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Visual Communication
2014-16

Guided by:
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PROJECT 201

The History of Devanagari Typography

प्राणिमयसुखकर्मिणापरिकर्मणां
संमद्विअरिसुदापमं
पारासमुदापनविविद
पारासंवाहणाप सं॥
समाणाअरगयपरिस्म
टणसालानपडितिरुक्क।
त्ता। द॥ जिणारससुणाघर
गच्छदुत्ता मसुणाघरंअणु

सुप्रपातयातस्याचयनविध

ससुदागतया
सुदपरिक्क

वादि

मञ्च

मङ्ग

तानवचवा

परिसङ्गत्ता



देवनागरी मुद्रण कला का इतिहास

Declaration

I declare that this submission represents my ideas in my own words and where others' ideas and words have been included. I have adequately cited and referenced the original sources.

I also declared 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 be cause 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.

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2014-16



Approval Sheet

The Visual Communication–Project 2 titled “History of Devanagari Typography” by Shreshta Jaisingh, Roll No. 146250010 is approved, in partial fulfilment of the requirements for the degree of Master of Design in Visual Communication.

Guide:

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Chairperson:

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Internal Examiner:

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Acknowledgment

This project was possible due to the chance happening of many events and situations falling in line harmoniously.

I would like to thank Professor GV Sreekumar for his support of my decision to take up this project. This project would not have been possible without the support and confidence that IDC bestows upon all of us students.

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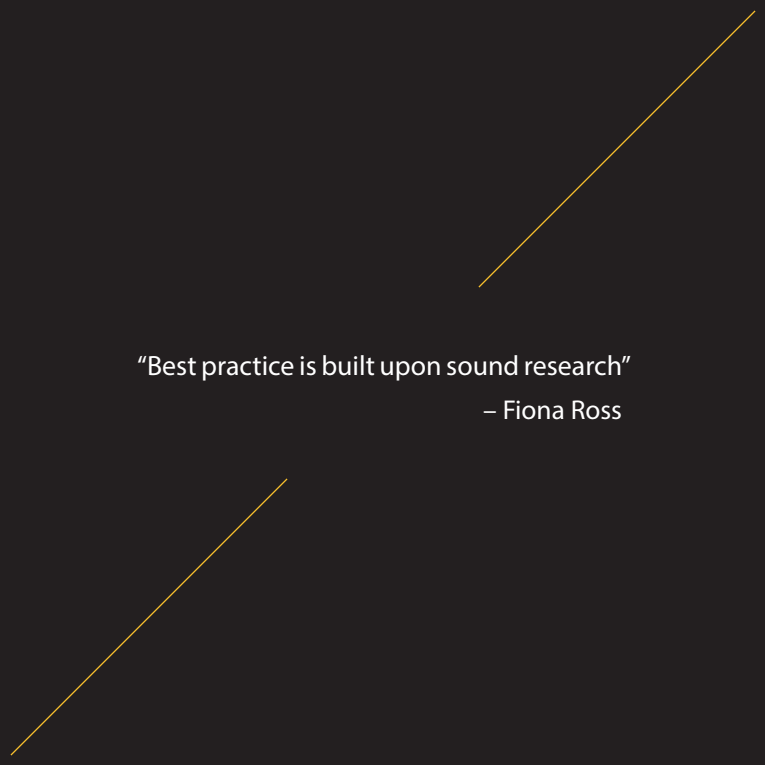
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"Best practice is built upon sound research"
– Fiona Ross

Prologue

Latin typography, has been through enough debate and discussion to establish clarity in its pattern of evolution, chronologically and stylistically. This clarity allows modern day designers to look up to history for inspiration and understand the years of work and evolution that have gone into creating the kinds of typefaces we do today, and assigning use to them based on their evolved features and nuances. It is clear that a particular invention, at a particular point of time in history allowed for a new method or style of type-design to be created, its cultural and historical context is understood and applied in design being created today.

Unlike Latin typography—which spread far and wide due to the propagation of Christianity during the Dark Ages, and therefore has a well-documented chronology and evolution—Devanagari, the script that has been the basis for writing close to 140 languages in the Asian subcontinent, has a long history of being overshadowed by India’s Oral Tradition.

The strong belief that literature is best passed down generations verbally, in order to preserve the expression and emotion of the content, has not been ideal for the cause of longevity or the accuracy of documentation of history. Noble as the intention may have been, the consequence of this belief has lead to severe losses for Indian history.

