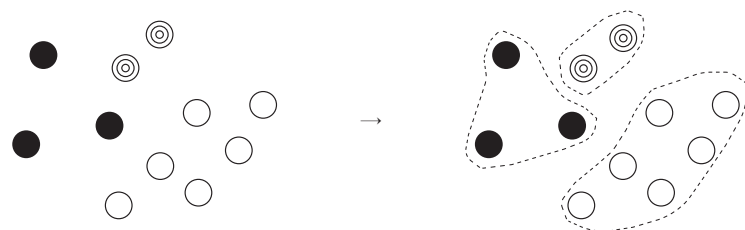


Figure 17 Count by Grouping

## (2) Methodology of Disassemble

The disassemble proceeds in the following order.

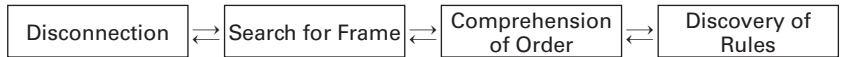


Figure 18 Process of Disassemble

The text of origin, the material of typography is the status which does not show any structure or system yet. Since the narration is done in order from the beginning to the end according to the flow of the content of the text, the order of the component of the text is shown intact, the hierarchy of each component etc are not shown precisely.

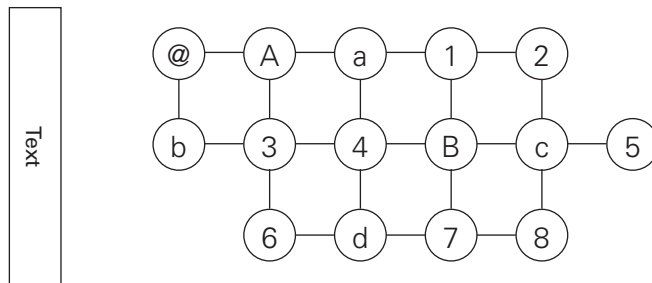


Figure 19 Original Text

① Disconnection : We simply separate the text in status of being mixed complexly and united as one into the smallest unit based on the content and grammar of the text and classify and put in order by the type.

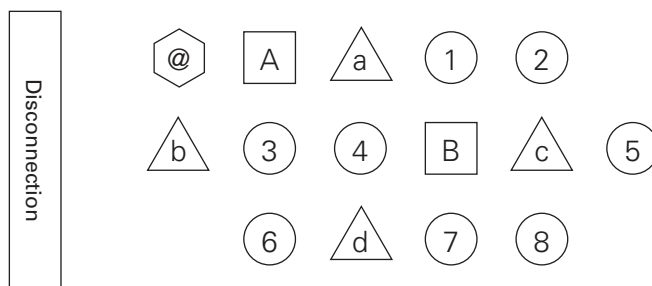


Figure 20 Disconnection

② Search for Frame : Search for the frame which forms the main axis among the components of the text. In this example, we can find the main axis of @ - A - a - 1. Frame is the center and contour which comprise the

composition of text.

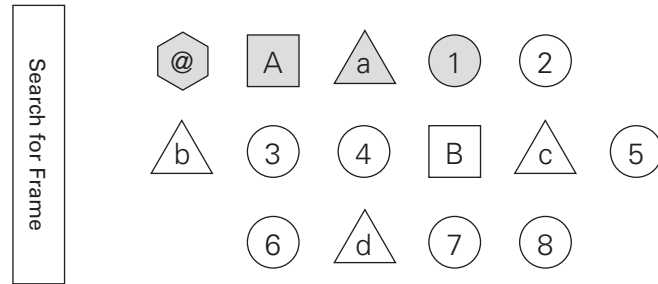


Figure 21 Search for Frame

③ Comprehension of Order : Comprehend the hierarchy and order of rank through the comparison of component of text.

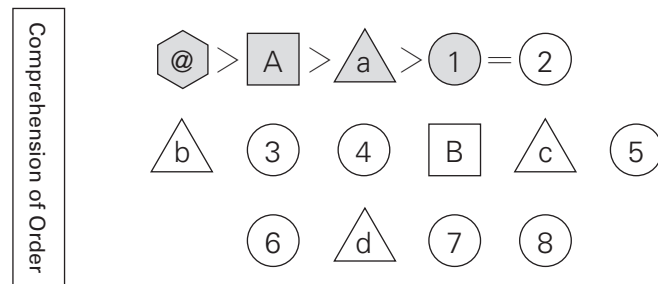


Figure 22 Comprehension of Order

④ Discovery of Rule : Find the rule by synthesizing the frame, the center of the text and the order, the hierarchy.

