



타 포 피 이 래 T Y P O G R A P H Y

IN CROSS CULTURAL ENVIRONMENTS

BY JUNG YEUN PAEK

TYPOGRAPHY IN CROSS CULTURAL ENVIRONMENTS

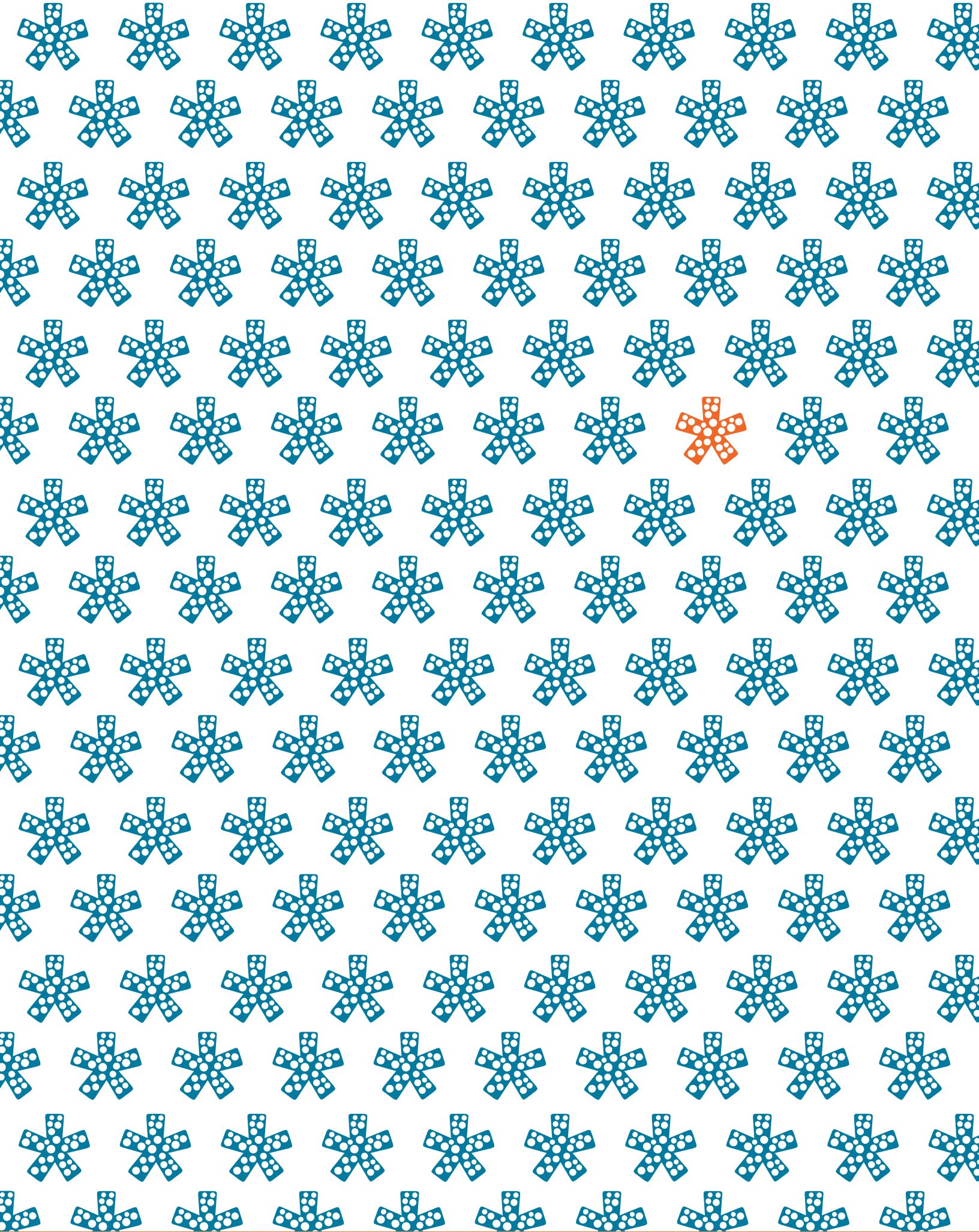
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Information Design.

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**By replacing a script's traditional proportions with arbitrary ones
inherited from the Latin master we weaken its natural formation of
word shapes—the key to efficient reading.**