In India, there is often confusion even till this day and age, as to the concept of “possession” of a typeface.

It is believed that a script is a common property of the people, and thus no one bats an eyelid when stealing occurs or gives a second thought to paying for typefaces, thereby discouraging the rare designer that does decide to venture into designing typefaces for the script. Thus, for a young design student or designer interested in Indian typography, the only database to study or analyze an aspect of design evolution would be academic papers by few type historians who worked with Devanagari types. There is precious little literature on the subject of the two schools of thought regarding modernization and adaptation of Devanagari to technology. One school believes in adapting the typeface to the medium for the type to evolve, whereas the other school works on preserving the original nuances of the letter-forms that have been through much erosion and mutilation by submitting to the demands and constraints of technology, and it loses much of its rigor and texture—and thereby loses its meaning (—Prof. Kirti Trivedi, Iconography of Letterforms). Without knowing how to align themselves to any particular philosophy of design, a designer’s self-awareness is incomplete.

This project aims at providing a solution to the combination of such issues. Through analysis and study of academic papers, I have aimed to gain perspective and create value to the script by creating a concise database, that will hopefully fuel further discourse and study in this field, or at the very least provide an outline for layman reference and promote a common awareness for the history of our oldest native script.



WE OWE A DEBT

[Language] is a magnificent inheritance, and as long as this endures and influences the life of our people, so long will the basic genius of India continue. Apart from its being a treasure of the past, it is, to an astonishing degree, for so ancient a language, a living tradition.

—The Honorable Pandit Jawaharlal Nehru,
Former Prime Minister of India.

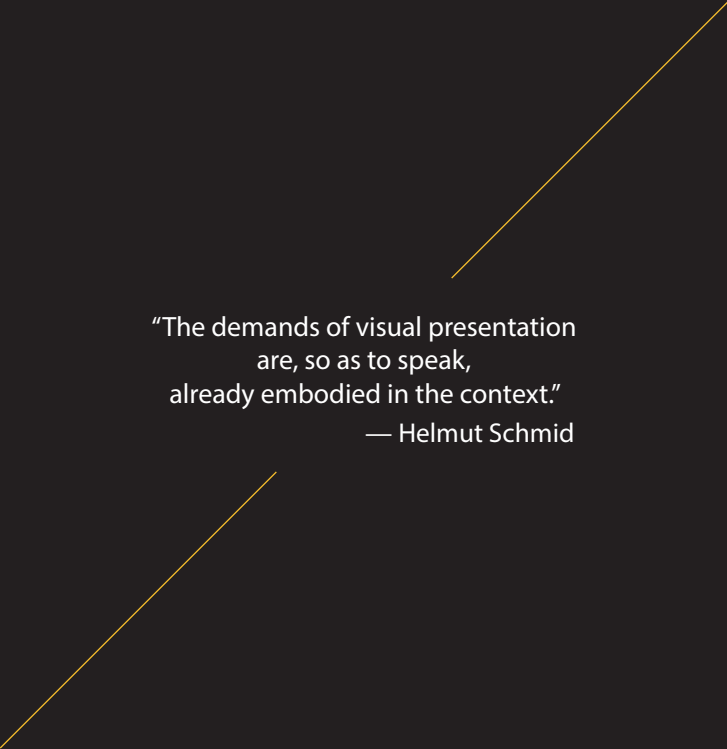
Abstract

The first stage of this project involved collection of data from various academic sources—papers, journals, blogs; my study relies on Bapurao Naik’s “Typography of Devanagari”—the book is comprehensive until a certain point in Devanagari’s time-line. After that, the guidance and works of Professor G V Sreekumar and Dr. Girish Dalvi, combined with references to reports by previous students at IDC that attempted to study various aspects of type-design brought to light newer perspectives and data.

This data has been analyzed and sifted through, in order to create a perspective that is accurate and free from bias. Content was created with focus on the message, regardless of medium. A time-line was created for the script right from its evolution from Brahmi until the creation of modern day type foundries such as Ek Type and Indian Type Foundry. The History of Devanagari has been traced through inscriptions, first attempts at hot metal printing in India and overseas during the colonial era, until current day where it is designed on a computer. Filling the gaps in the information to create a concise output has been the greatest challenge of this project.

