Typeface Design for a Thai Context

An English Typeface with Thai Stylistic Considerations

Napawan Sawasdichai
Rochester Institute of Technology
College of Imaging Arts and Sciences
School of Design
Department of Graphic Design
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Part I Thesis Document

Part II Appendices

Chief Advisor :
Associate Professor Deborah A. Beardslee

Date : _____ *11 May 1999* _____

Associate Advisor :
Associate Professor Bruce Ian Meader

Date : _____ *11 May 1999* _____

Associate Advisor :
Associate Professor Marie Freckleton

Date : _____ *11 May 1999* _____

School of Design Chairperson :
Associate Professor Nancy Ciolek

Date : _____ *5-11-99* _____

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I also prefer to be contacted each time a request for production is made. I can be reached at the following address:

Napawan Sawasdichai

88/50 Pruksachat Soi 9
Sukhapiban 3 Rd.
Saphansung
Bangkok 10240
THAILAND

Tel 662 373-2505
email plenoke@hotmail.com

Date: May 22, 1999

Many typefaces have been developed over time in order for designers to be able to choose the most appropriate typeface for each particular project. Many graphic designers choose specific typefaces to achieve special effects which can vary from the sophisticated to the primitive. However, there are only a few typefaces that designers can choose when working on projects that need to reflect characteristics of *Eastern* cultures.

In Thailand, the English language is generally used to communicate with a large number of foreigners who are traveling in the country. The Thai have adopted the use of English typefaces to be used in various kinds of printed or digital information. Since many of these materials are used for marketing campaigns in order to promote tourism in Thailand, they have the opportunity to reflect the values of Thai culture to foreign visitors. Therefore the images or other graphic elements, including the typeface, should reflect Thai characteristics.

This thesis involves the design of a new English typeface which reflects the aesthetic values of Thai culture. It incorporates Thai stylistic considerations, including the unique appearances and forms of Thai artifacts, into the design of English letterforms. A primary purpose of this new typeface would be for use as a display typeface in printed or digital applications regarding Thai subjects, which are distributed inside and outside of Thailand.

ลืbҫɑÉʃɡhîĵʌเท
ทอ̃pฦฦรธเผิทนสเbถ
ABCDEFGNIJKLM
ЛOГQกรโบบพสบ̣ç
0123456789
[.,!?ย฿%£]
--

FUSAKA

A B C d E F G H
I J K L M N O P
Q R S T U V W X
Y Z 1 2 3 4 5 6 7 8 9 0

Typeface "Linotype MhaiThaipe face"

The typeface "Linotype MhaiThaipe face" was designed by Markus Remscheid in 1997, and the copyright is reserved by Linotype Library. This typeface was created by adapting Thai characters into English letterforms. This precedent shows an example of work which bridges western culture and eastern culture through the design of letterforms. However, this typeface is unsuccessful in the aspects of legibility and proportional relationships within a font. Therefore, the thesis study can benefit from this precedent by considering the weaknesses and the strengths of this design solution.

Typeface "Fusaka"

The typeface "Fusaka" was created by graphic designer and P22 type foundry co-founder, Michael Want. Fusaka is a typeface which bridges Kanji and Roman letterform styles. As in Kanji, each character fits into a square. This accentuates the first-glance appearance of Fusaka as Chinese or Japanese and allows it to be set either horizontally or vertically. A strong aspect of this typeface is the proportional relationships within the font; however, it does not succeed well in the aspect of legibility. As a result, this thesis study can benefit from this precedent by considering the weaknesses and the strengths of this design.

Material Resources

This thesis synthesized two main research areas related to Thai forms and English letterforms. The first research area investigated Thai forms by concentrating on their artifacts including Thai architecture, Thai arts and crafts, and Thai letterforms. After the most prevalent forms in the Thai cultures were identified, these forms were considered for incorporation into English letterforms.

The other research area investigated English letterforms including parts of letterforms, the unity of typeface design, proportions of letterforms, optical adjustments, character set considerations, typeface classifications, and legibility. The purpose of this research was to investigate the considerable requirements of designing an English typeface.

During the summer of 1998, the research on Thai forms was conducted. Most of the information was gathered from Thailand. Some extremely useful books about Thailand, *The Art of Thai Patterns, Arts and Crafts of Thailand,* and *Thai Style* were used. Furthermore, research on Thai culture was also done via the internet to gather more information.

The research on English letterforms was conducted during the winter of 1998. All information was found in the Wallace Library at the Rochester Institute of Technology (RIT), and in some local bookstores in the area of Rochester, New York.

The research on Thai forms is summarized in the following statements.

Thai Art

Most Thai art is derived from nature such as leaves, vines, flowers, clouds, fire and animals. For example, *Kra-chang* is derived from the lotus bud, and *Kra-nok* reflects the flame of fire. In addition, some Thai art is conceived by an artisan's imagination that is inspired by ancient Thai legends: the *Ramayana*, the *Himmaphan*, or worked by Buddhist teachings. Moreover, Thai art may display Chinese or Indian influences. Each form of Thai art can be repeatedly placed to create a unique pattern. As a result, Thai patterns have been used for ornament in Thai crafts such as on silverware, ceramics, or textiles. Also, it can be found in Thai architecture, in drawings on walls of temples or in mural paintings.

Kra-chang   Kra-nok

Thai Crafts

The crafts of Thailand may be divided into ten categories by the techniques that artisans or craftspeople use for generating these products. The ten techniques are drawing, engraving, turning, sculpting, modeling, figuring, moulding, plastering, lacquering, and beating. Thai crafts may also be divided into ten categories according to the various kinds of materials used. The ten categories are gold & black lacquer, goldwork, silverware, nielloware, ceramics, mother-of-pearl inlay, basketry, woodcarving, textile, and garland or floral arranging.

Goldwork   Gold & black lacquer   Mother-of-pearl inlay

Silverware   Ceramics   Basketry
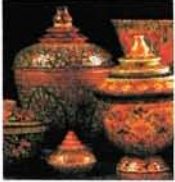
Nielloware   Woodcarving   Textiles

Flower arranging

7

Ceremonial crafts

Village crafts

The crafts can also be divided in two subcategories according to the people who use these crafts or the places in which these products are used. The first category is ceremonial crafts, which are used by the royal family and in religious ceremonies. The characteristics of ceremonial crafts are splendid and richly decorated. The second category is village crafts which are used by the general population. Village crafts, unlike ceremonial ones, have a characteristic of simplicity due to the materials used.

Thai Architecture

Thai architecture can be divided into three categories according to the residents of a building. The first kind of Thai architecture focuses on royal buildings in which the royal family have been living. The second kind relates to religious buildings such as temples and other kinds of architecture which involve religion. The last kind are domestic houses, typical Thai style homes where the general Thai people reside.

Royal building

Religious building

Domestic house

Cho-fa

These three kinds of Thai architecture all share four dominant characteristics which are triangular gables, multi-tiered roofs, elongated finials, and elevated bases. However, the royal buildings and the religious buildings are far more immense and ornate. The royal buildings and the religious buildings are decorated with more valuable materials such as pieces of colored glass, ceramic tiles, or even gold sheets. The multi-tiered roofs of the royal buildings or religious buildings also represent the status of their residents. For example, the building with a nine-tiered roof is the King's residence. A domestic house may have a two-tiered roof at most. Moreover, the elongated finial which is called *Cho-fa* is only found on royal buildings and religious buildings.

ก ข ฃ ค ฅ ฆ ง จ ฉ
ช ซ ฌ ญ ฎ ฏ ฐ ฑ ฒ
ณ ด ต ถ ท ธ น บ ป
ผ ฝ พ ฟ ภ ม ย ร ล
ว ศ ษ ส ห ฬ อ ฮ

Consonants

Tone marks

โ ไ ใ ◌ ◌ำ เ แ

Vowels

Thai Letterforms

Character Set

In the Thai language system, there are 44 consonant characters, which represent 20 consonant sounds. The 44 characters are grouped into three classes: high, medium and low, and are classified by their tonal qualities which are their inherent tones and their tonal interaction with tone marks.