Hrant Papazian
TYPE DESIGNER

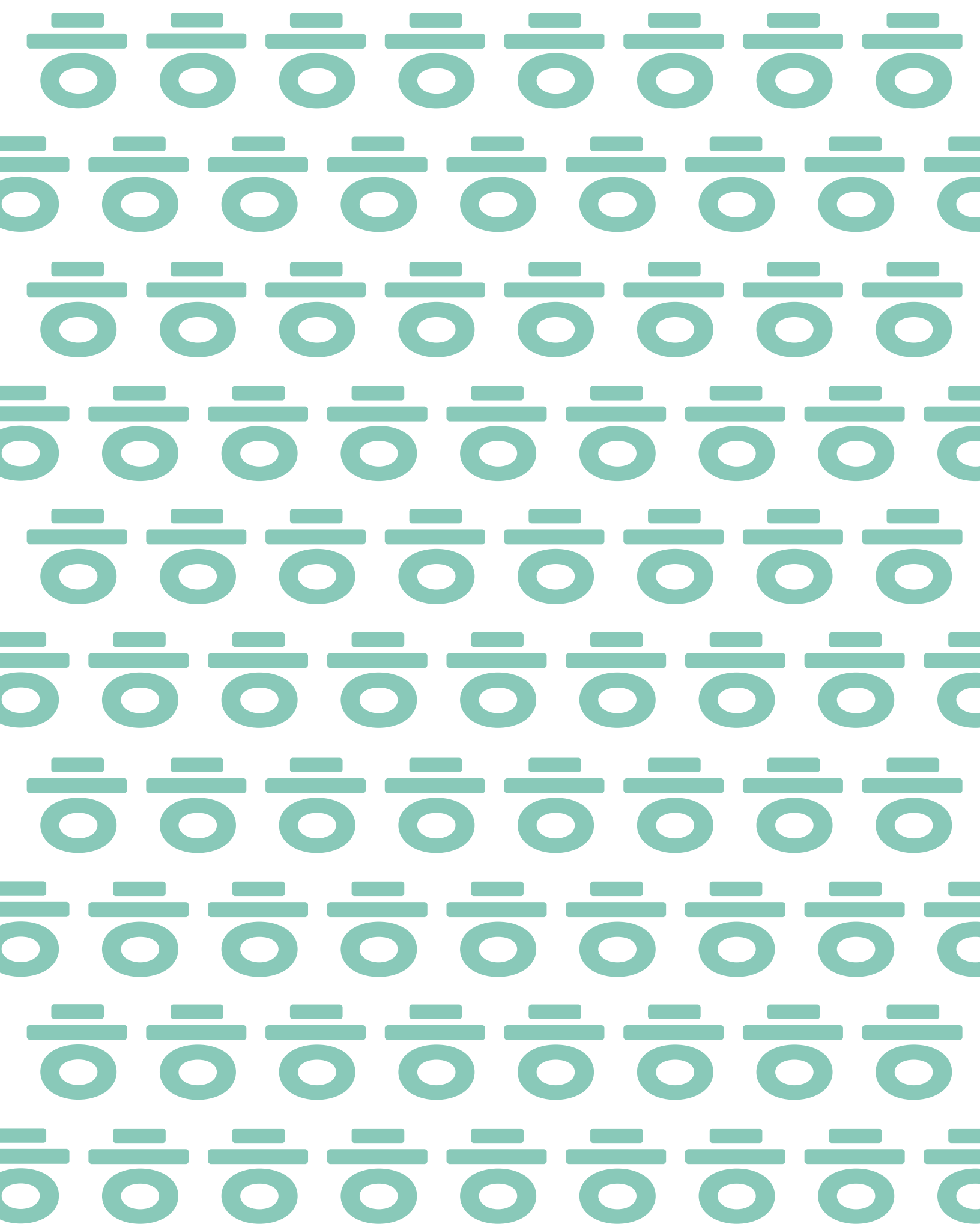
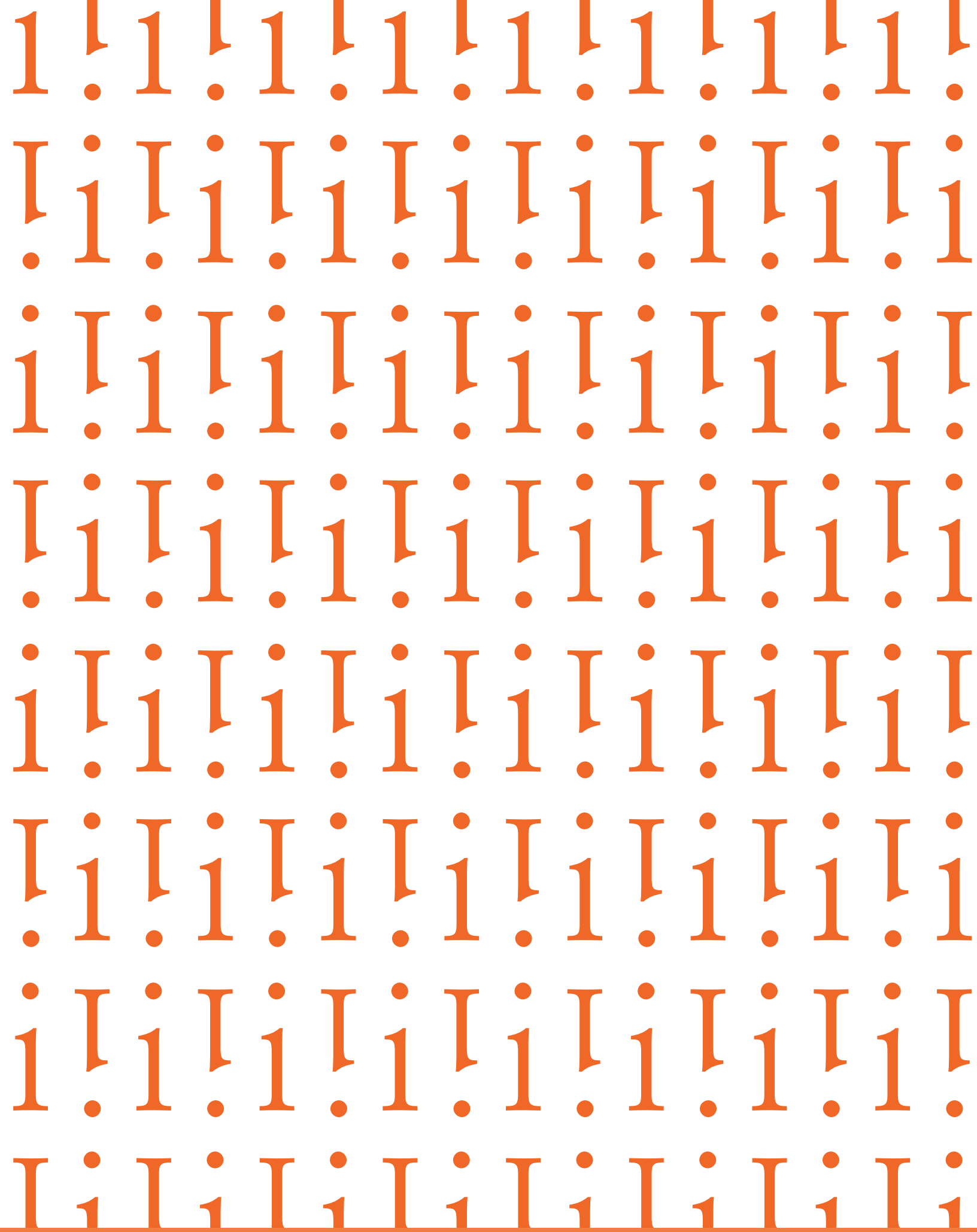


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ABSTRACT

This thesis examines the structural challenges when designing in two different alphabet systems, Roman and Hangul (Korean alphabet). English being the universal language, it is common to see this pairing in various design solutions, from packaging to posters to websites. However, Korean communication design has a very short history and for that reason, it adopted prevailing western guidelines. Under the western guidelines, Korean designers face challenges when designing text because the guidelines are not entirely fitting for the Korean alphabet. Therefore, Korean communication design needs structural guidelines for the everyday practitioners to use them effectively when multi-scripting. For my solution, I designed typographic guiding principles that allow two different alphabet systems to work harmoniously when multi-scripting. My research builds upon Nanum Type Families, open source typefaces. These guiding principles are designed with two goals in mind—provide thorough suggestions when multi-scripting for the Korean communication design community and also encourage a greater appreciation for and use of Hangul within that community.



COMBINATION
OF HANGUL
AND ROMAN

Street signage in
S. Korea (top row)

Packaging for chips
(second row left)

Storefronts in S. Korea
(second row right &
third row right)

1 INTRODUCTION

With English as the universal language, effectively communicating information is more important than ever in the globalized world of communication design. However, the complexity and difficulty of communication between people of different cultures, languages and writing systems has escalated due to the sheer amount of information. “We need to improve the typographic tools in a meaningful way that future designers can communicate better than we did.”¹

With a focus on communication design in S. Korea, regardless of the design platform, the typography in S. Korea’s design are often times paired with Roman and Hangul alphabets on the same page: communication design, industrial design, branding, packaging, advertisements etc. For instance, in Korean magazine layout design, whether it is as minimal as using Roman for the headline, almost every spread is typeset in both Hangul and Roman. This coexistence of alphabets can be recognizable in street signage and branding as well.

Despite the overabundant multi-scripting², unfortunately, the two alphabets are not harmoniously paired together because typefaces that can cater to both alphabets are qualitatively unsatisfactory and very limited on the market. It takes a lot longer to design Hangul typefaces—even with only 24 characters—because 2,350 characters³ (not including special characters or glyphs) need to be designed based on the structure of consonants and vowels. But Roman only requires 52 characters (uppercase and lowercase).



When a consonant (orange) is paired with a vowel (white), the same □ shape will have to be designed separately since the proportions will change, depending on the structure.

1 David Brezina. Type designer, Typographer and Director of Rosetta Type Foundry

2 Multi-scripting refers to setting type in different alphabets on the same page.

3 Yong Je Lee. [Research on Representative Letterforms for Developing Effective Hangul Fonts—With Focus on Balance and Proportion](#). Korea, 2012

4 Jeong-mi Yu. [Modernity of the Design Philosophy Contained in Hunminjeongeum](#). Korea, 2010

community and more attention is needed. Multi-scripting requires knowledge in various characters visually but also in cultural and historical circumstances. With the multimodal nature of contemporary text, Hangul and Roman typefaces need to be approached with a certain level of sensitivity for better communication.