In order to preserve the nuances of the script and not lose it to the constraints of technology, value has to be added to it by those who design. There is a dire need for designers in the field of script typeface design in this age of digitization and responsive web design. My project aims to inspire and provide a comprehensive reference point for such designers.

The report concludes with a set of typographic panels, that can be displayed at academic institutes or design gatherings attended by students and professionals alike.



"The demands of visual presentation
are, so as to speak,
already embodied in the context."
— Helmut Schmid

Identification of the Problem, Requirement & Approach

Identification of Problem:

There is an acute lack of awareness about Indian typefaces and their evolution. This in turn provides very little to enable the development of an informed approach to type design today. The failure to recognize typographic traditions by modern day graphic designers leads to the non-appreciation of the extraordinary manuscript tradition, its evolution and the effort that goes into the creation of modern day Indic script fonts.

Lack of academic discourse leads to a lack of understanding about Devanagari typography as well as type design. In the days of desktop publishing and now digital publishing, there is a greater need for Indian language fonts due to the widespread access of information through the internet. We do not innovate within typography as it is not common knowledge to classify type based on period or usage, to observe and analyze it. We do not associate type with our own history.

This lack of an easily accessible, comprehensive database of the evolution of Devanagari typography creates doubt and confusion about the working of ownership laws. Fonts are often deemed as a public property and no one wants to pay for the design of an indigenous typeface as “language belongs to everybody”.
(Source: “Conceptual Model for Devanagari Typefaces”, Girish V Dalvi, 2010).

Need and Requirement:


Non-Latin scripts account for being the means of nearly 60% of the world’s communication today— be it social religious, cultural, economic, literary— business, education, day-to-day activities, etc.
(Graham Shaw, “Non-Latin scripts: From metal to digital type”, 2012). Being able to appreciate, criticize, design, develop typefaces will help us be a part of the globally connected society, which is being dominated by Latin-centric design.

In the decade where typeface design has grown exponentially due to the advent of the Internet, an easily available, comprehensive, satisfactory account of the chronological developments of Devanagari typography is not only long overdue but also urgent.

Approach:

The study not only serves as a repository of past type-design practices, but also as a resource to understand how type design has undergone painstaking evolution and refinement through years and years of primitive technology and production techniques in order to create and maintain ideal forms.

It serves to create more opportunity for conversation and discourse in Indian type design, in an unbiased and fair manner.



In design, we do not replicate the past, we need not be condemned to repeat its mistakes or triumphs, but we can always learn from it, especially in coming to critical awareness of quality and appropriateness.

— Paul Luna, “Non-Latin scripts:
From metal to digital type”, 2012

Design Objective

The main objective of this study is to survey the history and understand the concepts underlying Devanagari typography and present it with clarity of concept in a manner that will empower typeface designers and typographers to make well-informed decisions when dealing with indic script fonts.

It aims at creating a database that is simple to understand for design students and professionals alike. It will aim to make understanding the nuances of the script easier and to make known its evolution through the years of changing at the pace of innovation in tool/technology that influences methods of design practice.

Such a solution would aid in the fight for understanding of ownership of typefaces in a country that doesn't appreciate font design due to a lack of association with the script's history.

Devanagari: An Introduction

XXXXXXXXXX (The Devanagari Script)



akshara

(i.e. from a—"not" and kshar—"melt away, perish")

Imperishable, Indestructible, Fixed, Immutable.

Devanagari is the most widely used script of India with a rich evolutionary transition. It is used for over 120 languages, including Hindi, Nepali, Marathi, Pali, Konkani, Bodo, Sindhi and Maithili among other languages and dialects, making it one of the most used and adopted writing systems in the world. It is the working script of Awadhi, Bhatneri, Bihari. Bhojpuri, Khandeshi, Konkani, Kurku, Malwani, Newari, Pali, Rajasthani, etc.

It is an abugida (alphasyllabary: the writing system in which consonant–vowel sequences are written as a unit: each unit is based on a consonant letter, and vowel is secondary, unlike a full alphabet, in which vowels have status equal to consonants) alphabet of India and Nepal. It is written from left to right, and is recognizable by a horizontal line that runs along the top of full letters.