There are nine short monopthong (single) vowel sounds and nine long counterpart vowel sounds plus three diphthong sounds in Thai. However, there are 28 so called vowel forms. Furthermore, there are five tones in Standard Thai: mid, low, falling, high and rising. However there are only four tone marks in Thai. The tonal value of the tone marks depends on the class of the initial consonants and the type of syllables (open or closed) that they mark.

Parts of Letterforms

When considering the forms of the Thai alphabet, four major components: head, mouth, tail, and loop, can be identified in the letterform construction. Each letterform may be composed of these parts differently.

ด
Head

ถ
Mouth

ล
Tail

พ์
Loop

Thai Writing System

In the Thai writing system, when letterforms are composed as a word, these letterforms remain unjoined. The Thai vowel forms do not all follow initial consonants; some are placed before the initial consonants, some after the consonants, some above the consonants, and some underneath the consonants. The vowels that are "complex" forms (i.e. composed of more than one part) can be placed around the consonants. In addition, the tone marks are placed above the initial consonant of the syllables whose tones they mark, or on top of a vowel if the vowel is placed above the consonant.
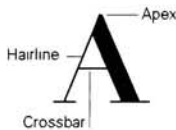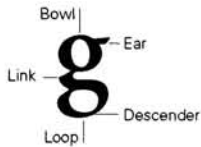
กรุงศรีอยุธยา

Thai writing system

9

The research on English letterforms is summarized in the following statements. All information and images shown in this research section were obtained from the book *Typographic Design: Form and Communication* written by Rob Carter, Ben Day, and Philip Meggs.

Parts of Letterforms

In English letterform there are major components of letterform construction as shown in the following list.

dxp — Capline, Meanline, x-height, Baseline

T — Arm, Stem, Terminal

k — Ascender, Leg

S — Spine
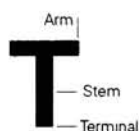
Baseline	An imaginary line upon which the base of each capital rests.
Capline	An imaginary line that runs along the tops of the capital letters.
Meanline	An imaginary line that establishes the height of the body of lowercase letters.
x-height	The distance from the baseline to the meanline. Typically, this is the height of lowercase letters and is most easily measured on the lowercase *x*.
Apex	The peak of the triangle of an uppercase *A*.
Arm	A projecting horizontal stroke that is unattached on one or both ends, as in the letters *T* and *E*.
Ascender	A stroke on a lowercase letter that rises above the meanline.
Bowl	A curved stroke enclosing the counterform of a letter. An exception is the bottom form of the lowercase roman *g*, which is called a loop.
Counter	The negative space that is fully or partially enclosed by a letterform.
Crossbar	The horizontal stroke connecting two sides of the letterform (as in *e*, *A*, and *H*) or bisecting the main stroke (as in *f* and *t*).

Parts of Letterforms (Continued)

Bowl
Ear
Link
Descender
Loop

Shoulder
Stroke
Tail

Eye

Apex
Hairline
Crossbar

Fillet
Serifs

Counter
Spur

Descender	A stroke on a lowercase letterform that falls below the baseline.
Ear	A small stroke that projects from the upper right side of the bowl of the lowercase roman *g*.
Eye	The enclosed part of the lowercase *e*.
Fillet	The contoured edge that connects the serif and stem in bracketed serifs.
Hairline	The thinnest stroke within a typeface which has strokes of varying weights.
Leg	The lower diagonal stroke on the letter *k*.
Link	The stroke that connects the bowl and the loop of a lowercase roman *g*.
Loop	See *Bowl*.
Serifs	Short strokes that extend from and at an angle to the upper and lower ends of the major strokes of a letterform.
Shoulder	A curved stroke projecting from a stem.
Spine	The central curved stroke of the letter *S*.
Spur	A projection – smaller than a serif – that reinforces the point at the end of a curved stroke, as in the letter *G*.
Stem	A major vertical or diagonal stroke in the letterform.
Stroke	Any of the linear elements within a letterform; originally, any mark or dash made by the movement of a pen or brush in writing.
Tail	A diagonal stroke or loop at the end of a letter, as in *R* or *j*.
Terminal	The end of any stroke that does not terminate with a serif.

DCGOQ

Curved capitals share a
common round stroke
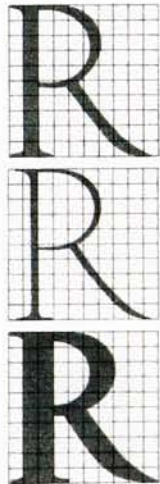
The Unity of Typeface Design

Letterforms in a typeface need to demonstrate visual similarities in order to bring wholeness to typography. As a result, letterforms share similar parts. A repetition of curves, verticals, horizontals, and serifs are combined to bring variety and unity to a typeface. For example, curved capitals share a common round stroke, capital serifs reoccur in similar characters, or the diagonal stroke of the *A* is repeated in *M, V* and *W.*

Proportions of Letterforms

Proportions of each letterform are an important consideration. There are major variables which control letterform proportion, and they have a significant impact upon the visual appearance of a typeface. These variables are shown in the following list.

> *The stroke width to cap height ratio*
> the ratio of stroke width to letterform height.

> *Contrast in stroke weight*
> the variation between the thickest and thinnest strokes of the letterform.

> *x-height and proportion*
> the relationship of the x-height to the height of capitals, ascenders, and descenders.

The stroke width to
cap height ratio

Optical adjustment in
pointed and curved letters

Optical adjustment in
Letters with vertical strokes

Optical adjustment in
two-stories capital and figures

MBNB

Optical adjustment in letters
with closed counterforms

Optical Adjustments

Some letterforms which are mechanically and mathematically constructed can cause serious problems because various forms within an alphabet appear optically incorrect. As a result, some letterforms need optical adjustments in order to achieve visual harmony within a font.

Pointed and curved letters
These letters need to be drawn slightly above and below baseline and capline to prevent them from appearing too small.

Letters whose vertical strokes determine their height
These letters need to be drawn slightly taller than letters whose height is determined by a horizontal stroke.

Two-storied capitals and figures
To balance these letters optically, the center is slightly above the mathematical center.

The letterforms with closed counterforms
The stroke weight of these letterforms are drawn slightly smaller than the stroke weight of letterforms having open counterforms.

Character Set

A font is a set of characters of the same size and style containing all the letters, numbers and marks needed for typesetting. A typographic font demonstrates structural unity when all the characters relate to one another visually. The weight of thick and thin strokes must be consistent, and the optical alignment of letterforms must appear even. The distribution of light and dark within each character and in the spaces between characters must be carefully controlled to achieve an optical evenness of tone within the font.

abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890& 1234567890& 1234567890&
¼½¾ ⅛⅜⅝⅞ ⅓⅔‰ 1234567890/1234567890-

ffifhflffiffl ÆŒßRpæœ√π=±+÷∞°·-—
ÂÅÁÇÍÎÏØÓÒÔÚ(.,::'"''!?^""''""*"-‹‹«»)
áéíóú åäëïöüàèìòùâêîôûøÁÉÍÓÚÅÄËÏÖÜ
™©®@#$s⁵¢ᶜ□Œ£¥%^*
{}[]¡¿¢§¶•†‡

Character set

Character Set (Continued)

In some display typefaces, the font might include only the twenty-six capital letters. In a complete font for complex typesetting, such as for textbooks, it is possible to have nearly two hundred characters. One set of characters in a font may include these types of characters: capitals, lowercase, small caps, lining figures, old style figures, superior and inferior figures, fractions, ligatures, mathematical signs, digraphs, punctuation marks, accented characters, dingbats, and monetary symbols.

Typeface Classifications

Most typefaces have been classified into five major categories, which are Old Style, Transitional, Modern, Egyptian (Slab Serif), and Contemporary (San Serif). However, some classification systems add a script, italic, decorative, stylized, or miscellaneous typeface into their categories for a wide range of some new and fanciful typeface which can not fit into the major categories. The five major classifications are shown in the following list.

Old Style
> These characters are originally hand-generated forms. Serifs are bracketed (that is unified with the stroke by a tapered, curved line). There is little contrast between the weight of thick and thin strokes.

Transitional
> These characters are more refined forms. Serifs are less heavily bracketed and become finer. There is more contrast between the weight of thick and thin strokes. Transitional characters are usually wider than Old Style characters.

Modern
> These characters are highly geometric forms. Serifs are horizontal hairlines that join the stems at a right angle without bracketing. There is extreme contrast between thick and thin strokes. Thin strokes are reduced to hairline.