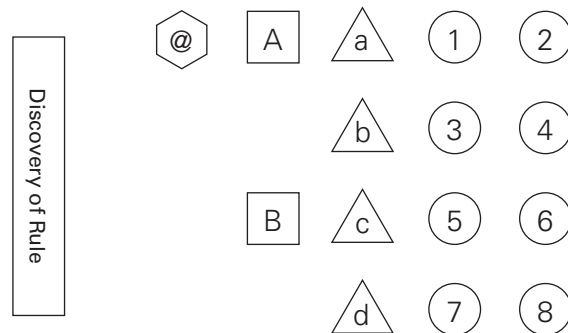


Figure 23 Discovery of Rule

### 4.3. Principle of Typography by Viewpoint of Whole : Assemble

#### (1) Relationship between the Whole and Assemble.

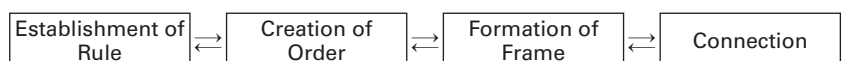
Assemble means “weaving various components into one structure” (KLRG, 2009). The key words of assemble are lump and inevitability.

① Lump : Whole is a agglomerated lump of several elements. Act or method of agglomerating this lump is assembly. Lumps are very important in typography. It is because the differentiation of the lump determined according to the degree of solidity of the lump determines the structure of the text and clarity of the system. For example, when the lump is combined solidly, the differentiation between entities is easy and thus the structure and system of information is clearly shown, but when the lump is combined loosely, the differentiation between entities is difficult and thus understanding the information easily and swiftly becomes difficult.

② Inevitability : While other fields of design is to make problems by themselves and searching for answers, typography is already given the problem, ‘text’. The role of designer is to interpret the text in detail and search for directions that the text designates. The researcher calls this the inevitability of typography. The disassemble character and text is assembled automatically by way of its inevitability and as a result of the automatic assemble, the composition and the shape are also formed automatically. When a separate methodology which excludes the inevitability is used, typography loses its meaning.

#### (2) Methodology of Assemble

The assemble is performed in the following order.



**Figure 24** Process of Assembly

① Establishment of Rule : The rule that was found through the process of disassembly becomes the rule for assembly.

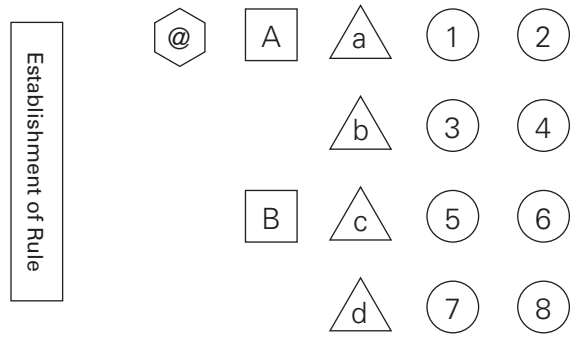


Figure 25 Establishment of Rule

② Creation of Order : It expresses the hierarchial structure found through disassemble visually. Since the @-A-a-1 is a vertical layer and thus is arranged vertically and A-B and a-b-c-d etc are horizontal layer and thus are arranged horizontally.

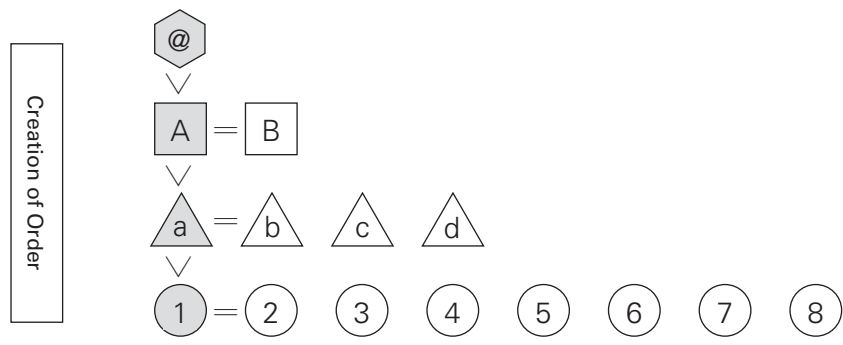


Figure 26 Creation of Order

③ Formation of Frame : The order created through the establishment of rules now apply to other components. In other words, by applying the @-A-a-1 rule to @-A-a-2, @-A-b-3 and @-A-b-4 etc, we erect the frames of important points.