The written system has forty-seven primary characters, of which fourteen are vowels and thirty-three are consonants. The script has no capital or small letters as in Latin, and weighs all characters as equal. The letter order of Devanagari, is based on phonetic principles that consider both the manner and origin organ of articulation of the consonants and vowels they represent. This type of arrangement is known as the Varmala—"garland of letters".

The Devanagari script has been used as the medium for many classical Sanskrit texts.

(Source: Wikipedia, The Free Encyclopedia. en.wikipedia.org/wiki/Devanagari)



History of Devanagari Writing

- Evolution through Manuscripts
- Origin (Brahmi and its branches)
- Visual Markers and Terminology
- Influence of Writing Material and Tools

History of Devanagari Printing

- Devanagari Printing— Beginnings
- Attempts at Mechanization
- Typographic Evolution
- Nirnaya Sagar Era
- Phototypesetting

Digitization of Devanagari

- Early Attempts
- Digitization in India

Evolution of Devanagari Letterform through Manuscripts

Oral Tradition

In India, although the system of writing was known, the preservation of knowledge was handed down generations through oral tradition. This was because it was believed that vocal and verbal learning were superior to in terms of capturing the expressions and meanings of language.

Indus Valley Script, 2600-1900 BC

The earliest script in India so far known is the Indus Valley pictographic script, which was found on over 4000 terracotta seals. This script of the Mohen-jo-daro and Harappan era called Proto-Indian. The inscriptions on these seals seem to be phonetic and ideographic in nature, but they have not been clearly deciphered.

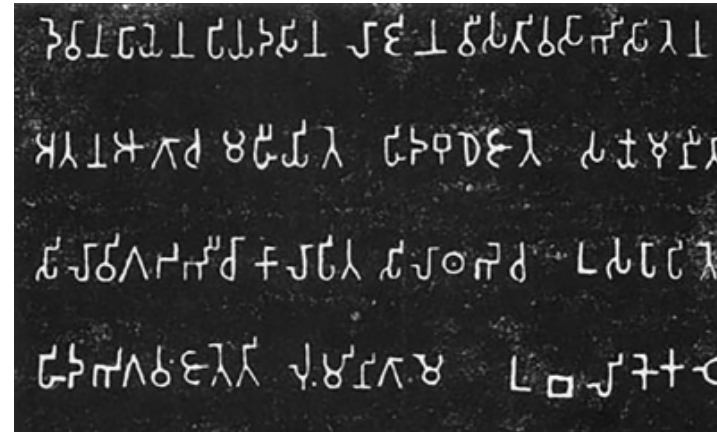


Writings from Indus Valley civilization

Imagesource:designinindia.net



Nagarjunakonda, 2nd Century AD



Fragments of Ashoka's 6th pillar edict (238 BCE)
in Brahmi, sandstone

Scribe recording, 2nd Century AD

Perhaps the earliest known record of writing was a temple sculpture depicting a scribe (bottom left corner) recording three soothsayers depicting a dream about Queen Maya, mother of Lord Buddha in the courtroom of King Suddhodana in Nagarjunakonda—a historical Buddhist town, now an island located near Nagarjuna Sagar in Guntur district, Andhra Pradesh.

Brahmi Inscription, 3rd Century BC

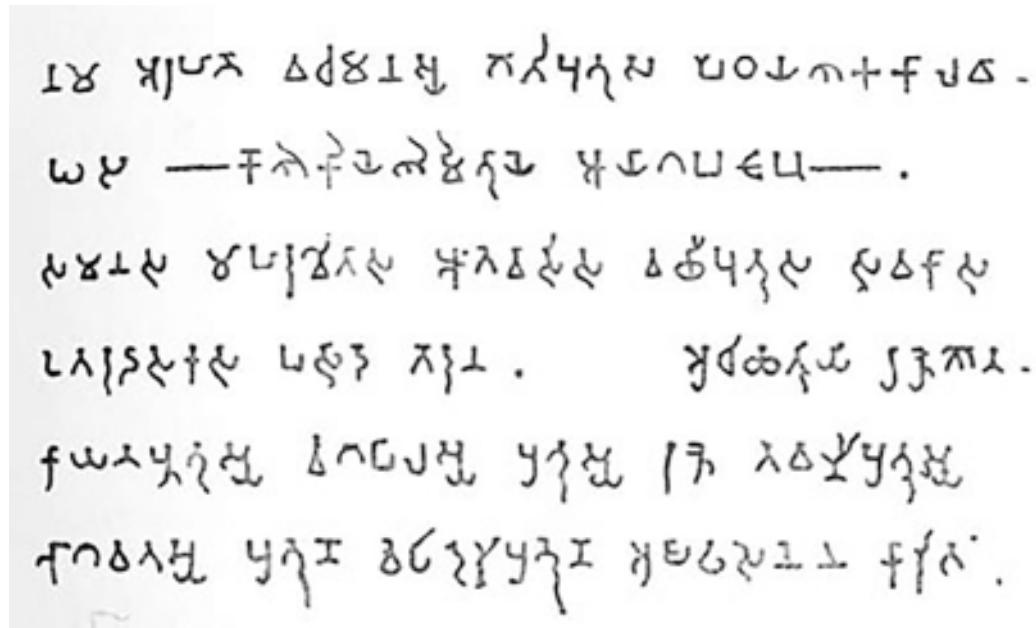
The script of the Brahmins is written from left to right. Widely considered to be the mother of all Indian scripts including the Devanagari Lipi, which evolved from the northern variety of Brahmi script: Gupta, which in time evolved into the Nagari script, and then eventually became the Devanagari that we recognize today.