1.1 Hangul, the Korean alphabet

Hangul is the native alphabet used in Korea, which is a scientifically made writing system created in the 15th c. (National Treasure No.70)⁵. It is a phonetic alphabet based on the position of the mouth and the tongue. Hangul comprises 14 consonants (ㄱ, ㄴ, ㄷ, ㄹ, ㅁ, ㅂ, ㅅ, ㅇ, ㅈ, ㅊ, ㅋ, ㆁ, ㅌ, ㄽ, ㅍ, ㅍ) and 10 vowels (ㅏ, ㅑ, ㅓ, ㅕ, ㅗ, ㅛ, ㅜ, ㅠ, ㅡ, ㅣ), wherein a word is formulated by at least one consonant and one vowel. Therefore, unlike the sequential characters of the Roman alphabet, Hangul is formed by stacking the letters. The stacked characters can then be arranged horizontally or vertically. Hangul is considered to be one of the simplest alphabet because it was designed not only to serve for elementary communication but also to become the perfect communication for the Korean commoners.⁶

A wise man can acquaint himself
with them before the morning is
over; a stupid man can learn them
in the space of ten days. King Sejong

1.2 Historical Background of Hangul

The name of Hangul was given by a Korean linguist, Ju Sikyung (1879–1917), which *Han* (한) represents Korean and *gul* (글) stands for words. Before, Hangul's original name was Hunminjeongeum (훈민정음), proper sounds for instructing the people.⁷ 560 years ago, King Sejong created Hangul, the Korean alphabet. Until the creation of Hangul, Koreans used Chinese characters as their written language. But because the spoken language (Korean) was different from the written language (Chinese), there were limitations and difficulties in expressing thoughts. "Our language differs from Chinese and with Chinese letters, it is impossible to communicate for us. This is why many common people who need to express something are unable to do so in the end. Thinking of them, I created twenty eight new signs which should be easy to learn from anyone and convenient for everyday use."⁸

⁵ Jae Joon Han. *The Sustainable Vaule of Hangul*. Korea, 2009

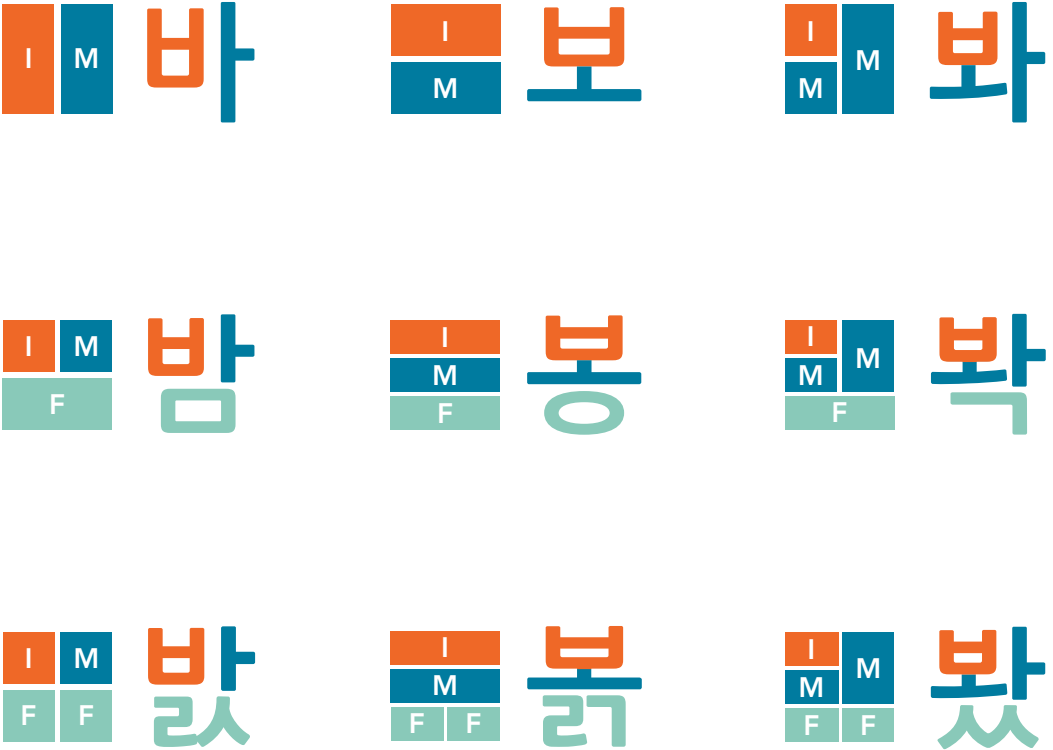
⁶ Icograda. www.icograda.org/feature/current/articles1181.htm. Issue 31. Spring, 2008

⁷ The Economist. www.economist.com/blogs/economist-explains/2013/ Korea, 2013

⁸ Quote by King Sejong. *Hangul hakhö: Hunmin Jeongeum, Commented translation, Hangul hakhö, page 1*. Korea, 1998

HOW HANGUL IS STACKED

I: Initial M: Medial F: Final



Initial
ㄱ g ㅋ kk
ㄴ n
ㄷ d ㅌ tt
ㄹ r,l
ㅁ m
ㅂ b ㅃ pp
ㅅ s ㅆ ss
ㅇ no sound
ㅈ j ㅊ jj
ㅊ ch
ㅋ k
ㅌ t
ㅍ p
ㅍ h

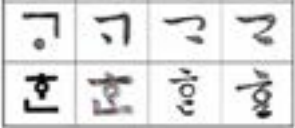
Medial
ㅏ a ㅑ ya ㅓ wa
ㅕ eo ㅗ yeo ㅛ wo
ㅜ o ㅠ yo
ㅡ u ㅠ yu
eu
ㅣ i
ㅏ ae ㅑ yae ㅓ wae
ㅕ e ㅗ ye ㅛ we
ㅜ oe
ㅠ wi
ㅡ ui

Final
ㄱ ㅋ ㆁ k
ㄴ ㄽ ㄾ n
ㄷ ㅌ t
ㅁ ㅂ ㅃ ㅅ ㅆ ㅈ ㅊ ㅋ ㅌ ㅍ ㅍ p
ㅁ m
ㅂ ㅃ ㅅ p
ㅅ ㅆ t
ㅇ ng
ㅈ ㅊ t
ㅎ t

Also, the majority of Koreans were illiterate while only the privileged male aristocrats were able to read and write fluently. In order to increase literacy, King Sejong decided that Korea needed its own writing system that matched the spoken words. On October 1446, Hangul was created as a result of a thoughtful Korean design with a clear goal—strengthen the communication. Hangul is a design artifact that contains the history and culture. “*Hangul is cultural independence from China, Japan and the Western world.*”⁹ The invention of metal movable type impacted the original visual form of early Hangul.

Korea’s metal movable type was created during the Koryo Dynasty in the 13th c., whereas in Europe, Gutenberg’s was developed in the early 15th c.¹⁰ Traditionally, characters develop from handwritten script—calligraphy—but for Hangul, it was possible to design the characters as clean strokes without embellishments, like serifs in the western sense, because of the metal movable type. Script and serif letterforms were designed few years later.

HANGUL TRANSITION



From left to right, this shows the transition of a geometric character into script form.



Metal movable Hangul mixed with Chinese characters (left), Printed book (right)

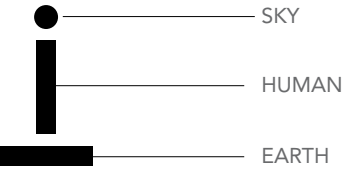
50 years later (1504), despite the new technology, the new king, Yunsangun, banned the usage and research of Hangul. He did so because the commoners were expressing their dissatisfaction in his ruling too freely in written words using Hangul.¹¹ Hence, Chinese characters were reintroduced as the main written characters; however, Hangul wasn’t entirely neglected—it only slowed the process of its development. In the late 16th c. there was a small revival of Hangul in literature. A few scripts and serifs were practiced undercover amongst the noblemen. In the late 19th c.—early 20th c., under the Japanese occupation, the Japanese banned the usage of Hangul for 30 years, forcing the Koreans to only write and speak in Japanese.¹²

And then after the victory over Japan (August 15, 1945), the Korean War (1950–53) broke out, dividing the peninsula into two different countries: South Korea and North Korea. With the division, design in Korea languished.