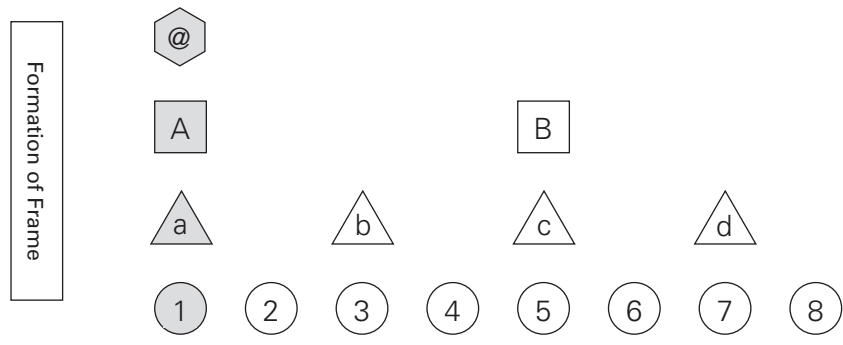


Figure 27 Formation of Frame

④ Connection : Connect each frame and part of frames by way of the order depending on the rules. Connections fortify the solidity of the parts(in other words, wholes) or clarify the space differentiation between parts and clarify the differentiation between parts(between wholes). By connecting, the structure and the system becomes clarified.

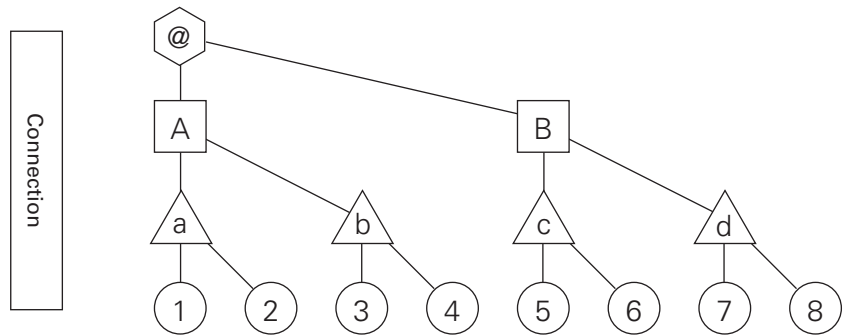


Figure 28 Connection

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## 5. Conclusion

Although the expression of language is infinite, the record is possible with a combination of only tens of symbols. The novel of Borges, 'The Library of Babel' is depicting about the infinite books composed of a combination of twenty something alphabets. The researcher sees the combination of the character as the core of typography. He considers that since all the elements of typography, in other words, meaning, form, content are based on the principle of 'composition of the whole by way of the combination of parts, the space arrangement principle of types, the core of typography also follows the concept of part and whole and thus proposes the disassemble and assemble as specific methodology. The principle of disassemble and assemble is an effective methodology which enables the interpretation of typography of infinite diversity which the character and text contain. Although the disassemble and assemble dealt with in this study focuses on the locational problems in the spacial arrangement, it is judged that size, color and other expressing methods

also can be applied according to the same principle. It is also expected that typographical interpretation of the elements other than types like shapes, paintings and pictures will be possible through the typographical concept of part and whole.



## References

- 1 Brockmann, J. M. (1981). *Grid System in Graphic Design*. Zurich: Verlag Niggli AG.
- 2 Eco, U. (2010). *Vertigine Della Lista*(E.Oh. Trans.). Seoul: Openbooks. (Original work published 2009)
- 3 Foucault, M. (1994). *The Order of Things*. New York: Vintage Books. (Original work published 1966)
- 4 Korea Lexicography Research Group (Ed.). (2009). *Korea University Korean Dictionary* (Version 1.8) [Mobile Application]. Seoul: DaolSoft, Co., Ltd.
- 5 Laozi. (2002). *Laozi annotation*(H. Kim. Trans.). Seoul: Hongik Books. (Original work published n.d.)
- 6 Leibniz, G. W. (2008). *The Monadology*(R. Latta. Trans.). HongKong: Forgotten Books. (Original work published 1714)
- 7 Loxley, S. (2006). *Type: The Secret History of Letters*. New York: I. B. Tauris.
- 8 Online Etymology Dictionary. Retrieved from <http://www.etymonline.com/>.
- 9 Pinker, S. (2011). *Words and Rules*. New York: Harper Perennial. (Original work published 1999)
- 10 Plotinos. (2009). *Enneades*(G. Cho. Trans.). Seoul: Numen. (Original work published n.d.)
- 11 Won, Y., Seo, S., & Song, M. (2004). *Typography*. Seoul: Ahn Graphics.