Design Research Seminar

To make a guideline to revive a letterpress Devanagari Typeface

Guide- Dr. Girish Dalvi

Snehal Patil | 136250007

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Industrial Design Centre

Indian Institute of Bombay

Approval Sheet

This visual design project entitled “To make a guideline to revive a letterpress Devanagari Typeface” by Snehal Patil, 136250007, is approved in partial fulfillment of the requirements for Master of Design Degree in Visual Communication.

Project Guide: Dr. Girish Dalvi 

Date: December 2014

Place: Mumbai

Declaration

I declare that this written submission represents my ideas in my own words and where others ideas or words have been included. I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/ data/ fact/ source in my submission.

I understand that any violation of the above will because for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been needed.

Signature

Snehal Patil
Roll No.:136250007
Date: December,2014

Industrial Design Centre,
Indian Institute of Technology, Bombay

What is a revival?

Revival is remaking an old typeface. Generally classic ones are selected for revival. That's the reason we have seen 100's of revivals of Caslon, Garamond. All revivals are not just direct tracing of the older version. The designer should take advantage of modern technology and adds his or her own understanding about the letter structures. All this revolves around the original drawings. We should avoid duplicating the original and also going too drastic than the classic typeface. We should play in that threshold space were we retain the charm of the original typeface yet add value to it by giving it new look.

Why revive a typeface which is done ages ago?

Classic typefaces are the one, which everybody wants to use over and over again. They are beautiful and even in today's day and age they stand for whatever they were designed for decades ago. Because of the limitation in technology we might not get chance to use them in our designs today and treat our eyes with its visual richness. Most of the times, these classic typefaces are found in letterpress punches or photo compositions or detailed drawings on paper. To use them we need to revive them from these various mediums in current digital medium. This serves as an attempt to understand the design thinking behind the making of classic typefaces.

About my letterpress sample who created it? When? Where? What are the attributes of the sample?

Following study is based on my attempt of reviving an old letterpress sample of Great Primer Two from Nirnaya Sagar Press. This was to mainly focus on the process of revival. Understanding the translations of hand drawn letters into engraved letterpress punches. Making sense of the decisions taken behind the structures of letterforms. Gathering the learning's, we creating a new set of letterforms. Not only matching the letters to old structure but also improving them with the help of new technology.

Nirnaya Sagar press was founded by Jaoji dadaji Choudhary. He along with Ranoji Aru cast some of the finest text typefaces casted in History of devanagari printing.Great Primer two is one of the most trendsetting and standardized specimen of devanagari printed letters. These were one of the refined drawings of devanagari punch cuts found back then. One of the peculiarities of this typeface is proportion of letters and consistency across characters. The aim of the project is to understand the intricacies of the structures so well and revive them to such an extent that we can match the dense, uniform and universally harmonious text over the page, which can be compared to a hand written manuscript. It is also an attempt to draw guidelines for revival of devanagari typefaces.

Where is the scope for improvement? What is to be achieved?

While developing a digital typeface based on a sample of Great primer 2 we come across the fact that direct tracing from the sample was not doing justice to the original prints. The vectors created by direct tracing were overly sharp and looked mechanical. As a consequence, we have to think how much should one interfere with the design and make their interpretations? Maybe, till I retain the charm of the original piece, I can modify the structure to an extent that it adds to the value of design and does not degrade it. Earlier samples were based on the contemporary writing systems and were chiseled out in a piece of metal. But today we attempt of making a digital version of the same letters printed on a sheet of paper, which were printed with the help of movable technology. Now we can take benefit of the digital media and improve on the printing quality and enhance the design.

What is the aim of this project?

Aim of this project is to develop a digital typeface based on the sample received. Enhancing the letter structures. Making the basic glyph set. Meanwhile documenting the whole process, so that it serves as a guideline.

Why is there any need for interpretation? How to interpret?

While reviving a typeface we aim to achieve the essence of old letterforms. For this we have to first study the original typeface and it's making. This will help us understand loopholes in the process executed by the earlier type designer. Consequently we can work towards filling the gaps. If we closely observe the sample provided. Look at one letter at a time. Study all the variations of the same letter on the page. You can notice the variations of a single letter. Though they are printed using the same letter punch. But the medium (ink) and the surface (paper), causes the disparity. This happens with movable type printing. Now when we decide to digitize the typeface we have to take decision like selecting one perfect sample from the printed text.