In the early 60s, the increased number of businesses and exports encouraged the growth of graphic design with a western influence in S. Korea. Because the growth of Korean communication design floundered, Korean design adopted the western guidelines to fulfill the high demands.¹³ Most of the western communication design guidelines originated from Swiss Design also known as the International Typographic Style. Developed in the 50s, it is a graphic design style from Switzerland that supports readability, negative space, use of grid, and asymmetry.¹⁴ However, the structural differences cause visual inconsistencies, which affect miscommunication when multi-scripting. With the two different alphabets, there is a lack of affordance when directly applying western principles into Hangul. Therefore, Hangul needs its own set of guiding principles that could complement the structural form. In order to do that, first the designer has to assess, scrutinize and understand Hangul at its most elemental level. Then, find a way to balance those findings with the western guidelines and apply them when multi-scripting.

1.3 Structural Differences

There are 24 characters in the Hangul alphabet. The structure of Hangul is very simple—dot, vertical line and horizontal line, which represents the sky, human and the earth.



At a first glance, the structural elements appear similar to the Roman alphabet but unlike Roman characters where the letters are written sequentially, Hangul is stacked into blocks.

Stacked vs. Sequential

The individual letters follow one after another with the Roman alphabet, whereas Hangul stacks the letters in clusters and the order of the letters begins from top left, top right, lower left to lower right.

⁹ Sang Soo Ahn. Typographer, Educator and Founder of Ahn Graphics & PaTI

¹⁰ Thomas Christensen. [Did East Asian Printing Traditions Influence the European Renaissance?](http://en.wikipedia.org/wiki/Did_East_Asian_Printing_Traditions_Influence_the_European_Renaissance?) 2006

¹¹ Yeonsangun of Joseon http://en.wikipedia.org/wiki/Yeonsangun_of_Joseon. 2014

¹² Life in Korea. www.lifeinkorea.com. 2014

¹³ Jeong-mi Yu. [Modernity of the Design Philosophy Contained in Hunminjeongum](http://www.designishistory.com). Korea, 2010

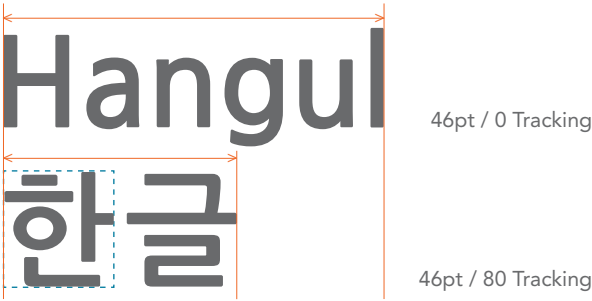
¹⁴ Swiss Design. www.designishistory.com. 2014

This means that instead of using a baseline like Roman, Hangul can either use a baseline, mean line or top line.¹⁵ According to the western guidelines, we are taught to ground the Roman letters on the baseline but when this line shifts, multi-scripting becomes tedious. The inconsistency in baseline impacts the leading and tracking as well, which requires full typographical attention. These are fundamental concerns that need to be addressed in typography and the designer not only needs to find two different typefaces that are harmonizing in style but also have knowledge in these structural characteristics.



Hangul is both wide and compact

Hangul defines an invisible box where the character fits inside—this creates a lot of counter space or negative space. And depending on the type of Hangul typeface, the counter space can be wider than others, which then the letters might appear lighter than the “regular” weight. When these invisible boxes form full words because of Hangul’s uniformed geometric shape the word spacing becomes very compact and tight.



15 Yong Je Lee. Typedesigner and Educator in Korea

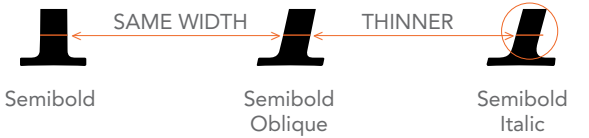
Usually the ascender and descender in the Roman alphabet help readability because they provide breathing room and aid the eyes to move around. Therefore, when setting type in both Hangul and Roman, the designer has to manually adjust the tracking and type size for both alphabets. The designer shouldn’t assume that a solution that works for one alphabet would be effective in another.

No Italics

The origin of italics (1501)¹⁶ comes from calligraphic handwriting. The slanted letters made it easier to write quickly and fit more information in a small parchment paper.¹⁷ Before Gutenberg’s black letters, people wrote in script instead of printing the letters. In the modern world, designers italicize the words or phrases in order to put emphasis. But interestingly enough, Hangul doesn’t have italics. In order to compensate the western style, some Hangul typefaces carry “oblique” characters, meaning that they tilt the upright letterforms and skew them diagonally by 12°.¹⁸ These are usually considered bad typographic practice because it doesn’t use different glyph shapes. Robin Kinross says, “*Oblique type is a grotestque mutation.*”



Tilted letters become a problem because they don’t consider the proportions of counter spaces and the thick and thin quality of the strokes. This means that, when an upright character switches to italic, the width of the character becomes thinner. But when the character is skewed by 12°, it directly transfers the width of the upright character.¹⁹



And because Hangul formulates in clusters, italicizing Hangul would completely distort the original letterforms, creating a new set of alphabet. Tracing back history, Hangul was designed as a sans serif from metal type; hence, the necessity for italicized letters was unpermitted. Also, since the consonant characters are designed

16 Aldus Manutius. www.historyofinformation.com. May, 2014

17 Italic Typefaces. www.britaininprint.net/introtoprint/italic.htm. 2003

18 Jiwon Yu. *A Comparative Study on Italic of the Latin Alphabet and Cursive of Hangul*. Korea, 2009

19 Jin Pyoung Kim. *The Expression of Hangul*. Korea, 2001

phonetically, italicizing would distort the phonetic transcription. A similar case study can be found with the Armenian alphabet as well. The Armenian alphabet also doesn't use italics because the language is rarely written at an angle, in which italicized letters don't carry any significance to the reader.²⁰ Hence, special attention is required for characters like Hangul or the Armenian alphabet.

2 REVIEWS OF RELEVANT PROJECTS, RESEARCH AND DESIGN APPROACH

With my research on structural differences, I looked into designers that tried to minimize this gap between Hangul and Roman by finding a niche for Hangul Design. There are a few pioneers in Korean Communication Design that have devoted their design careers in researching Hangul and internationally spreading the alphabet. These designers have been researching and studying Hangul for years. In order to find the ideal opportunity space, I looked into various design solutions ranging from typeface design, Hangul installation to Unicode.

Sang Soo Ahn

Ahn is an internationally renowned Korean typographer, educator and founder of Ahn Graphics & PaTI. He was also the vice president of ICOGRADA from 1997–2001.²¹ His work has been influential not only in S. Korea but throughout the world's communication design community. Over 40 years of contribution in Hangul research, he looked into new ways of structuring Hangul typefaces. He tried to break away from the invisible box by creating a sans serif Hangul typeface that protrudes outwards when constructed. He was the first Korean designer to introduce the out-of-frame typeface.²²



Sang Soo Ahn's typeface

²⁰ David Brezina. [Challenges in multilingual type design](#). 2012

²¹ Ahn Sang Soo. www.thecreatorsproject.vice.com/blog. 2011

²² Ahn Sang Soo. <http://monsieurbandit.blogspot.com/> 2010



❧ Blossoms by Sang Soo Ahn

Ahn's typeface gives the opportunity to break away from the uniformed geometric shape, which condenses the letter spacing and yet enhances the counter space due to the protrusion. The strokes are also uniform and dense so they add more ink on the surface. This helps readability and adds a unique quality as a display typeface. However, Ahn's new elongated typeface distorts the original shape of Hangul. Therefore, it is ideal to use for a display typeface instead of a body text typeface. And lastly, Ahn's typeface is more focused on the Hangul design as opposed to Roman; hence, the unique characteristics of Hangul don't transfer nicely into Roman when multi-scripting.