Old Style
Old style

Transitional
Transitional

Modern
Modern

Egyptian

Egyptian

Contemporary

Contemporary

Flowing Script

Flowing script (Script)

Non-flowing Script
Roman Italic
ᴜɴᴄɪᴀʟ
𝕭lackletter

Non-flowing script (Cursive)

Egyptian (Slab Serif)

These characters have heavy square or rectangular serifs that are usually unbracketed. There is very little contrast between thick and thin strokes. In some slab-serif typefaces, all strokes are the same weight.

Contemporary (San Serif)

These characters have no serif. There is little or no contrast between the weight of thick and thin strokes. Many sans serif typefaces are geometric in their construction.

Furthermore, there are two script typeface classifications which are indicated in the book *Rookledge's International Type-finder* by Christopher Perfect and Gordon Rookledge.

Non-flowing script (Cursive)

This category includes script typefaces in which the letters remain unjoined when typeset and are 'non-flowing'. This category includes blackletter and uncial typefaces together with a small group of roman italic typefaces based on pen scripts.

Flowing script (Script)

This category includes script typefaces which, when typeset, give a 'joined up' script effect so that words appear to be 'flowing' as in handwriting. The letters are running and joining, and have a very slanted characteristic.

aaddddd

Sufficient contrast between
two similar letters

il

acegos

bdfhjmnpqrtu

kvwxyz

EFHILT

COQS

BDGJPRU

AKMNVWXYZ

Four groups of letters:
vertical, curved, vertical and
curved, vertical and oblique

LEGIBILITY
LEGIBILITY

legibility
legibility

cdo nr

Letter recognition in upper halves
and lower halves of letters

Legibility

Legibility is the degree to which typography is large and distinct enough so a reader can discriminate individual letters and words. Legibility represents qualities and attributes in typography that make type readable. These attributes make type possible for a reader to easily comprehend typographic forms. Legibility is characterized by three qualities of letterforms: contrast, simplicity, and proportion. Furthermore, there are some considerations which are shown in the following list.

Sufficient contrast between letterforms

Sufficient contrast must exist between the letters in a font so that they can be easily distinguished. For example, as the top stroke of letter a rises to become the ascender of the *d*, the intermediate forms are not easily deciphered by the reader.

Contrasting properties

Letters can be clustered into four groups, according to their contrasting properties. These are letterforms with strokes that are vertical, curved, a combination of vertical and curved, and a combination of vertical and oblique.

Letterform recognition

The upper halves of letterforms provide more visual cues for recognition than the lower halves. Likewise, the right halves of letters are more recognizable than the left halves of letters.

Thai Form Analysis

In this stage, all the research on Thai forms which had been done was analyzed to identify the most prevalent Thai forms from each category: Thai arts and crafts, Thai architecture, and Thai letterforms. This was done in order that these prevalent Thai forms could be considered for incorporation into the English letterforms. Accordingly, each prevalent Thai form was compared to particular English letterforms to identify their similarities and differences.

The analysis of Thai forms is shown in the following list.

Kra-chang

Thai art

> Kra-chang and Kra-nok are the most prevalent form found in Thai art. Kra-chang is derived from the form of a lotus bud. Kra-nok is a vegetal motif that also resembles a flickering flame.

Kra-nok

Thai crafts

> Vessels with elevated or multi-tiered bases are the most usual forms found in Thai crafts. This is included in ceramics, basketry, or silverware.

Cho-fa

Thai architecture

> The multi-tiered roof with triangular gables, and elongated finials, or *Cho-fa*, on the top of gable are the most common forms found in Thai architecture.

Triangle gable and
multi-tiered roof

Thai letterforms

> *Head, mouth, tail,* and *loop* are four major components in Thai letterforms which are considered as basic forms of Thai alphabet. These components appear in Thai letterforms differently. Some letters are composed of one or two components; some may have up to three components in the combination. Another important characteristic in Thai letterforms is that when they are typeset, they remain unjoined.

กรุงศรีอยุธยา

Unjoined letters

The details of each prevalent Thai form were analyzed by observing their construction, proportion, and specific features. The analysis is shown in the following tables *(Table 1, 2)*, which are subsections of *Matrix 1 (page 19)*.

Thai Forms
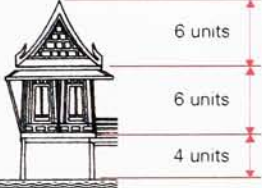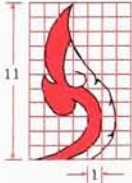
Construction: use of forms		Thai forms are basically constructed by geometric forms.
Proportion: contrast in stroke weight		Thick and thin strokes in Thai forms have extreme contrasts.
Proportion: x-height, ascender, descender	6 units 6 units 4 units	
Proportion: stroke width to cap height ratio	11 1	Stroke width to cap height ratio = 1:11

Table 1

Thai Forms
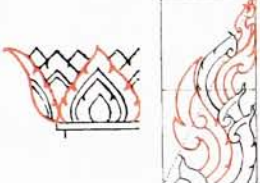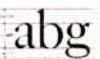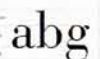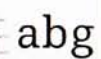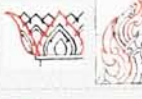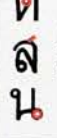
Specific feature: foot / serif		Thai vessels usually have a foot or base.
Specific feature: curvilinear forms		
Specific feature: head, tail, and loop	ด ส พ	Thai letterforms are usually composed of head, tail, and loop.
Specific feature: letterform connection	กรุงศรีอยุธยา	Unconnected letterforms

Table 2
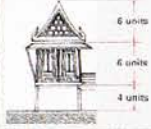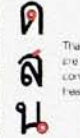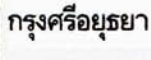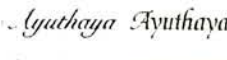
Matrix 1 was created to compare Thai forms to English letterforms. The primary objective was to identify similarities and differences between Thai forms and English letterforms according to each typeface classification. Each Thai form was compared to each of the seven typeface classifications including Old Style, Transitional, Modern, Egyptian (Slab Serif), Contemporary (San Serif), Flowing Script, and Non-flowing Script.

Comparison between Thai forms and letterforms in each typeface classification	Thai Forms	Letterforms: Old Style	Letterforms: Transitional	Letterforms: Modern	Letterforms: Egyptian	Letterforms: Contemporary	Letterforms: Flowing Script	Letterforms: Non-flowing Script
Construction: use of forms	Thai forms are Basically constructed by geometric forms	R	R	R		S	Being influenced by freehand writing, there is no major construction	Being influenced by freehand writing, there is no major construction
Proportion: contrast in stroke weight	Thick and thin strokes have extreme contrasts	T	T	T	T	T	*T*	*T*
Proportion: x - height, ascender, descender	6 units / 6 units / 4 units	abg	abg	abg	abg	abg		*A aby*
Proportion: stroke width to cap height ratio	Stroke width to cap height ratio = 1:11	R	R	R	R	R	*R*	*R*
Specific Feature: foot / serif	Thai vessels usually have foot or base.	⊥	⊥	⊥	⊥	There is no serif	There is no serif	⊥
Specific Feature: curvilinear forms		Th	Th	Th	Th	Th	*Th*	*Th*
Specific Feature: head, tail and loop	ด ล น — Thai letterforms are usually composed of head, tail and loop	A Y Q	A Y Q	A Y Q	A Y Q	A Y Q	*A Y Q*	*A Y Q*
Specific Feature: letterform connection	กรุงศรีอยุธยา — Uncorrected letterforms	Ayuthaya — Uncorrected letterforms	Ayuthaya — Uncorrected letterforms	Ayuthaya — Uncorrected letterforms	Ayuthaya — Uncorrected letterforms	Ayuthaya — Uncorrected letterforms	*Ayuthaya* — Connected letterforms	*Ayuthaya* — Uncorrected letterforms

Matrix 1

The results of the preceding matrix *(Matrix 1, page 19)* show that the letterforms in Modern, Flowing Script, and Non-flowing Script typefaces most resemble Thai forms. These specific conclusions on the preceding matrix were highlighted by yellow backgrounds in particular intersection locations. As a result, these typeface classifications were chosen as major influences on the new typeface development. These directions will be explored in the synthesis stage.