Collected samples of letter ‘Ka’ from the original specimen

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Objective of the project

To make the digital version of the letterpress sample we adapted a trial and error method. With the help of senior type designer and my guide we chalked out a rough process.

Process

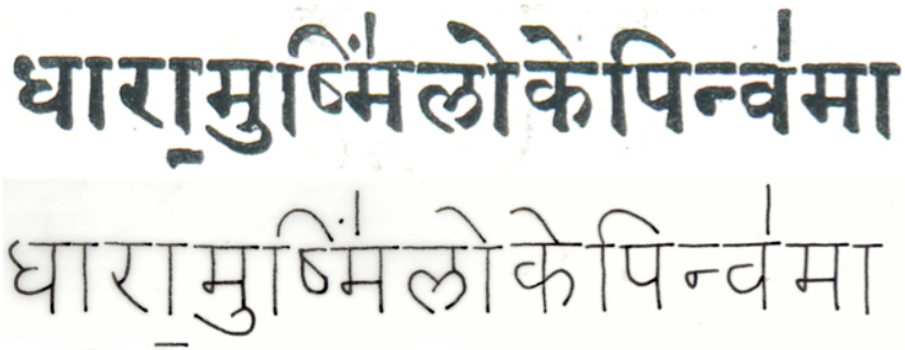
1. Study of the letterpress sample
2. Observing the letters and drawing them with a reed pen with a slant angle.
a. Skeleton of the letters
b. Collecting samples
c. Using tracing for calligraphy
3. Drawing guidelines for the anatomy of letters
4. Using vector tool to trace the letters
5. Width-wise groupings
6. Adaptations and improvements
7. Spacing and setting a paragraph

Characteristics of the Nirnaya Sagar typeface

- The typeface has a strong calligraphic base.
- There is flaring of the end terminals in the vertical strokes, the width gradually increases and flares up towards the vertical terminal. This was probably to balance the letters.
- Open counters made it possible to be readable at smaller point sizes.
- The letters are narrow in width so that more text could be fitted in less space.
- This makes the letters look vertically taller.

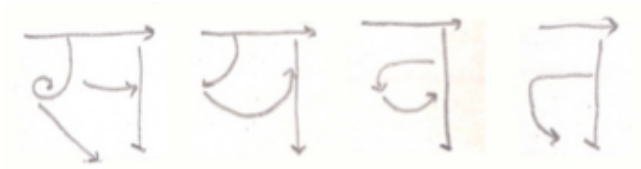
Skeleton of the letters

This exercise is to understand the shape and direction of strokes. If we get the movement of the strokes right, we can determine the modulations in the curves. Draw the skeleton of the letterforms on a piece of paper using tracing paper for reference over top of the sample. They are irrespective of the stroke modulation. We have to take a note of the starting stroke and the following ones in order.



Linear skeleton drawing on a tracing paper of the sample

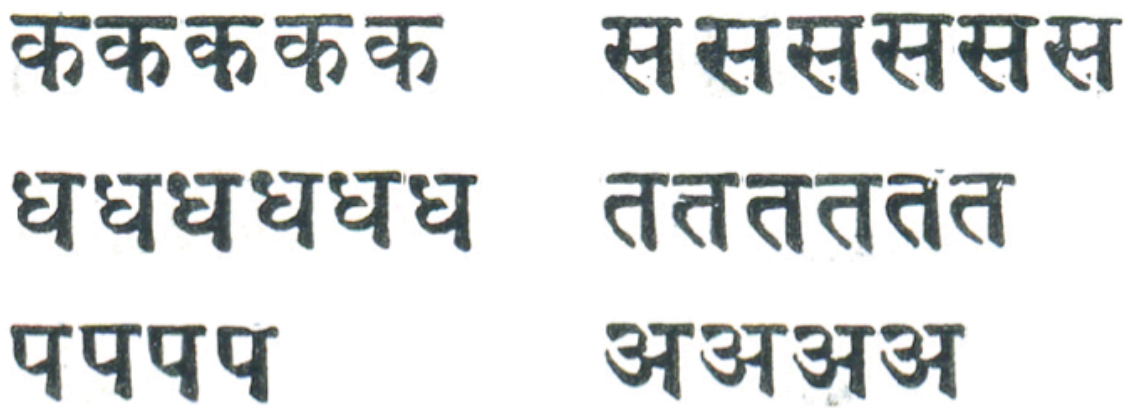
Observing the letterforms and deconstructing the letters into number of pen lifts gives us an exact image of the flow of the letters.