Aaron Bell

Bell is a type designer interested in Hangul design. He was a Master in Typeface Design candidate in 2010 at University of Reading when he designed his multi-script typeface, Saja. His curiosity of Hangul originated from his background in Asian Studies and the distinctive writing system. He was especially drawn to Hangul's ability to quickly ensure universal literacy. During his visit to S. Korea, Bell realized the conflicting styles and inconsistency in multi-scripting within Korean magazines.²³ While in Korea, a specific typeface caught his attention, which influenced the core design of his typeface.



Café signage that influenced Saja.

"When developing multi-script typefaces, some talk about "homogeny" and "unity", but the ideal approach is to find harmony—even when the scripts themselves are dissonant."²⁴ He designed his Saja typeface for Hangul and Roman with two goals in mind: to create multi-script typefaces with an eye toward harmonization and also design the first Hangul typeface that includes a true italic.

Saja is a multi-script serif typeface designed specifically for a magazine setting. It carries 4 different weights and styles: Saja Book, Book Italic,

²³ Aaron Bell. [AaronBell_Saja ROP.pdf](#). London, 2011

²⁴ Aaron Bell. [AaronBell_Saja ROP.pdf](#). London, 2011

Regular and Regular Italic. However, the Hangul typeface is clumsy in proportion, crude in form and the lack of knowledge in the Korean language is apparent in his design. “People make decisions based on familiar shapes of one’s native script, so a designer who is designing for more than one script will be a native reader and speaker of one but not the other(s).”²⁵

adhesion. *adhesion.*
안녕하세요. 안녕하세요.
adhesion. *adhesion.*
안녕하세요. 안녕하세요.

Saja, a multi-script typeface, designed by Aaron Bell.

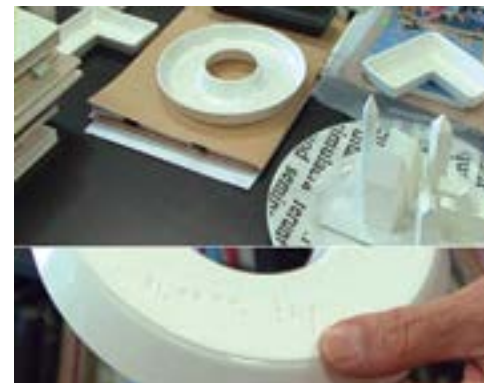
Although Hangul proportions are uneven, his attempt in trying to harmonize two different alphabets is highly encouraging and commendable. I would be curious to see if he takes this research further and produces more multi-script typefaces.

Harmonization is a term that needs to be addressed in this thesis. Usually type designers are familiar with one alphabet; hence, designers have to do thorough research when designing for a multi-script typeface.²⁶ Also, before designing the foreign alphabet, an understanding of the cultural and historical background is critical because what works in one solution isn’t always applicable for another. Often times, the designer still has to rely on the judgments of native readers and users in order to solidify the details of the alphabet.²⁷ Since some characteristics will not entirely transfer from one to another, the designer has to make a decision in picking out the most applicable qualities. Harmonization doesn’t necessarily mean simply unifying the aesthetics of multiple alphabets, that’ll be considered as homogenization, in which I am not recommending.

Instead, the measure of success in this research is solving as many problems as possible without deforming the cultural attributes. Also, not having one alphabet overpower the other, but instead treat Hangul with equal importance as Roman for better communication.

Jae Joon Han

Han is a Professor at Seoul Women’s University for Visual communication design and a Hangul designer. His interest for Hangul design sprouted in the mid 80s, even before the term “Hangul design” existed. Han’s main goals were to spread the interest of Hangul to a variety of people—designers and non-designers—and also to educate them about the national artifact through approachable daily objects. He wants to strengthen the foundation of Korean communication design. Therefore, Plug and Play became the key model for his Hangul research and his artifacts. Han designs Hangul toys, home goods and installations that can easily morph into different Hangul words. These everyday objects are fun, draws attention and collaborative.



Professor Han’s Plug and Play Hangul toys (top left), public display (top right) and Hangul plates (lower left).

He is also well known for public displays with his modular letterforms, which enhances curiosity even for those that are not familiar with typography and letterforms. His approach is more organic than the direction that I would like to pursue but it is a good reference point for looking into different possible prototypes. In summer 2012, I had the opportunity to meet him in person, which was an eye opening experience. He was a great reference to talk to since his knowledge and insight in the history of Hangul was new to me. Before, my main focus was visually oriented, simply mimicking the different styles. However, Han really emphasized the historical importance of Hangul design and the importance of maintaining the original form.

²⁵ Titus Nemeth. [Harmonization of Arabic and Latin Script](#). London, 2006

²⁶ Titus Nemeth. [Harmonization of Arabic and Latin Script](#). London, 2006

²⁷ David Brezina. [Challenges in multilingual type design](#). 2012

He instigated my earlier research in the history of Korean communication design.

Yong Je Lee

Lee is a type designer and a Professor at Kaywon Design University. Unlike comparing the structural differences in multi-scripting, Lee took a different direction—he studies and researches Unicode. Unicode is a standardized character set for encoding.²⁸ Unicode is important because even if you have the most well-designed character set, it would not be functional if the encoding isn’t consistent or if the Unicode didn’t carry the characters. Therefore, his research builds upon unifying the encoding system for punctuations to have better tools when multi-scripting. This is still a fairly new area for communication designers because Unicode used to be a concern of computer science or programming majors, not so much for designers. His area of research is slightly different from my direction, but Lee’s concern in multi-script setting is similar to mine that I can consider this direction for future related projects.

NAVER

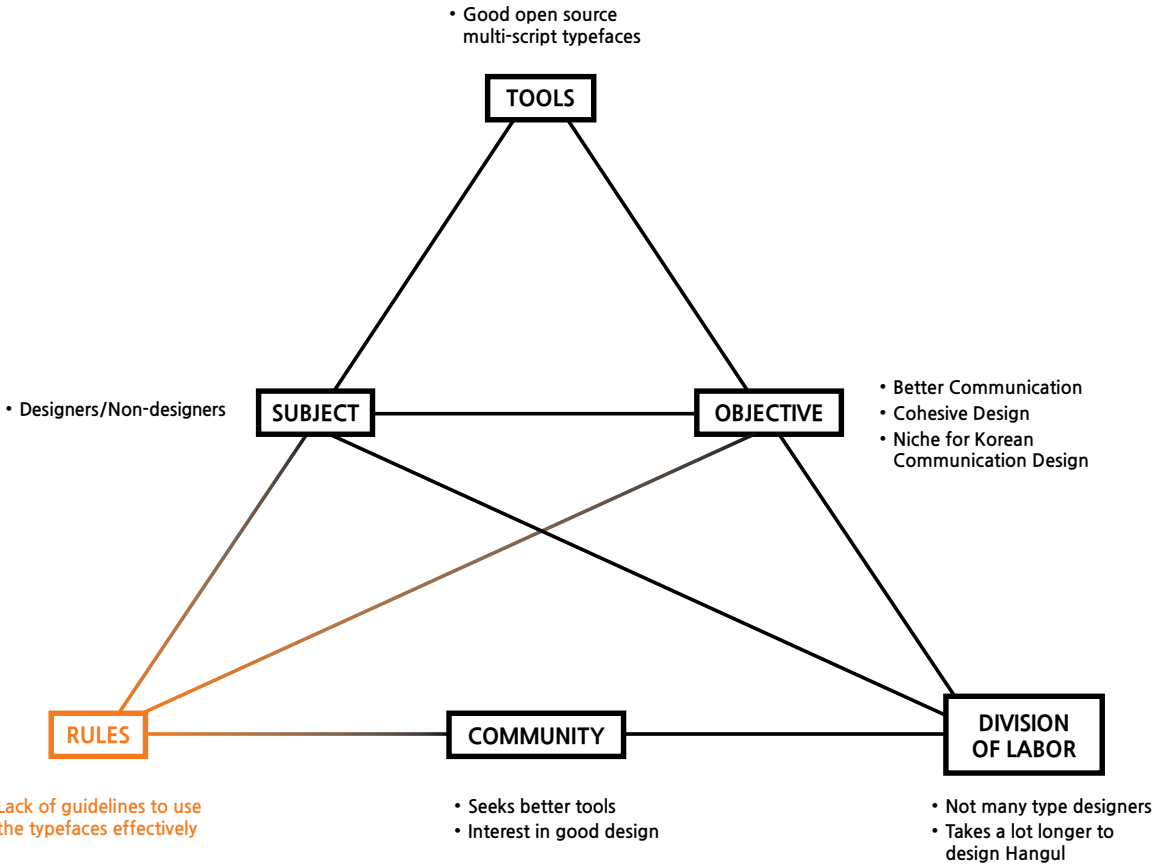
NAVER is the No.1 search engine company in S. Korea. Starting from 2008, NAVER has been annually launching a new typeface, Nanum Type Families, on Hangul Proclamation Day (Oct. 9th). They launched 5 typefaces in total: 1 serif, 3 sans serifs and a script typeface. These open source typefaces are designed in Roman and Hangul for multi-scripting and because of their high quality in design, it is common to see many of the Korean design solutions NAVER’s typefaces.