Comparison between Thai forms and letterforms in each typeface classification	Thai Forms	Letterforms: Modern	Letterforms: Flowing Script	Letterforms: Non-flowing Script
Construction: use of forms	Thai forms are basically constructed by geometric forms		Being influenced by freehand writing, there is no major construction	Being influenced by freehand writing, there is no major construction
Proportion: contrast in stroke weight	Thick and thin strokes have extreme contrasts.			
Proportion: x - height, ascender, descender	6 units / 6 units / 4 units	abg		A aby
Proportion: stroke width to cap height ratio	Stroke width to cap height ratio = 1:11	R		R
Specific Feature: foot / serif	Thai vessels usually have foot or base.		There is no serif	
Specific Feature: curvilinear forms		Th	Th	Th
Specific Feature: head, tail and loop	Thai letterforms are usually composed of head, tail and loop	A Y Q		A Y Q
Specific Feature: letterform connection	กรุงศรีอยุธยา Unconnected letterforms	Ayuthaya Unconnected letterforms	Ayuthaya Connected letterforms	Ayuthaya Unconnected letterforms

In this stage, all the understanding gained from research and conclusions from analysis were synthesized to establish design solutions. These design solutions are composed of design concepts, general concepts, design methods, and design alternatives.

Formal Concepts

Formal concepts were derived from the quintessential characteristics of Thai forms. Research and analysis indicate that most Thai forms are curvilinear, such as the forms which are derived from nature – flowers, leaves, vines, or flames. The repetition use of forms such as the repetitive use of similar contour or decorative patterns can be found in most Thai arts. Furthermore, Thai forms also appear in a set of progressive proportions, such as the forms which are derived from a lotus. As a result, these particular features – **curvilinear**, **repetitive**, and **progressive**, were used as the formal concepts of this thesis project.

Curvilinear	Repetitive	Progressive

Matrix 2

Graceful

Friendly

Historical

Addition

Subtraction

Substitution

Orientation shift
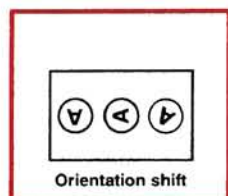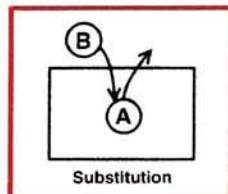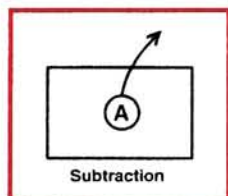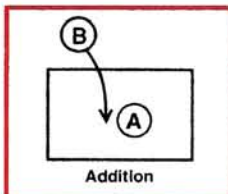
General Concepts

In addition to the formal concepts, general concepts were also established in order to create a more unique appearance and feeling to the overall look of the new typeface. As stated earlier, a main goal for this new typeface is that it would clearly reflect the aesthetic values of Thai culture. These general concepts were derived from unique Thai characteristics which are its graceful artifacts, its friendly people, and its historical culture. As a result, these particular features – **graceful**, **friendly**, and **historical** – were used as the formal concepts of this thesis project. These general concepts will influence and clearly be reflected in the overall look of the new typeface.

Design Methods

In order to incorporate Thai forms into English letterforms, design methods needed to be identified. There are four distinct and practical ways to change the visual syntax.

Add an element

Subtract or remove an element

Substitute one element for another

Shift the orientation of an element

These four methods were used in the ideation and implementation stages to develop the new typeface. The first three methods, which are addition, subtraction, and substitution, were used in the ideation stage to explore design alternatives, and the last method, which is orientation shift, was used in the implementation stage to develop and refine the final design.

Design Alternatives

Design alternatives were established in order to identify possible variations during ideation. The chosen three major influences: Modern, Flowing script, and Non-flowing script typefaces, the design methods, and the formal concepts were systematically combined as shown in the following chart to formulate various alternatives. Each of the three major influences was first altered by one of three design methods. Accordingly, each of the nine combinations of an influence and a design method were explored further by the application of one of the three formal concepts. The entire results for these combinations are shown on the next page *(page 24)*.

Influences	Design methods	Formal concepts

Modern
- Addition
  - Curvilinear
  - Repetitive
  - Progressive
- Subtraction
  - Curvilinear
  - Repetitive
  - Progressive
- Substitution
  - Curvilinear
  - Repetitive
  - Progressive

Non-flowing script
- Addition
  - Curvilinear
  - Repetitive
  - Progressive
- Subtraction
  - Curvilinear
  - Repetitive
  - Progressive
- Substitution
  - Curvilinear
  - Repetitive
  - Progressive

Flowing script
- Addition
  - Curvilinear
  - Repetitive
  - Progressive
- Subtraction
  - Curvilinear
  - Repetitive
  - Progressive
- Substitution
  - Curvilinear
  - Repetitive
  - Progressive

This shows the combinations generated from the preceding chart (*page 23*). When the three major influences are systematically altered by the three design methods and the three design concepts, the results for each combination are different. This formula yields twenty-seven design alternatives which are listed below.

Modern + Addition + Curvilinear
Modern + Addition + Repetitive
Modern + Addition + Progressive
Modern + Subtraction + Curvilinear
Modern + Subtraction + Repetitive
Modern + Subtraction + Progressive
Modern + Substitution + Curvilinear
Modern + Substitution + Repetitive
Modern + Substitution + Progressive

Flowing Script + Addition + Curvilinear
Flowing Script + Addition + Repetitive
Flowing Script + Addition + Progressive
Flowing Script + Subtraction + Curvilinear
Flowing Script + Subtraction + Repetitive
Flowing Script + Subtraction + Progressive
Flowing Script + Substitution + Curvilinear
Flowing Script + Substitution + Repetitive
Flowing Script + Substitution + Progressive

Non-flowing Script + Addition + Curvilinear
Non-flowing Script + Addition + Repetitive
Non-flowing Script + Addition + Progressive
Non-flowing Script + Subtraction + Curvilinear
Non-flowing Script + Subtraction + Repetitive
Non-flowing Script + Subtraction + Progressive
Non-flowing Script + Substitution + Curvilinear
Non-flowing Script+ Substitution + Repetitive
Non-flowing Script + Substitution + Progressive

These twenty-seven design alternatives will be used as the main direction to explore design ideation in the next stage of this project.

T S R A i a n k
Didot

T S R A i a n k
Snell Roundhand

T S R A i a n k
Mecidi Script

In this stage, all of the design alternatives listed on page 24 were explored. *Didot, Snell Roundhand,* and *Mecidi Script* typefaces were chosen to represent the major influences from Modern, Flowing script, and Non-flowing script classifications. All designs were based on these typefaces. The capital letters T, S, R, A, and the lowercase letters i, a, n, k from these typefaces were used in this original exploration. Letters "T" and "i" represent vertical letters. Letters "S" and "a" represent curved letters. Letters "R" and "n" represent vertical and curved letters. Letters "A" and "k" represent vertical and oblique letters. After the exploration, the designs that have qualities of Thai recognition, and legibility will be selected by the designer. These selected designs will be developed in the next step.