Skeleton of letters with the number of pen lifts.

Collecting samples

The sample was of low quality there was a lot of uncertainty about the actual shape of each letter. Thus I started with collecting samples of each letter. The same letter is printed with slight changes in the sample due to the excessive ink or printing error. It is very essential to see all the samples of the same letter. From the scans of the letters you have to determine the most common primitives in the letters, which are getting repeated. Follow those and draw the letters.



Scans of same letter samples, printed looks slightly different.

It will be best to superimpose every sample as a separate layer in an image file so that the common areas can be traced out. Which gives us a rough outline of the letterforms.

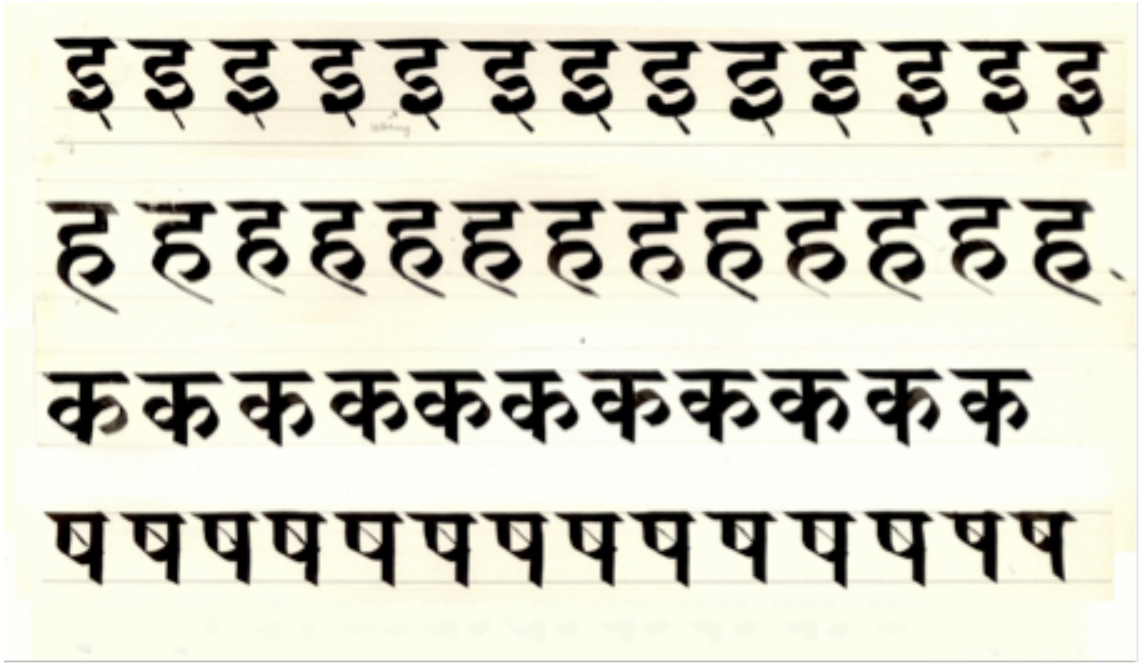
Calligraphic process

Before drawing the letters in calligraphy, we stack up horizontal cut nib strokes on top of each other and measure the height of the actual sample letters. Count the ascender, kana height and descender strokes. While practicing calligraphy, it is helpful to determine the base line and x-height. This is critical to set the letter structures. You understand how they have maintained grey value of the text and decide upon the leading. After acquiring more confidence in the shape and understanding the direction of the movement. Keep the anatomy of the letters in mind and draw them using the guidelines. These guidelines are helpful for both the mediums- paper as well as computer. The scale is the same for the letters.

Linear skeleton drawing on a tracing paper of the sample

It is very essential to make the shapes fluid and natural to the hand. Handwritten mannerism of the letters is evident from the sample. That is when we start using a calligraphic broad nib pen. The stroke generated by a broad edge pen as an outline, is the outcome of the two identical lines running parallel to each other. Which determine the flow of the stroke. It is very essential to understand the grammar of strokes. The relationship between the thick and thin strokes was clear in my mind once I started drawing the letters with the calligraphy tool.