Asoka Edict on the Rummindei pillar

Brahmi, the script of the Brahmins is written from left to right. Ashoka used this script for his inscriptions, carved into the face of rocks or on stone pillars for longevity of the writings.

velars	DEV	GUJ	PUN	BEN	ORI	TIB	TEL	KAN	TAM	MAL	SIN	BUR	LAO	THA	KHM
k	क	ક	𑀓	𑂓	𑂔	ཀ	క	𑌕	𑌕	𑌕	𑌕	𑌕	𑌕	𑌕	𑌕
kh	ख	ખ	𑀔	𑂔	𑂕	ཁ	ఖ	𑌖	—	𑌖	𑌖	𑌖	𑌖	𑌖	𑌖
g	ग	ગ	𑀕	𑂕	𑂖	ག	గ	𑌗	—	𑌗	𑌗	𑌗	𑌗	𑌗	𑌗
gh	घ	ઘ	𑀖	𑂖	𑂗	—	ఘ	𑌘	—	𑌘	𑌘	𑌘	—	𑌘	𑌘
ṅ	ङ	ઙ	𑀗	𑂗	𑂘	ང	ఙ	𑌙	𑌙	𑌙	𑌙	𑌙	𑌙	𑌙	𑌙

This chart shows the modern descendants of the ancient Brahmi script, ancestral to most of the scripts of South Asia, Southeast Asia, some Central Asian scripts like Tibetan and Khotanese, and possibly Korean hangul (1444 AD).



Temple Inscriptions: Parasnath at Phabosa, 1st Century BCE



Siddham Letter 'A', 5th Century AD

Imagesource:designinindia.net



Jain Instructions using old Gujarathi prose describing how to live a Jain way of life, 16th Century AD



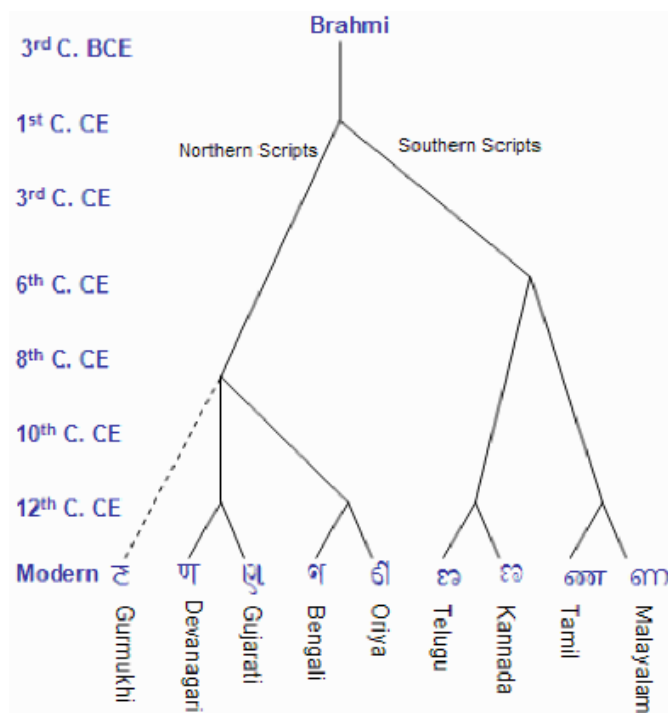
Devanagari manuscript, 17th Century AD

Origin of Devanagari

Writing Systems of India:

Writing is perhaps the most important communication system to be invented. In a region as vast and varied as the Indian subcontinent however, the oral tradition persevered as writing was considered unidimensional as it depended on language. Writing is considered a cultural phenomenon that has revolutionized social history.