Alternative 1:
Modern + Addition + Curvilinear

T   i   T   i
S   a   S   a
R   n   R   n
A   k   1A   A   k   1B

Alternative 2:
Modern + Addition + Repetitive

T   i   T   i
S   a   S   a
R   n   R   n
A   k   2A   A   k   2B

Alternative 3:

Modern + Addition + Progressive

T i   T i
S a   S a
R n   R n
A k 3A   A k 3B

Alternative 4:

Modern + Subtraction + Curvilinear

T i   T i
S a   S a
R n   R n
A k 4A   A k 4B

Alternative 5:

Modern + Subtraction + Repetitive

T i   T i
S a   S a
R n   R n
A k 5A   A k 5B

Alternative 6:

Modern + Subtraction + Progressive

T i   T i
S a   S a
R n   R n
A k   6A   A k   6B

Alternative 7:

Modern + Substitution + Curvilinear

T i   T i
S a   S a
R n   R n
A k   7A   A k   7B

Alternative 8:

Modern + Substitution + Repetitive

T i   T i
S a   S a
R n   R n
A k   8A   A k   8B

Alternative 9:

Modern + Substitution + Progressive

T i S a R n A k 9A

T i S a R n A k 9B

Alternative 10:

Flowing Script + Addition + Curvilinear

T i S a R n A k 10A

T i S a R n A k 10B

Alternative 11:

Flowing Script + Addition + Repetitive

T i S a R n A k 11A

T i S a R n A k 11B

Alternative 12:

Flowing Script + Addition + Progressive
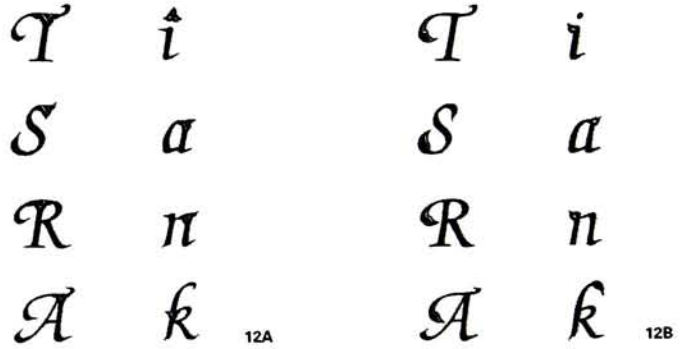
$$T \quad \hat{i} \qquad\qquad T \quad i$$
$$S \quad a \qquad\qquad S \quad a$$
$$R \quad n \qquad\qquad R \quad n$$
$$A \quad k \quad \text{12A} \qquad A \quad k \quad \text{12B}$$

Alternative 13:

Flowing Script + Subtraction + Curvilinear

$$T \quad i \qquad\qquad T \quad i$$
$$S \quad a \qquad\qquad S \quad a$$
$$R \quad n \qquad\qquad R \quad n$$
$$A \quad k \quad \text{13A} \qquad A \quad k \quad \text{13B}$$

Alternative 14:
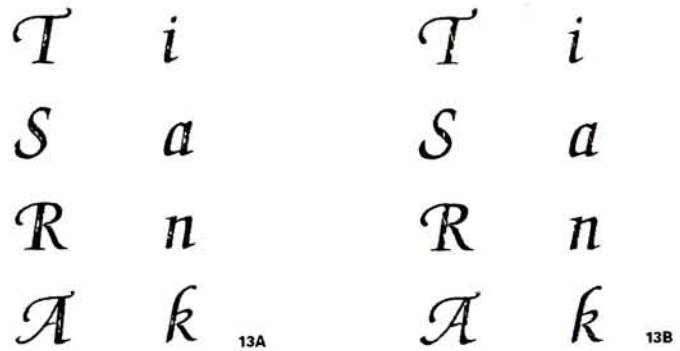
Flowing Script + Subtraction + Repetitive

$$T \quad i \qquad\qquad T \quad i$$
$$S \quad a \qquad\qquad S \quad a$$
$$R \quad n \qquad\qquad R \quad n$$
$$A \quad k \quad \text{14A} \qquad A \quad k \quad \text{14B}$$
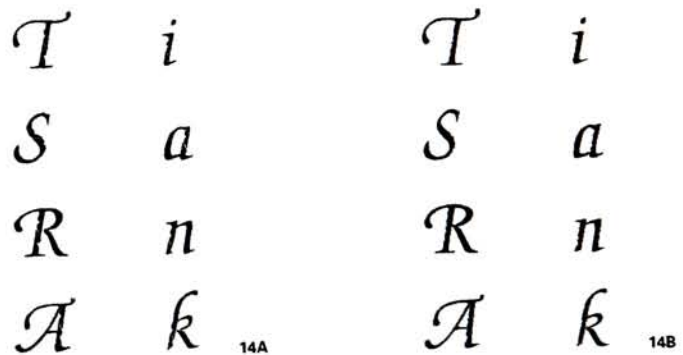
Alternative 15:

Flowing Script + Subtraction + Progressive

$\mathcal{T}$ i $\mathcal{T}$ i

$\mathcal{S}$ a $\mathcal{S}$ a

$\mathcal{R}$ n $\mathcal{R}$ n

$\mathcal{A}$ k 15A $\mathcal{A}$ k 15B

Alternative 16:

Flowing Script + Substitution + Curvilinear

$\mathcal{T}$ i $\mathcal{T}$ j

$\mathcal{S}$ a $\mathcal{S}$ a

$\mathcal{R}$ n $\mathcal{R}$ n

$\mathcal{A}$ k 16A $\mathcal{A}$ k 16B

Alternative 17:

Flowing Script + Substitution + Repetitive

$\mathcal{T}$ i $\mathcal{T}$ i

$\mathcal{S}$ a $\mathcal{S}$ a

$\mathcal{R}$ n $\mathcal{R}$ n

$\mathcal{A}$ k 17A $\mathcal{A}$ k 17B

Alternative 18:

Flowing Script + Substitution + Progressive

$$T \quad i \qquad T \quad i$$
$$S \quad a \qquad S \quad a$$
$$R \quad n \qquad R \quad n$$
$$A \quad k \quad \text{18A} \qquad A \quad k \quad \text{18B}$$

Alternative 19:

Non-flowing Script + Addition + Curvilinear

$$T \quad i \qquad T \quad i$$
$$S \quad a \qquad S \quad a$$
$$R \quad n \qquad R \quad n$$
$$A \quad k \quad \text{19A} \qquad A \quad k \quad \text{19B}$$

Alternative 20:

Non-flowing Script + Addition + Repetitive

$$T \quad i \qquad T \quad i$$
$$S \quad a \qquad S \quad a$$
$$R \quad n \qquad R \quad n$$
$$A \quad k \quad \text{20A} \qquad A \quad k \quad \text{20B}$$

Alternative 21:

Non-flowing Script + Addition + Progressive

$\mathcal{T}$ i $\mathcal{T}$ i

$\mathcal{S}$ a $\mathcal{S}$ a

$\mathcal{R}$ n $\mathcal{R}$ n

$\mathcal{A}$ k **21A** $\mathcal{A}$ k **21B**

Alternative 22:

Non-flowing Script + Subtraction + Curvilinear

$\mathcal{T}$ i $\mathcal{T}$ i

$\mathcal{S}$ a $\mathcal{S}$ a

$\mathcal{R}$ n $\mathcal{R}$ n

$\mathcal{A}$ k **22A** $\mathcal{A}$ k **22B**

Alternative 23:

Non-flowing Script + Subtraction + Repetitive

$\mathcal{T}$ i $\mathcal{T}$ i

$\mathcal{S}$ a $\mathcal{S}$ a

$\mathcal{R}$ n $\mathcal{R}$ n

$\mathcal{A}$ k **23A** $\mathcal{A}$ k **23B**

Alternative 24:

Non-flowing Script + Subtraction + Progressive

$\mathcal{T}$ i $\qquad$ $\mathcal{T}$ i

$\mathcal{S}$ a $\qquad$ $\mathcal{S}$ a

$\mathcal{R}$ n $\qquad$ $\mathcal{R}$ n

$\mathcal{A}$ k 24A $\qquad$ $\mathcal{A}$ k 24B

Alternative 25:

Non-flowing Script + Substitution + Curvilinear

$\mathcal{T}$ i $\qquad$ $\mathcal{T}$ i

$\mathcal{S}$ a $\qquad$ $\mathcal{S}$ a

$\mathcal{R}$ n $\qquad$ $\mathcal{R}$ n

$\mathcal{A}$ k 25A $\qquad$ $\mathcal{A}$ k 25B

Alternative 26:

Non-flowing Script + Substitution + Repetitive

$\mathcal{T}$ i $\qquad$ $\mathcal{T}$ i

$\mathcal{S}$ a $\qquad$ $\mathcal{S}$ a

$\mathcal{R}$ n $\qquad$ $\mathcal{R}$ n

$\mathcal{A}$ k 26A $\qquad$ $\mathcal{A}$ k 26B

Alternative 27:

Non-flowing Script + Substitution + Progressive

27A

27B
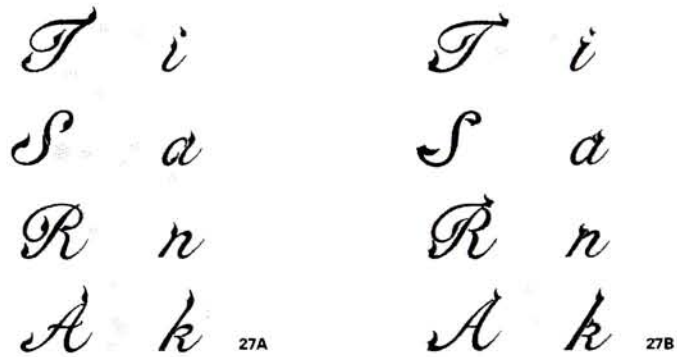
After all twenty-seven design alternatives had each been explored in two different approaches, twenty of these particular approaches were selected by the designer for development: 1B, 6A, 7A, 7B, 8A, 8B, 10B, 11B, 12A, 15B, 16B, 17A, 17B, 18B, 20B, 25B, 26A, 26B, 27A, and 27B. These were chosen after considering their qualities of Thai recognition and legibility. These chosen approaches will be developed in the next phase of ideation.