While practicing the letters it was essential to duplicate the letters in print. It was getting difficult to actually draw them free hand. We look at the letters and observe it. That is one level of understanding. But when we start practicing it with hands we get to know the intricacies of the structure. What was the thought behind each letterform? Why they modified few curves? These things can be understood, only when you do it by yourself.
For this exercise I took root characters to practice calligraphy. Root characters gives us a overall understanding of the whole character set.



Free hand calligraphy practice to understand the letter structures.

After a point we realized that, we are unable to achieve the desired structure of letters by freehand calligraphy. Thus we switched to a better and easier method of direct tracing on a tracing paper.

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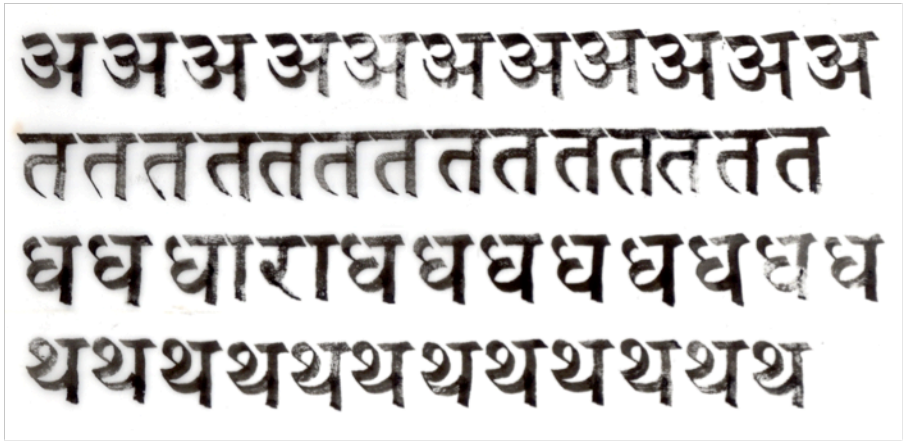
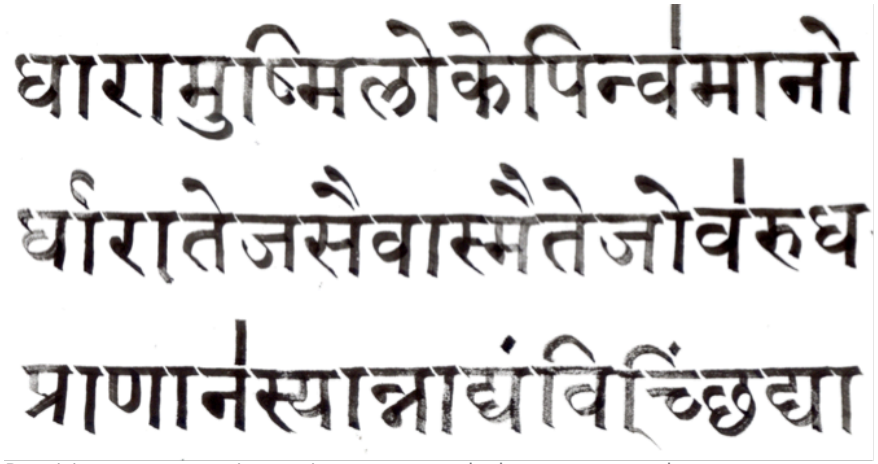
Linear skeleton drawing on a tracing paper of the sample

Using tracing for calligraphy

As drawing the letterforms by merely looking at them did not help in deciding the exact pen movements. So we discovered that using a tracing might help to do so. As a result of that I could fix my calligraphy according to the letterpress sample.
Again this exercise was done taking few key characters into consideration.



In devanagari type design one cannot over look the importance of matras in a piece of text. Drawing matras and a whole paragraph in the tracing calligraphy method trains your eyes and hand to maintain a particular distance between letters and lines.



Practicing sentences using tracing paper over the letterpress sample

This exercise really helped in knowing the exact curve movements. The modifications are done while drawing the letters. There are few place were we have to turn the pen a bit to achieve a particular curvature. That is only possible if you try to mimic the letters as they are from that sample.