Florian Coulmas, in 'The Writing Systems of the World', 1989, claims that in India, the achievement of writing is associated with myths and legends, specifically, Lord Ganesh is said to have broken off one of his tusks to use as a pencil, i.e. it is believed that a God created writing.



(Adapted from Daniels and Bright, The World's Writing Systems.)

Evolution of Brahmic Scripts:

Brahmi, over a millennium, evolved into numerous regional scripts, which are broadly classified into a rounded Southern India group and a angular Northern India group. Eventually, these regional scripts became associated with the local languages and writing was shaped by both.

Northern Brahmi gave rise to the Gupta script during the Gupta Empire, (sometimes also called "Late Brahmi"—5th century), which in turn variegated into a number of scripts during the Middle Ages, such as the Siddham script (6th century), Sarada script (9th century) and Devanagari (10th century).

Southern Brahmi gave rise to the Grantha alphabet (6th century), the Vatteluttu alphabet (8th century), and due to the spread of Hinduism, also gave rise to scripts such as the Baybayin in the Philippines, the Javanese script in Indonesia, the Khmer alphabet in Cambodia, and the Mon script in Burma.

(Source: Wikipedia, The Free Encyclopedia. en.wikipedia.org/wiki/Brahmi_script)

Imagesource:designininindia.net

Devanagari	Asoka script	Gupta script	325 A.D.	A.D. 456	Fourth Century	A.D. 545	A.D. 680	A.D. 775	Other variants	Modi script	Devanagari	Asoka Script	Gupta script	A.D. 325	A.D. 456	Fourth Century	A.D. 545	A.D. 680	A.D. 775	Other variants	Modi script
अ	𑀅									𑀅	अ	𑀅									𑀅
इ	𑀆									𑀆	इ	𑀆									𑀆
उ	𑀇									𑀇	उ	𑀇									𑀇
ए	𑀈									𑀈	ए	𑀈									𑀈
ओ	𑀉									𑀉	ओ	𑀉									𑀉
क	𑀊									𑀊	क	𑀊									𑀊
ख	𑀋									𑀋	ख	𑀋									𑀋
ग	𑀌									𑀌	ग	𑀌									𑀌
घ	𑀍									𑀍	घ	𑀍									𑀍
ङ	𑀎									𑀎	ङ	𑀎									𑀎
च	𑀏									𑀏	च	𑀏									𑀏
छ	𑀐									𑀐	छ	𑀐									𑀐
ज	𑀑									𑀑	ज	𑀑									𑀑
झ	𑀒									𑀒	झ	𑀒									𑀒
ञ	𑀓									𑀓	ञ	𑀓									𑀓
ट	𑀔									𑀔	ट	𑀔									𑀔
ठ	𑀕									𑀕	ठ	𑀕									𑀕
ड	𑀖									𑀖	ड	𑀖									𑀖
ढ	𑀗									𑀗	ढ	𑀗									𑀗
ण	𑀘									𑀘	ण	𑀘									𑀘
त	𑀙									𑀙	त	𑀙									𑀙

Seven Modi letters resemble the letters of the Asoka Edicts and the remaining four resemble the Balbodh :

1 2 3 4 5 6 7 8 9 10 11

Balbodh : ख ज घ ङ द श ष ष ष ष

Modi : छ च घ ङ श ष च च च

Asoka : 𑀅 𑀆 𑀇 𑀈 𑀉 𑀊 𑀋 𑀌 𑀍 𑀎 𑀏

Comparison between Devanagari, Asoka-Brahmi, Post Asoka-Brahmi and Modi letters

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Visual Markers & Terminology

Stroke thickness:

Mukund Gokhale suggests the stroke thickness (thickness of the pen stroke) as the base unit. He suggests a minimum four strokes for the upper and bottom Matras and 8 strokes for the body. Totally, 16 units of strokes can be considered as a primary parameter for the total height. He also goes on to suggest the thickness of the pen stroke be $1/16^{\text{th}}$ of the type height.