In this phase, each individual approach selected from the preliminary sketches needed to be developed and tested for readability. Using a word rather than only individual letterforms was a better way to test readability. Since the word "Thailand" would most likely be used in posters for the Tourism Authority of Thailand, it was selected to be explored in this phase. After this development phase, the designer chose some approaches by considering their qualities of Thai recognition, and readability. These selected designs will be evaluated in the next stage.

Alternative 1B

Thailand

Alternative 6A

Thailand

Alternative 7A

Thailand

Alternative 7B

Thailand

Alternative 8A

Thailand

Alternative 8B

Thailand

Alternative 10B

Thailand

Alternative 11B

Thailand

Alternative 12A

Thailand

Alternative 15B

Thailand

Alternative 16B

Thailand

Alternative 17A

Thailand

Alternative 17B

Thailand

Alternative 18B

Thailand

Alternative 20B

Thailand

Alternative 25B

Thailand

Alternative 26A

Thailand

Alternative 26B

Thailand

Alternative 27A

Thailand

Alternative 27B

Thailand

After all the alternatives had been developed, alternatives 1B, 6A, 7A, 8A, 15B, 16B, 17B, 26A, and 26B were selected by the designer for further evaluation. These nine approaches were chosen by considering their qualities of Thai recognition and legibility. Not only do these selected approaches most demonstrate the Thai forms of *Kra-chang*, *Kra-nok*, and *Cho-fa*, but they are also the most readable. These selected designs will be evaluated in the next stage by a group of Thai people in Rochester, and a group of Americans and international students at the Rochester Institute of Technology (RIT).

In this stage, alternatives which had been developed and selected were evaluated by a group of Thai people in Rochester, and a group of Americans and international students including Thai students at the Rochester Institute of Technology (RIT). The primary purpose of this evaluation was to identify the strongest ideation results. The target groups, twenty people in total, were asked to answer questions shown in the following survey.

No.1 Thailand

No.2 Thailand

No.3 Thailand

No.4 Thailand

No.5 Thailand

No.6 Thailand

No.7 Thailand

No.8 Thailand

No.9 Thailand

1. **Please select one of these options.**
   _____ I am Thai.
   (If you select this option, please proceed to question #2.)
   _____ I am not Thai, but I have been to Thailand.
   (If you select this option, please proceed to question #2.)
   _____ I am not Thai, but I am very familiar with Thailand or Thai cultures.
   (If you select this option, please proceed to question #2.)
   _____ I am not Thai, but I have some knowledge of Thailand or Thai cultures.
   (If you select this option, please proceed to question #2.)
   _____ I am not Thai, and I have no knowledge of Thailand or Thai cultures.
   (If you select this option, please proceed to question #3.)

2. **Which of these designs look " Thai " to you ?**
   (Please indicate the number of each design you select and rank them in order.)
   _____ Best   _____ Good   _____ Fair
   Why _____

3. **Which of these designs look elegant ?**
   (Please indicate the number of each design you select and rank them in order.)
   _____ Best   _____ Good   _____ Fair
   Why _____

4. **Which of these designs look friendly ?**
   (Please indicate the number of each design you select and rank them in order.)
   _____ Best   _____ Good   _____ Fair
   Why _____

5. **Which of these designs are the most appealing ?**
   (Please indicate the number of each design you select and rank them in order.)
   _____ Best   _____ Good   _____ Fair
   Why _____

6. **Which of these designs are most easy to read ?**
   (Please indicate the number of each design you select and rank them in order.)
   _____ Best   _____ Good   _____ Fair
   Why _____

No.3

Thailand

No.5

Thailand

The results of this evaluation showed that both design No. 3 and design No. 5 received the highest scores of all. However, design No. 3 was voted that it looks more "Thai" than design No. 5. As a result, design No. 3 was selected for development in the final design stage.

In this stage, design No. 3 which was selected from the evaluation was developed and refined to create the final design solution. The final design consisted of a set of characters which includes twenty-six capital letters, twenty-six lowercase letters, ten numerals, and punctuation marks.

Capital Letters

A B C D E
F G H I J K
L M N O P
Q R S T U
V W X Y Z

Lowercase Letters

a b c d e
f g h i j k
l m n o p
q r s t u
v w x y z

Numerals and Punctuation

1 2 3
4 5 6
7 8 9
0 & ?
! (" . , : ; ")

Ultimately, these characters will be generated by using computer applications including Photoshop 5.0, Steamline 4.0, FreeHand 7.0, and Fontographer 4.1.5.

When all of the final characters had been developed, they were incorporated into the layouts of two posters which are shown below. The first poster is a typeface specimen designed to display the new typeface including twenty-six capital letters and twenty-six lowercase letters. The other poster was designed for the Tourism Authority of Thailand. Because the primary goal of this typeface is for uses in promotional material by the Tourism Authority of Thailand, this poster was designed as an example to show how to use this new typeface in an application regarding a Thai subject, or particularly in an application regarding Thai tourism. *(Please see Appendices 4 and 5 for enlarged versions.)*

Typeface Specimen Poster
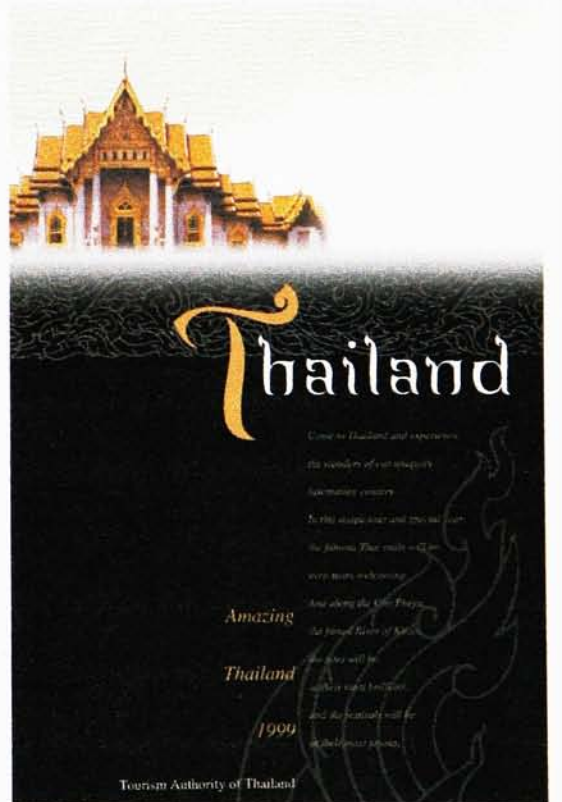
Poster for Tourism Authority of Thailand

This typeface was designed to be used as a display typeface in printed or digital applications regarding Thai subjects, which are distributed inside and outside of Thailand. These applications will include posters, brochures, books, magazines, videos, television programs, CD-Roms, and web sites. The primary purpose of this typeface will be to promote materials developed by the Tourism Authority of Thailand. The designer will notify them about this new typeface.

Consequently, in order that this typeface can be distributed to the public, it needed to be created in Fontographer, a computer software currently used by type designers to create or develop typefaces. This software helps designers to create a typeface which can be used as a standard font on either a Macintosh or an IBM computer system.

In the future, this typeface may be developed for more flexible use. For example, light or bold weights may be added to provide users with more alternatives. Hopefully, designers will consider using this typeface when working on applications that need to reflect characteristics of Thai culture.