Drawing outline of the letterpress sample

In hot metal type casting the instruments used by both punch cutter and the calligrapher are different. Thus translating calligraphy drawings on paper to metal for engraving causes additions and few adaptations of that medium and possibly the aesthetics or limitations of the punch cutter. In between this there could have been loss of original design. The transition of punch cut letterpress samples from the calligraphic drawings can be significant. Hence the letter samples might resemble the actual calligraphic drawings, as it should have been.
After the extensive calligraphy practice we realize that there were few areas in which we could not fit our calligraphic mannerism. They were certainly the modifications caused due to the metal engraving and typecasting. Thus drawing just the outlines of the letter structures as shown below. This helps you understand the alterations done to the calligraphic drawings while translating the drawings. Here the drawing instrument was a pencil.

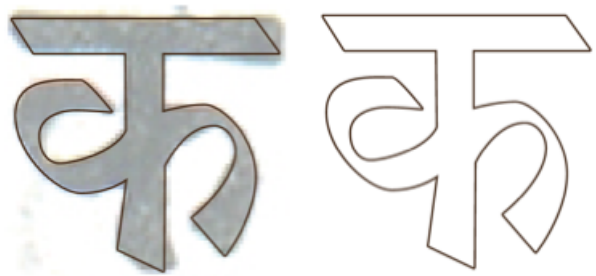
Outline drawing

Converting the drawings in vector

Taking the drawings to next level and digitizing them. This stage helps you decide the weight of the characters. The scanned copy was quiet old and of low quality. Hence it is impossible to enlarge it without the image getting pixilated. I drew my letters in illustrator software.

There are two types of tracing.
1. With the pen tool in illustrator software.
2. Direct tracing of the image.

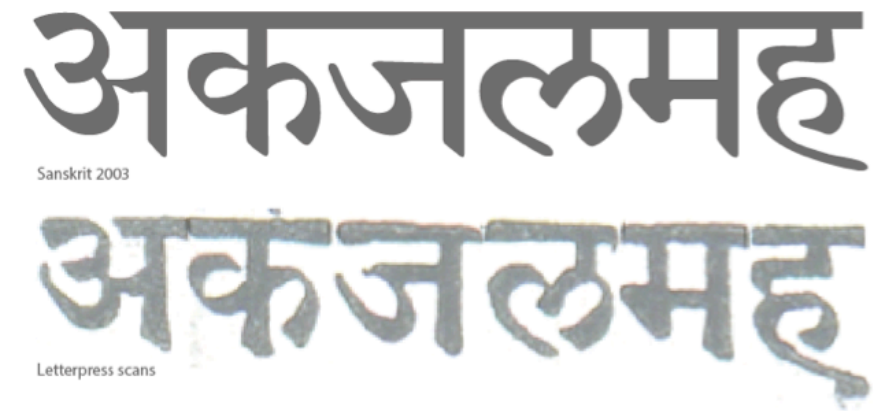
In the first method one has to consider the inner pixels of the scans. As you can see in the second figure below the line drawing is done leaving the light pixels outside. Tracing them on the vector software using a pen tool. Pen tool gives you a perfect curve and simplifies the letters. After looking at the trace it looks too mechanical and sharp. Suddenly all the good things from the sample just vanished when you trace them. We need to soften the curves and work on the overall aesthetics of all the letters.



In the second method of direct tracing the letters look exactly the way you see in the scans. With a softer edge and subtle rotund terminals. The joineries are blotted. It is difficult to determine their exact knot structures. Here is a best example of direct tracing. There is a typeface called Sanskrit 2003, which exactly replicates the Great Primer 2 sample. It doesn't give any inputs on how the actual design would have been.