28 Unicode. <http://www.unicode.org/standard/WhatIsUnicode.html>. 2014

Nanum Type Families designed by NAVER. Nanum Gothic & Nanum Myeongjo 2008 (top left), Nanum Gothic Eco 2010 (top right), Nanum Brush Script 2011 (bottom left) and Nanum Barun Gothic 2013 (bottom right).

Despite the high quality, NAVER lacks in providing structural guidelines for the everyday practitioner to use their typefaces effectively. Even with the great tools (typefaces), designers are still struggling when multi-scripting. I looked into this problem area a bit deeper through Activity Theory.²⁹ Activity Theory provides a method of understanding and analyzing an event at a bigger scale and bridges the gap between the individual subject and the social reality.



It is apparent that the area that could improve in this triangle is the “Rules” section. There is a community in S. Korea that is eager to produce good design and we have the tools to produce them. However, we don’t have the structural guidelines to make all of this happen because of the short history of Korean communication design. Hence, I found the perfect opportunity space to research further for my thesis: provide guiding principles for the practitioners to utilize NAVER’s typefaces effectively when multi-scripting in Hangul and Roman.

29 Donna Kain, Elizabet Wardle. [Building Context: Using Activity Theory to Teach About Genre in Multi-Major Professional Communication Course, Technical Communication Quarterly](#). 2005



3 EARLY PROTOTYPES AND DEVELOPMENT

In summer 2013, I had the opportunity to visit S. Korea. During my visit, I spoke to a few Korean professors that have been conducting research on Hangul design. In the beginning of my thesis research, my knowledge of the problem area was very shallow. I reviewed 59 journals and pieces of literature to familiarize myself with the ongoing discourse. The most common topic was about disharmony in Arabic and Roman, and not that many on Hangul and Roman—at least in the West. When I met with Professor Jae Joon Han in Korea, the concerns of the disharmony in multi-scripting amongst Korean designers’ were more prominent and clear. It is still an area that needs growth, but there are a few typographic forums and conferences called Typojanchi that meet regularly. With Professor Han’s recommendation, I was able to attend a summer Typography conference (4 lecture series) in Seoul, Korea. I met some of the forerunners in Hangul design, including the designers from my research, like Yong Je Lee and Jiwon Yu.

I spoke to Soojin Jun a Professor at Yonsei University in Korea. She received her Master’s and Doctoral Degrees from Carnegie Mellon University’s School of Design, so she is well aware of graphic design education in the West. During our discussion, one of the key findings was not being able to find balance and harmony when multi-scripting. A lot of her judgments come from many years of experience in typography and occasional inspirations from others’ works. But she says that it’s still hard to judge whether the selected pairing is the most suitable one when multi-scripting. After a while, she stayed with a standard template of hers and experimented less. At one point, without me bringing up NAVER’s typefaces, she mentioned that she uses NAVER’s Nanum Gothic for Hangul but not for Roman because together they are not visually balanced. And lastly, she usually gravitates toward her pre-made template, and is more hesitant to explore different pairings since it takes a longer time with a lot of effort.

Then, I spoke to Bon Min, a type designer at Apple. His experience ranges from designing Roman and Hangul fonts to working at a publishing company as an editor. For him, the most challenging part in multi-scripting is the proper license and ownership of the fonts. Each typeface has minute differences depending on the type foundry so being able to understand and recognize the subtle differences takes time. He had more monetary concerns with multi-scripting

compared to Professor Jun’s. Min’s judgment in choosing the right font comes from the details of the letterforms but also how much they cost. This is a great example why NAVER’s Nanum Type Families should be more dispersed because of their high quality and open source typefaces.

3.1 Early stage Experiments

My findings aligned with my earlier research and hypothesis: S. Korea needs a better typographic guiding system or principles when multi-scripting. With my findings, I conducted some basic experiments—mainly focusing on the fundamentals of typography and communication design. I used NAVER’s Nanum Type Families to familiarize myself with the nature of these characters. First, I played with Nanum Gothic because it is the most neutral face in the family and is true to the original form of Hangul. Hangul was designed with a hint of rounded corners, which Nanum Gothic mimics perfectly in both Hangul and Roman.

I then traced the letterforms individually to look at the subtle details and proportions of each alphabet. In calligraphy, every Roman letterform follows a strict proportion ratio. Usually C, D, G, O and Q fit within a square, A, H, K, N, T, U, V, X, Y and Z are $\frac{3}{4}$ of the square and B, E, F, L, R, P and S are $\frac{1}{2}$.³⁰ Nanum Gothic’s Roman letters followed these proportions, indicating that the designer is knowledgeable in both alphabets.



Tracing Nanum Gothic letterforms (left), Roman characters ratio (right).

³⁰ Thomas E. French, Robert Meiklejohn. The Essentials of Lettering. 1912

Next, I compared the type size for both Hangul and Roman. Compared to Roman, Hangul is much larger in type size and

Same Typesize

Hangul is much bigger than Roman.

awkwardly sitting on the baseline. The designer has to manually reduce the type size for Hangul and shift the baseline so that visually one alphabet doesn't overpower the other.

Another comparison is readability and legibility. I looked into leading and how much line space Hangul occupies in comparison to Roman. Because of the geometric shape, Hangul either requires additional leading or Roman should reduce in leading when designing on the same page. Because of the way the letters are structured, Hangul becomes much shorter in length compared to Roman.

글자 간격 Did the 변하나? spacing change?

55pt / 40pt Hangul requires additional leading because of the geometric structure.

3.2 Experiments in Context

Once I understood the structure of the typefaces and their characteristics, I applied them in context. I chose two design platforms—street signage and magazine design—that could benefit from using Nanum Gothic.



Original signage (left), New signage with Nanum Gothic (right).

Even though this opens up a whole different set of concerns, this was a great experiment because the new signage seemed to improve in readability and legibility from a distance. This indicates that Nanum Gothic works well in various sizes.

Next, I chose a Korean magazine that only used Roman alphabets on the cover. Many times, using foreign alphabets portray sophistication. And because of this reason, many Korean magazines use Roman fonts on the cover. But why are we ignoring our precious artifact, Hangul? For my experiment, I showed equal importance for both alphabets in the mock magazine cover. Through these two experiments, I realized that Nanum Gothic is suitable for display text.



Original magazine (top), New magazine with Nanum Gothic (bottom).