A retrospective evaluation was conducted during the thesis show which was held for three weeks in the Bevier gallery at the Rochester Institute of Technology. Evaluation forms were placed adjacent to the thesis application which included a typeface specimen poster and a poster for the Tourism Authority of Thailand. The primary purpose of this evaluation was to determine weaknesses and strengths of the typeface to help guild the refinement process in order that it can be improved in the future. Each evaluation form consisted of the four questions shown below.

How do you feel about this typeface ?

Does it look "Thai" ?

___ Yes   ___ Somewhat   ___ No

Does it look elegant ?

___ Yes   ___ Somewhat   ___ No

Does it look friendly ?

___ Yes   ___ Somewhat   ___ No

Is it easy to read ?

___ Yes   ___ Somewhat   ___ No

After the thesis show, twenty-three forms were collected. The feedback was very positive. All the viewers found that it looked "Thai" to them. Most of the viewers thought that it looked elegant and friendly. No one answered "No" to the first three questions. Most of the viewers also found that it was easy to read. There was only one viewer who commented on how the capital "I" and lowercase "l" looked alike. This useful comment will be considered when improving this typeface in the future.

This thesis project not only involved abilities in researching, analyzing, synthesizing, and designing, but it also required abilities in time managing, problem solving, and systematic thinking. The challenge of this project was to blend two completely different cultures together and represent the outcome through a new typeface design. The hardest part in this project was designing a new typeface because the letterforms needed to share some common parts in order to maintain the unity of design, and each of them needed to be distinct enough in order to have legibility.

In the future, the legibility of this new typeface could still be revised, and alternative weights – light and bold – could also be developed. However, this thesis typeface is successful as working prototype. Moreover, according to the results from the retrospective evaluation, this typeface also achieves the designer's primary goal which is to design a new English typeface that can reflect the aesthetic values of Thai Culture.

Since this thesis project addresses the entire design process: research, analysis, synthesis, ideation, evaluation, and implementation, the experience of completing it has been valuable to the designer. This design process should also be helpful to readers as a model of the process of typeface development. Furthermore, this project might become a useful case study which can be investigated by future designers to better understand the complexities and considerations of typeface design.

In addition, the final outcome of this thesis project – the new typeface – may be useful for Thai communication regarding Thai subjects, which are distributed inside and outside of Thailand.

Hopefully, this thesis project should be useful to type designers, design students, and anyone who is interested in typeface design.

Ascender

The part of a character that extends above the x-height, or top of the letter *x*, as in the letters *d, f, h,* and *k* and the *old-style figures 6* and *8.*

Body Type

The type used for the text of a work, as distinguished from the display type used for chapter openings, subheads, and so forth.

Character

A letter, numeral, symbol, or mark of punctuation. In printing type, characters vary in width, as they do on a *variable-spacing* typewriter. On an ordinary typewriter, or on a computer-generated printout, characters are all the same width.

Descender

The part of a character that extends below the baseline, or bottom of the capital letters, as in the lowercase letters *j, p, q,* and *y* and the *old-style numerals* 3, 4, 5, 7 and 9.

Display Typeface

Type that is larger than the body type used for setting the text of a printed work. Display faces are used for title pages, chapter openings, subheads, and the like in a book or journal, for headlines in advertising, and so on.

Font

A complete assortment of a given size and style of type, including capitals, small capitals, and lowercases, together with numerals, punctuation marks, ligatures, and the commonly used symbols and accents. The *italic* of a typeface is considered a part of the equipment of a font of type but is often spoken of as a separate font.

Italic

Slanted type suggestive of cursive writing.

Legibility

Legibility represents those qualities and attributes inherent in typography. These attributes make it possible for a reader to comprehend typographic forms with the least amount of difficulty.

Letterform

Forms of alphabets designed by typographers or designers to bring uniformity to typography. The proportions of the individual letterform are an important consideration. Each letterform is constructed by major components such as baseline, x-height, ascender, descender, stroke, etc.

Optical Relationship

Mechanical and mathematical letterform construction can result in serious spatial problems because diverse forms within an alphabet may appear optically incorrect. There is a need for optical adjustment to achieve visual harmony within a font.

Signage System

Term for coordinated directional, instructional and informational sign requirements associated with the urban environment, buildings and major events such as exhibitions. Signage is an integral component of many corporate identity programs.

Typeface

The design or style characteristics of a complete font of type. The various typefaces are designated by name: Baskerville, Caslon, and Times Roman, for example. Typefaces in photocomposition resemble, but are often not exactly like their counterparts in metal composition.

Typographic Syntax

The process of arranging typographic elements into a cohesive whole. The study of typographic syntax begins with its basic unit, the letter, and progresses to word, line, column, and margin.

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APPENDICES

Alternative 1:

Modern + Addition + Curvilinear

T	i	T	i
S	a	S	a
R	n	R	n
A	k	A	k

Alternative 2:

Modern + Addition + Repetitive

T	i	T	i
S	a	S	a
R	n	R	n
A	k	A	k

Alternative 3:

Modern + Addition + Progressive

T i T i

S a S a

R n R n

A k A k

Alternative 4:

Modern + Subtraction + Curvilinear

T i T i

S a S a

R n R n

A k A k

Alternative 5:

Modern + Subtraction + Repetitive

T i T i
S a S a
R n R n
A k A k

Alternative 6:

Modern + Subtraction + Progressive

T i T i
S a S a
R n R n
A k A k

Alternative 7:

Modern + Substitution + Curvilinear

T i T i
S a S a
R n R n
A k A k

Alternative 8:

Modern + Substitution + Repetitive

T i T i
S a S a
R n R n
A k A k

Alternative 9:

Modern + Substitution + Progressive

T i   Y i

S a   S a

R n   R n

A k   A k

Alternative 10:

Flowing Script + Addition + Curvilinear

T i   T i

S a   S a

R n   R n

A k   A k

Alternative 11:

Flowing Script + Addition + Repetitive

$$T \quad i \quad T \quad i$$

$$S \quad a \quad S \quad a$$

$$R \quad n \quad R \quad n$$

$$A \quad k \quad A \quad k$$

Alternative 12:

Flowing Script + Addition + Progressive

$$T \quad i \quad T \quad i$$

$$S \quad a \quad S \quad a$$

$$R \quad n \quad R \quad n$$

$$A \quad k \quad A \quad k$$

Alternative 13:

Flowing Script + Subtraction + Curvilinear

$$T \quad i \qquad T \quad i$$

$$S \quad a \qquad S \quad a$$

$$R \quad n \qquad R \quad n$$

$$A \quad k \qquad A \quad k$$

Alternative 14:

Flowing Script + Subtraction + Repetitive

$$T \quad i \qquad T \quad i$$

$$S \quad a \qquad S \quad a$$

$$R \quad n \qquad R \quad n$$

$$A \quad k \qquad A \quad k$$

Alternative 15:

Flowing Script + Subtraction + Progressive

$$T \quad i \qquad T \quad i$$

$$S \quad a \qquad S \quad a$$

$$R \quad n \qquad R \quad n$$

$$A \quad k \qquad A \quad k$$

Alternative 16:

Flowing Script + Substitution + Curvilinear

$$T \quad i \qquad T \quad i$$

$$S \quad a \qquad S \quad a$$

$$R \quad n \qquad R \quad n$$

$$A \quad k \qquad A \quad k$$

Alternative 17:

Flowing Script + Substitution + Repetitive

T i T i

S a S a

R n R n

A k A k

Alternative 18:

Flowing Script + Substitution + Progressive

T i T i

S a S a

R n R n

A k A k

Alternative 19:

Non-flowing Script + Addition + Curvilinear

$$\mathcal{T} \quad i \qquad \mathcal{T} \quad i$$

$$\mathcal{S} \quad a \qquad \mathcal{S} \quad a$$

$$\mathcal{R} \quad n \qquad \mathcal{R} \quad n$$

$$\mathcal{A} \quad k \qquad \mathcal{A} \quad k$$

Alternative 20:

Non-flowing Script + Addition + Repetitive

$$\mathcal{T} \quad i \qquad \mathcal{T} \quad i$$

$$\mathcal{S} \quad a \qquad \mathcal{S} \quad a$$

$$\mathcal{R} \quad n \qquad \mathcal{R} \quad n$$

$$\mathcal{A} \quad k \qquad \mathcal{A} \quad k$$

Alternative 21:

Non-flowing Script + Addition + Progressive

$$\mathscr{T} \quad i \qquad \mathscr{T} \quad i$$

$$\mathscr{S} \quad a \qquad \mathscr{S} \quad a$$

$$\mathscr{R} \quad n \qquad \mathscr{R} \quad n$$

$$\mathscr{A} \quad k \qquad \mathscr{A} \quad k$$

Alternative 22:

Non-flowing Script + Subtraction + Curvilinear

$$\mathscr{T} \quad i \qquad \mathscr{T} \quad i$$

$$\mathscr{S} \quad a \qquad \mathscr{S} \quad a$$

$$\mathscr{R} \quad n \qquad \mathscr{R} \quad n$$

$$\mathscr{A} \quad k \qquad \mathscr{A} \quad k$$

Alternative 23:

Non-flowing Script + Subtraction + Repetitive

$$\mathcal{T} \quad i \qquad \mathcal{T} \quad i$$

$$\mathcal{S} \quad a \qquad \mathcal{S} \quad a$$

$$\mathcal{R} \quad n \qquad \mathcal{R} \quad n$$

$$\mathcal{A} \quad k \qquad \mathcal{A} \quad k$$

Alternative 24:

Non-flowing Script + Subtraction + Progressive

$$\mathcal{T} \quad i \qquad \mathcal{T} \quad i$$

$$\mathcal{S} \quad a \qquad \mathcal{S} \quad a$$

$$\mathcal{R} \quad n \qquad \mathcal{R} \quad n$$

$$\mathcal{A} \quad k \qquad \mathcal{A} \quad k$$

Alternative 25:

Non-flowing Script + Substitution + Curvilinear
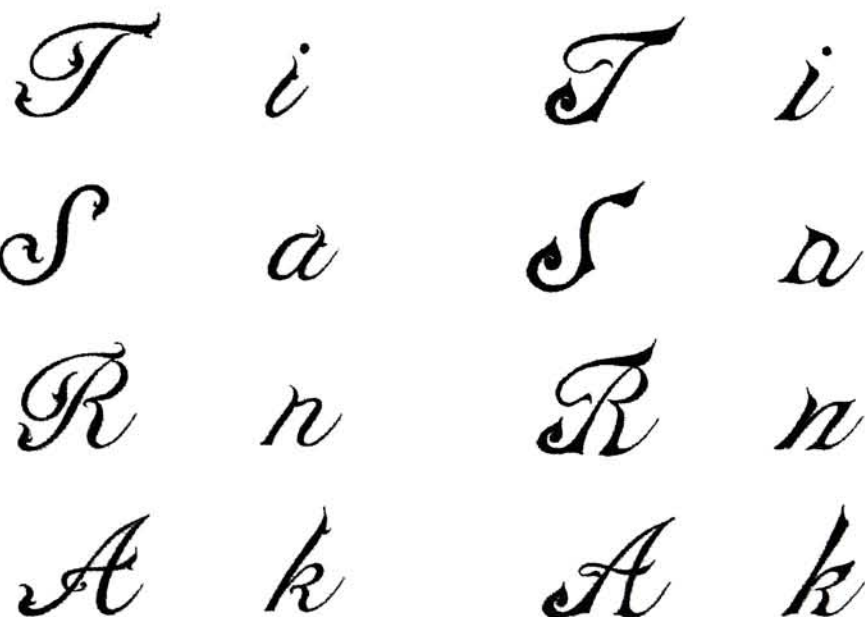
T   *i*   *T*   *i*

S   *a*   *S*   *a*

R   *n*   *R*   *n*

A   *k*   *A*   *k*

Alternative 26:

Non-flowing Script + Substitution + Repetitive

T   *i*   *T*   *i*

S   *a*   *S*   *a*

R   *n*   *R*   *n*

A   *k*   *A*   *k*
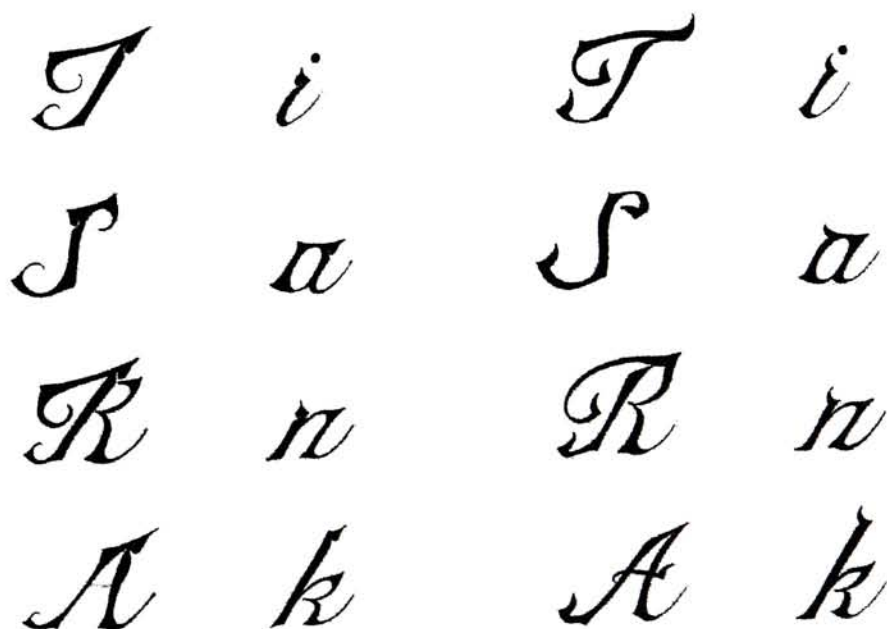
Alternative 27:

Non-flowing Script + Substitution + Progressive
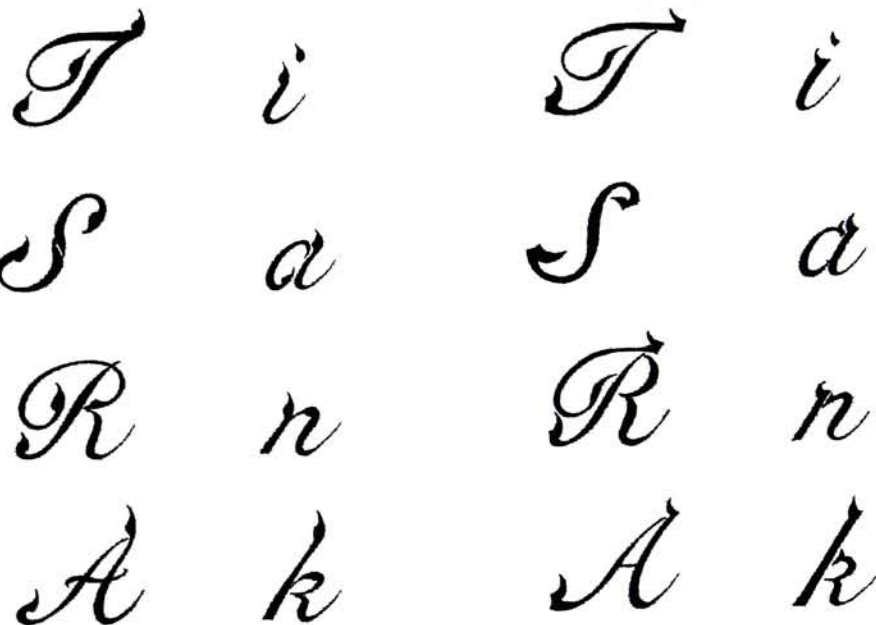
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Thailand

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fascinating country.
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even more welcoming.
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the famed River of Kings,
the sites will be
at their most brilliant,
and the festivals will be
at their most joyous.

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Thailand

1999

Tourism Authority of Thailand

System Requirements

System	Macintosh 7.1 or later
CPU	68040/25MHz or higher
Memory	8MB RAM
Hard drive	4MB free
CD-ROM drive	2X CD-ROM drive or higher
Software	Photoshop 4.0 or later

For Macintosh

Typeface
Sawasdee
Typeface Design for a Thai Context