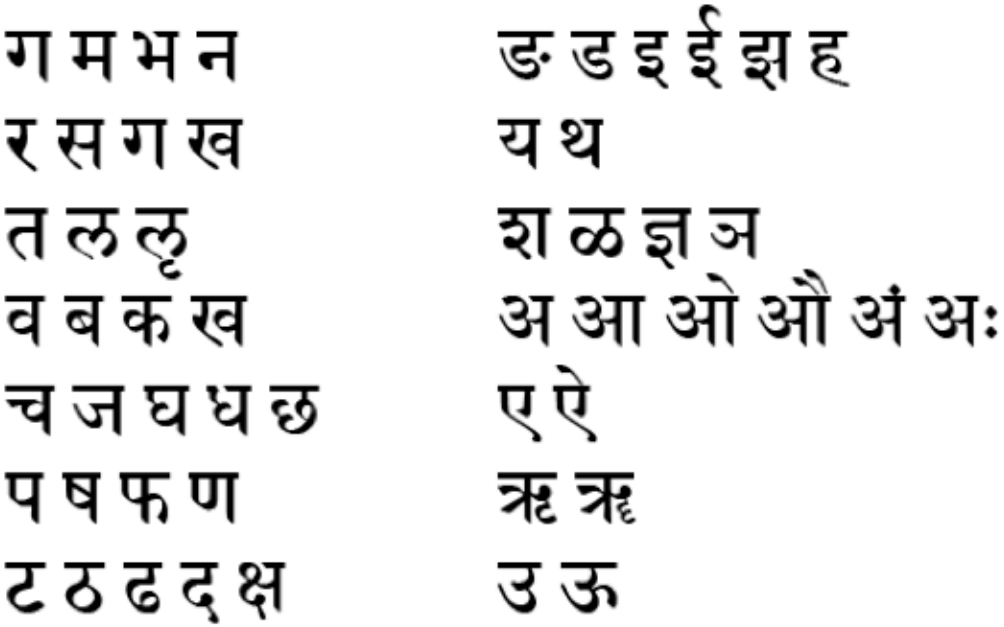
1. letterpress sample 2. Sanskrit 2003 font 3. Overlay of the trace and font

Steps while tracing the characters



Devanagari letters can be divided into groups according to their anatomy. This helps in narrowing down design decisions. Letters belong to some or the other small group within the character set. Drawing parameters for one root character of each group simplifies the process of taking decisions for the rest of the characters in the group. Form wise grouping helps us in taking standardize decisions for all the characters. So while digitizing the characters we can start with root letters and then adapt the same skeleton to the rest of the letters in the group.

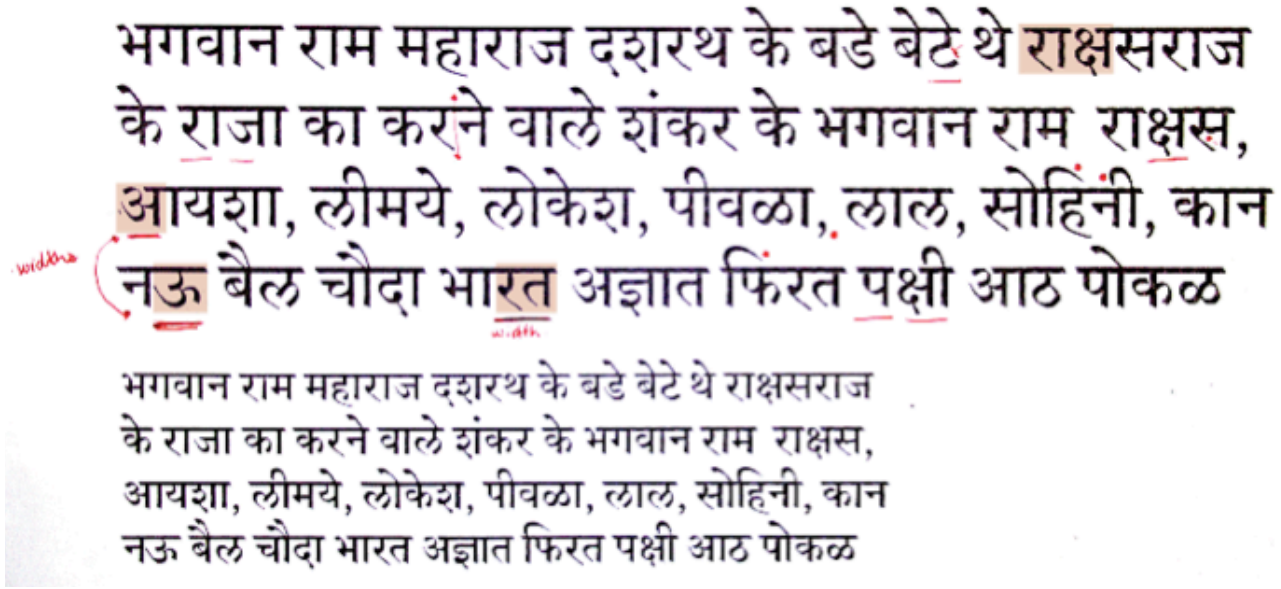
FORM GROUPING



Groups are based on Sanskrit 2003 font

Groupings

We converted all the letters to vector. Refined them to match the original drawings. After printing a sample of words in the typeface created we could spot that the widths of the letters in the text were looking disproportionate. There has to be some grammar followed within the letter proportions. As you can see in the following sample that narrow letter like ‘ra’ is overpowering letter ‘ksha’.