And lastly, I tried setting a longer passage of text with Nanum Gothic. This is when the ability to read and understand different alphabets become critical because multi-scripting requires a lot of scrutinization in design details. Usually when Hangul is next to Roman, the type size is too big and the page becomes very heavy with ink. The characters are also very geometric, which doesn't give enough line spacing. In order to design effectively, the designer needs to consider how to line up the baseline for both alphabets and then reduce Hangul's type size to optically harmonize them. I will show you the design details in the next two spreads. This experiment shows that Nanum Gothic is appropriate for body text as well. And with these three different approaches, I applied the same scrutiny with the rest of Nanum Type Families.

Le Petit Prince

So I lived my life alone, without anyone that I could really talk to, until I had an accident with my plane in the Desert of Sahara, six years ago. Something was broken in my engine. And as I had with me neither a mechanic nor any passengers, I set myself to attempt the difficult repairs all alone. It was a question of life or death for me: I had scarcely enough drinking water to last a week. The first night, then, I went to sleep on the sand, a thousand miles from any human habitation. I was more isolated than a shipwrecked sailor on a raft in the middle of the ocean. Thus you can imagine my amazement, at sunrise, when I was awakened by an odd little voice. It said:

“If you please-- draw me a sheep!”

“What!”

“Draw me a sheep!”

I jumped to my feet, completely thunderstruck. I blinked my eyes hard. I looked carefully all around me. And I saw a most extraordinary small person, who stood there examining me with great seriousness. Here you may see the best portrait that, later, I was able to make of him. But my drawing is certainly very much less charming than its model. That, however, is not my fault. The grown-ups discouraged me in my painter’s career when I was six years old, and I never learned to draw anything, except boas from the outside and boas from the inside.

Now I stared at this sudden apparition with my eyes fairly starting out of my head in astonishment. Remember, I had crashed in the desert a thousand miles from any inhabited region. And yet my little man seemed neither to be straying uncertainly among the sands, nor to be fainting from fatigue or hunger or thirst or fear. Nothing about him gave any suggestion of a child lost in the middle of the desert, a thousand miles from any human habitation. When at last I was able to speak, I said to him:

“But-- what are you doing here?”

And in answer he repeated, very slowly, as if he were speaking of a matter of great consequence:

어린 왕자

진심을 털어놓고 이야기할 사람도 없이 혼자 살아오던 육년 전 어느 날, 나는 사하라 사막에서 비행기 사고를 만났다. 모터에서 뭔가 부쉘진 것이다. 기관사나 승객이 없어서 나는 그 고장을 혼자서 수리해야 했다. 나로서는 죽느냐 사느냐의 문제였다. 가진 거라곤 기껏 일주일 마실 물밖에 없었다.

첫날 저녁, 나는 사방 어느 곳을 봐도 사람이 사는 곳에서 수천 마일 떨어진 사막에 홀로 누워 잠들었다. 넓은 바다 한가운데서 난파돼 뗏목을 타고 가는 뱃사람도 나보다는 덜 외로웠을 것이다. 그러니 동틀 무렵 어떤 작은 목소리가 불러 깨웠을 때 내가 얼마나 놀랐겠는가. 그 목소리는 이렇게 말했다.

“저... 양 한 마리만 그려 줘요!”

“뭐!”

“양 한 마리만 그려...”

나는 벼락이라도 맞은 듯 벌떡 일어났다. 그리고 눈을 비비고 주위를 살폈다. 이상한 낮선 어린 아이가 엄숙하게 나를 바라보고 있었다. 여기 그의 초상화가 있다. 이 그림은 내가 훗날 그를 모델로 그린 그림 중에서 가장 훌륭한 것이다. 그러나 내 그림이 실제 모델만큼 멋이 있으려면 아직 멀었다. 그러나 이건 내 잘못이 아니다. 내 나이 여섯 살 때 나는 어른들 때문에 실망해 화가라는 직업에서 멀어졌다. 그나마 속이 보이는 보아 뱀, 그리고 보이지 않는 보아 뱀밖에는 한번도 그림을 그려본 적이 없지 않은가.

아무튼 나는 눈을 휘둥그레 뜨고 홀연히 나타난 그 모습을 바라보았다. 사람 사는 곳에서 사방으로 수천 마일이나 떨어진 곳 아닌가. 그러나 내가 본 어린 아이는 길을 잃은 것 같지는 않았다. 피곤이나 굶주림, 목마름에 시달려 녹초가 되지도 않았으며, 겹에 질려 있는 모습도 아니었다. 사람들이 있는 곳에서 수천 마일 떨어진 사막 한가운데서 길을 잃은 어린 아이의 모습이 결코 아니었다. 나는 마침내 입을 열어, 겨우 말했다.

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그 애는 무슨 중대한 일인 것처럼 아주 천천히 말을 되풀이했다.

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“저... 양 한 마리만 그려 줘요...”

After reducing typesize, increasing leading and opening up tracking, Hangul has more breathing room. It is a lot easier to read the content because of the open counter spaces.

7.25pt / 12pt / 55 Tracking / Using Nanum Gothic

8pt / 11.6pt / 0 Tracking / Using Nanum Gothic

“We need to improve the typographic tools in a meaningful way that future designers can communicate better than we did.”

David Brezina
TYPE DESIGNER

4 FINAL DESIGN

Originally, the goal was to create 5 guiding principles per typeface in kinetic form since it'll be easier to share and reach out to users. I quickly made a 2 min. video in After Effects, focusing on the prelude of the Nanum Type Families and introducing the various typefaces.



Screenshots of the video.

While going through a few versions and iterations, I realized that the video's voice seemed more of an advertisement for NAVER's typefaces instead of providing typographic suggestions. Also, it seemed to be more effective to have the final deliverable in a printed form so that the user can directly go to the specific guiding principle that he wants to learn. So based on the content from the kinetic form, I made a few iterations of the early version of guiding principles. At first I chose a tan and turquoise color palette but when I tested the principles with one of my friends, he questioned the color choices and the connection with the subject matter. In order to resolve this problem, I decided to represent the colors from the Korean flag—red and blue. However, I

wanted to avoid primary colors; therefore, within those hues, I tweaked them to be less kitschy.



Earlier version of the printed guiding principles.

4.1 Final Design

Based on the experiments and low-fi prototypes, the main typographic elements I focused on for the final guiding principles, were legibility, readability, balance, counterspace, harmony when pairing the same typeface in different alphabets, true to the original shape, typographic anatomy, typographic voice, and lastly usability. These are the fundamental elements of communication design that easily gets ignored and taken for granted. However, it is critical to have these elements from the basics and solidify the foundation when multi-scripting. My main target audiences are experts in typography and designers that know Korean. Because of that, I designed both Hangul and Roman guiding principles. I designed these guiding principles to live as a pdf form since the project itself isn't big enough to occupy a domain name. However, I also designed them for both digital and print so in case the user wants to print these guiding principles, not

only will they be informative but they will function as a booklet that is “well designed”. For my thesis presentation, I designed two 10"x10" booklets that contain a total of 15 guiding principles (5 typefaces total, 3 principles per typeface) when multi-scripting with Nanum Type Families. A lot of the principles are based on my previous research and findings. There are a total of 5 typefaces: 1 serif, 3 sans serifs and 1 script. I will go through each typeface and explain the key principles.

35"x53" Thesis Poster and 10"x10" Guiding Principles





왜 Y

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789!@#\$%^&*()<>?,:;'"[]{}
가나다라마바사아자차카타파하

Nanum Myeongjo

Nanum Myeongjo is a serif typeface, which originates from the Old Style, meaning the stress is not entirely perpendicular but the strokes have drastic thick and thin weights. Because the x-height is bigger than normal serifs, when you are multi-scripting, you'll realize that Hangul is extremely big and above the baseline. So, you have to manually reduce the size of Hangul and shift the baseline.

01 Nanum Myeongjo is appropriate for both display text and body text. However, because of the thick and thin strokes, it may appear light when typeset in smaller scale because the counter space becomes wider.