So we had to study the proportions of the original text. Sanskrit 2003 is a direct trace of the letterpress sample so we could rely my calculations based on that font. We measured the widths of all the letters from Sanskrit 2003 typeface and divided them in groups. A chunk of similar widths were placed together. The widths play an important role in legibility.

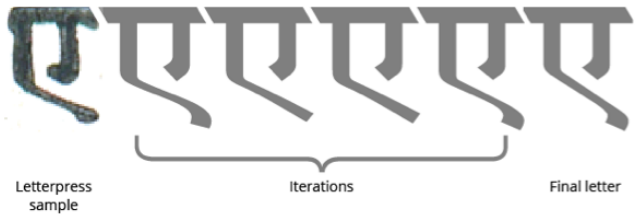
WIDTH GROUPING

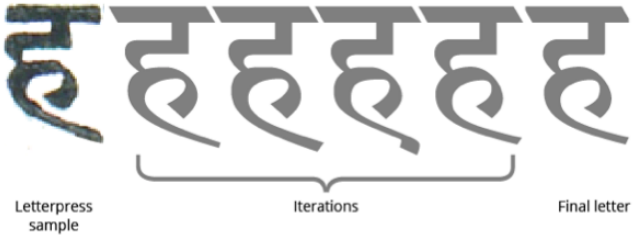
750- 850	ईईषपबवहदर	1250- 1350	अलृखल
850- 950	टठढतनध	1350- 1450	ळ
950- 1050	उगघथमय	1450- 1550	ऊ
1050- 1150	एसङ्ङणभज्ञक्ष	1550- 1650	ऋ
1150- 1250	शकचछजझफञ	1750- 1850	आ

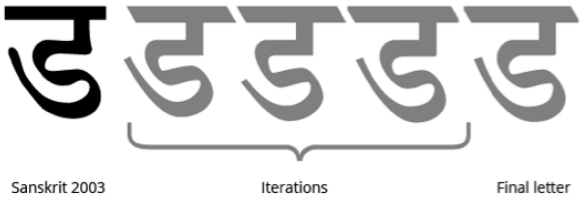
Groups are based on Sanskrit 2003 font

My additions and adaptations

Great numbers of decisions were made directly on the screen the typeface had been through a lot of changes and some qualities of the calligraphic stage were lost. I have given my inputs to each letter. Keeping the old style letterpress look in mind. I took few decisions considering the processes. Transformation from blur to sharp - I wanted the letters to be sharper and wider. It should have the same dense effect when printed.







Conclusion

This exercise is to understand history. Though the ultimate aim was revival of an old letterpress typeface still we got a chance to understand the other old printing processes and their limitations.
During this exercise you try to understand the position of punch cutter as well as of the Calligrapher. Most difficult task was to understand the printed sample and redraw the letters without losing the qualities of earlier sample.
Any machine can trace the letters and give you a digitized version of the letterpress sample. But by the process defined now we can gain much larger understanding of the letterpress typeface and also why and how to interpret it. This is my share of preserving a cultural heritage. It added to my knowledge of letter structures and made me rethink on how they perceived type design and letter structures decades ago.