X 엑스

02 Nanum Myeongjo's x-height is higher than other serifs. The ascender height also exceeds the cap height. These characteristics make the typeface visually condensed and bigger than its usual type size.

a a a a a

NANUM GARAMOND MRSEAVES CASLON TIMES
MYEONGJO

03 Adjust type size and baseline when multi-scripting. The type size for Hangul needs to be smaller and the baseline needs to shift lower to match with Roman regardless of the type size.

size 크기

Both 50 pt / 0 pt Baseline shift

size 크기

Roman 50 pt / 0 pt Baseline shift
Hangul 36 pt / -1.3 pt Baseline shift

케 k

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789!@#\$%^&*()<>?,:;'"[]{}
가나다라마바사아자차카타파하

Nanum Gothic Eco

Nanum Gothic Eco is a funny one. It is a sans serif that has holes in the strokes so that it can save ink when it is printed. The idea is that when it's printed, the ink will smudge and fill in the holes. Ideally, it should be used for generic use such as printing everyday office reports on cheaper paper; however, the holes become a unique quality that it would be playful to use it as a digital display typeface.

01 Only use Nanum Gothic Eco for printing everyday, generic information. This typeface is designed to save ink when printing large numbers of copies. Therefore, it is not for special occasions like, poster, packaging, or book design.

02 Try Nanum Gothic Eco as a digital display text. Though this is designed for print, the holes add unique qualities, in which it would be playful to use as a display face on digital platforms.

Digital
디지털문자

03 Type size for this typeface is critical because the holes will be visible when it is printed after a certain size.

Nanum Gothic Eco 7 PT
Nanum Gothic Eco 8 PT
Nanum Gothic Eco 9 PT
Nanum Gothic Eco 10 PT
Nanum Gothic Eco 11 PT
Nanum Gothic Eco 12 PT
Nanum Gothic Eco 13 PT
Nanum Gothic Eco 14 PT
Nanum Gothic Eco 15 PT

Dark

Light

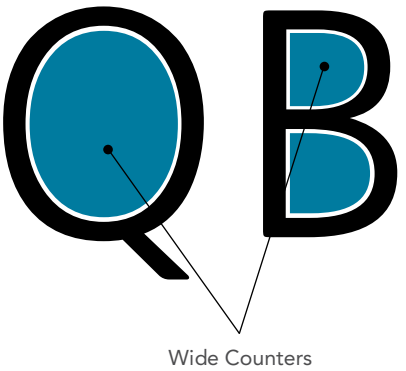
큐 Q

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789!@#\$%^&*()<>?,:;'"[]{}
가나다라마바사아자차카타파하

Nanum Gothic

Nanum Gothic really mimics the original form of Hangul because Hangul was designed as a sans serif with hints of rounded corners. Because it has a lot of counter space, it helps readability but it makes Hangul seem very wide and compact. So for this typeface, it is critical to open up the tracking compared to Roman.

01 Nanum Gothic has a lot of counter space and negative space. This typeface is very clean and simple, which provides great readability. Therefore, it is suitable for both display and body text. However, it does appear lighter than other regular weight typefaces.



02 Kern, Kern and Kern. Because of the wide counter spaces, kerning must be done optically, not mathematically when using Nanum Gothic for both Hangul and Roman.

Kerning Kerning

36 pt / 43.2 pt Mathematically kerned 36 pt / 43.2 pt Optically kerned

03 Treat Hangul and Roman separately. When optically typesetting in Roman and Hangul, Hangul is structurally wider. Therefore, Hangul needs to be smaller in type size, wider in leading and spread out in tracking in comparison to the Roman alphabet.

| | | | |
|---|--|---|---|
| So I lived my life alone, without anyone that I could really talk to, until I had an accident... | 진심을 털어놓고 이야기할 사람도 없이 혼자 살아오 던 육년 전 어느 날... | So I lived my life alone, without anyone that I could really talk to, until I had an accident... | 진심을 털어놓고 이야기할 사람도 없이 혼자 살아오던 육년 전 어느 날... |
| Both 8 pt / 11.6 pt / 10 Tracking | | 8 pt / 11.6 pt / 10 Tracking | 7.25 pt / 12 pt / 40 Tracking |

피 P

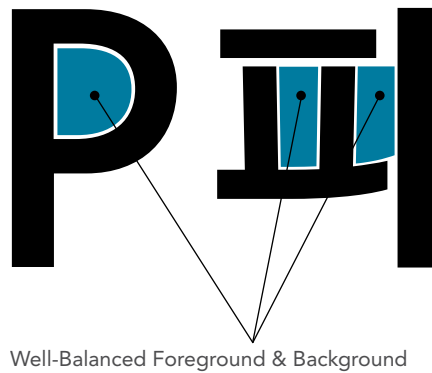
ABCDEFGHIJKLMNOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz
 0123456789!@#\$%^&*()<?>.,/:'"[]{}
 가나다라마바사아자차카타파하

Nanum Barun Gothic

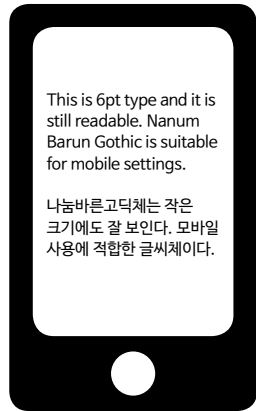
Nanum Barun Gothic is designed for a mobile platform, really catering towards the current technology. It has really clean straight strokes, which help the readability even at a smaller scale. Also, it has a well-balanced foreground and background that adds more ink on the surface, making the letterforms richer.

01 Nanum Barun Gothic is modern and yet true to its original Hangul design. With its clean-cut letterforms, this typeface feels current. It also maintains the original form of Hangul: having equal amount of positive and negative space. Also, it is very detail oriented—all the way to the glyphs.

02 This typeface is darker (more ink on a page) and condensed. These make it easier on the eyes because of the equal amount of foreground and background relationship. Therefore, this is ideal for both body and display text.



03 Because of the clean form, this typeface is readable even at a very small scale for both Hangul and Roman.



01 2 R

ABCDEFGHIJKLMNOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz
 0123456789!@#\$%^&*()<?>.,/:'"[]{}
 가나다라마바사아자차카타파하

Nanum Brush Script

And lastly Nanum Brush Script captures the brush movement but its expressive quality is limited in application. Because the stress is awkwardly angled and the dynamic ascender and descender, Roman is less handsome in design compared to Hangul. Therefore, it is ideal to use Nanum Brush Script for Hangul and pair Roman with a different typeface, which will make it more cohesive.

01 Nanum Brush script is much smaller in type size compared to other scripts. Also, the punctuation sits way below the baseline, where you have to manually adjust it.

Small in scale.
 Nanum Brush Script 9 pt / 3 pt Baseline shift

Small in scale.
 Monotype Corsiva 9 pt

Small in scale.
 Apple Chancery 9 pt

02 Hangul is more refined than Roman. Hangul characters are stronger in design because the stress is awkwardly angled in Roman.

abcdefghijklmnopqrstuvwxyz

03 Design Hangul with this typeface but for contrast, pair Roman with a different typeface. The active characters detract from good readability and legibility.

가자! ——— Let's Go!

Avenir LT Std

5 CONCLUSION

The short history of Korean communication design should not be a reason to limit or hinder the research in Hangul design, which still has a long way to go. However, it is promising to see many Korean designers’ and company’s interest and experimentation on this subject matter. The chosen case study is only the tip of the iceberg. These guiding principles are the first of a series of papers and projects that need to be distinctive on this subject. In order to deepen the research on multi-scripting, I would like to design my own multi-script typeface. For a bigger discourse, I expect to collaborate with East Asian cultural scholars and experts in the Korean language. This is the perfect opportunity to explore more options and accept the challenges for original solutions. Finding the right balance and harmony will be a continuous design problem that needs to be solved.

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