Great Primer Two Revival

Vowels

अ आ इ ई ऋ ऌ उ ऊ ऍ ऐ ए ऐ
ऑ ओ ओ औ अं अः

Consonants

क ख ग घ ङ च छ ज झ ञ
ट ठ ड ढ ण त थ द ध न
प फ ब भ म य र ल व
श ष स ह ळ क्ष ज्ञ त्र

Sentence

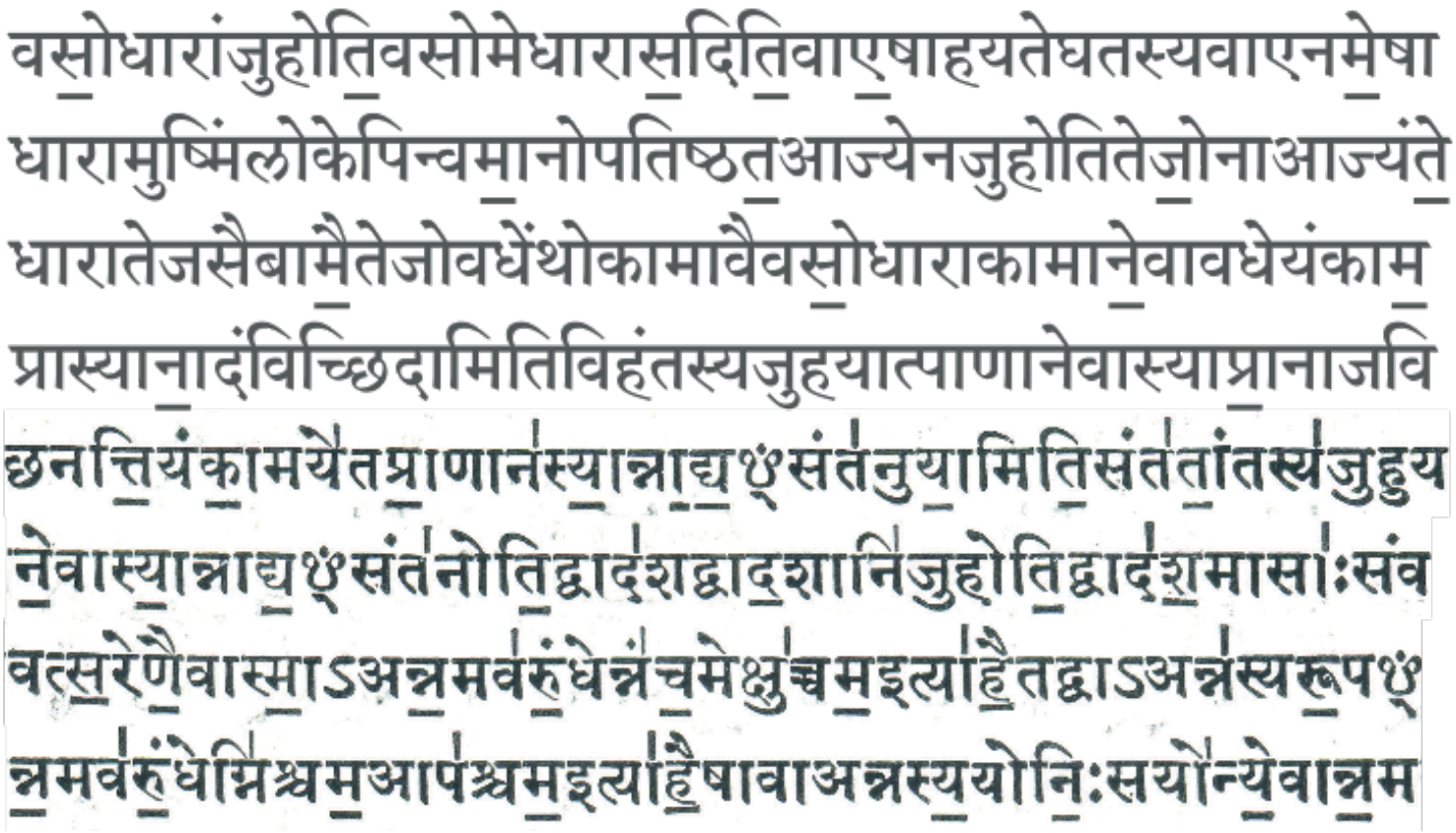
संवेदनशील मुद्राक्षर अभिकप्ल

Type face created during the research. December2014 to January 2015

Test case

दुष्ट राक्षसों के राजा रावण का सवनाश करने वाले विष्णुवतार भगवान राम, अयोध्या के महाराज दशरथ के बड़े सपुत्र थे।
राक्षसराज के दुष्ट राजा का खातमा करने वाले विष्णु के अवतार भगवान राम का जन्म अयोध्या के राजा दशरथ के बड़े पुत्र के रुप मे हुआ।
ऋषि, साधु, राक्षस,क्षत्रिय, ज्ञनी, लंका, खरदशन, आकार, प्रकार, राम, कथा, धनुष, फल, भारत, पाप, पुण्य, अच्छाई, बुराई, जनक, शाप, गङ्गा, कौशल्या, कैकई इतराना, लज्जा तुलसीदास रचित, केवट, कठोर, हार, डंका, ढोल

Test paragraph



Letterpress sample compared to final version of the revival

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