Source: "Anatomy of Devanagari", Girish Dalvi, 2009

Angular forms:

Every letter has one straight stroke, one right angle near the headline and at least one break. Every letter except ऋ and ॠ has at least a circle, a curve and a loop.

Problematic forms:

Every letter requires lifting of the pen; many back facing (the open face of the letter faces the left, i.e. opposite to the direction of writing. Eg. ऋ); few have back slopes (the slopes are opposite to the direction of writing, Eg. ॠ) and often the diacritics are placed at inconvenient places.

Source: Bapurao S. Naik – "Typography of Devanagari", Volume 1, Revised, 1971.

Other irregularities:

The distinctive parts of some letters like ऋ and ॠ do not cover the entire x-height. Others spread below the portion— ऋ, ॠ and ॡ. The Devanagari letters are aligned at the head-line and not at the base-line. The placement of matras in various positions with regard to the letter limits the legibility of Devanagari, especially when reproduced in small sizes.

Vowel	Matras	Name
अ		Kana
इ	ॐ	Short velanti
उ	ॐ	Long velanti
ऋ	ॐ	Short ukar
ॠ	ॐ	Long ukar
ॡ	ॐ	Single prithvi sign
ॢ	ॐ	Double prithvi sign
ॣ	ॐ	Single klpti sign
।	ॐ	Double klpti sign
॥	ॐ	Single matra
०	ॐ	Double matra
ॠ	ॐ	Kana matra
ॡ	ॐ	Kana double matra
ॢ	ॐ	Anuswar
ॣ	ॐ	Visarg

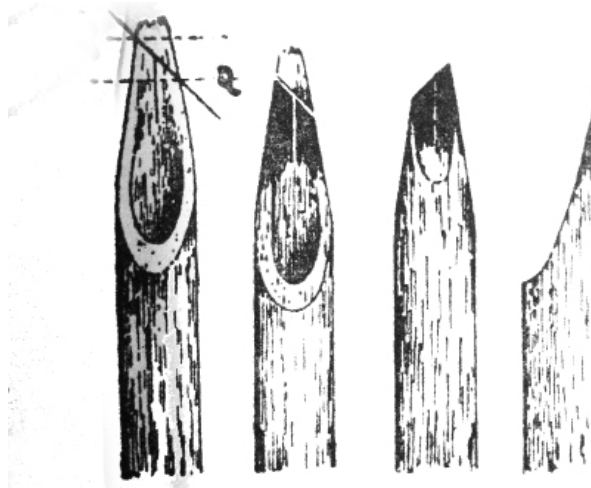
A consensus of terms agreed by Naik, Bhagwat and Gokhale.

Source: "Anatomy of Devanagari", Girish Dalvi, 2009

Influence of Writing Materials & Tools

The tool dictates the 'shape' of the letterform. Its spirit and essence comes from the spine of the character.

—Douglas Hofstadter



Bamboo/Reed pen traditionally used to write Devanagari

Tools:

Traditionally, Devanagari is written with a reed or bamboo pen that is cut broad to a slant in the opposite direction. The angle of the pen-point to the head-line is kept steady at 45°.

Writing Materials:

Stone inscription:

Emperor edicts were chiseled into polished stone for longevity, written in ink after the stone had been polished by rubbing, then inscribed. The chiseling created sharp-pointed ends and did not permit very fine lines.

Iron inscription:

The Mirhauili Iron pillar at the Qutub Minar has an engraving and casting which is done with precious metals like gold and silver.

Tada patra (Palm leaf) inscription:

A common writing medium in the south, the palm leaf varied from 1-3 feet in length and 1-4 inches in width on which the script was incised with a stylus after which lamp black was rubbed on it. It was widely popular in the South. In North India, ink was used and the letters took a more rounded form. The veins of the leaves prevented the alphabet from having straight lines. The stylus used for incising was usually blunt to prevent tearing of the smoothened, dried leaf.

Tamra patra (Copper plate) inscription:

Hammered, engraved copper plates were widely used and reused with ink after the invention of paper in the 12th century.

Cloth:

Done with brush and ink, but it is not a long lasting option but it did allow for fine lines.

Paper:

With the advent of paper in the 12th century, writing became easy, light-weight and convenient as even irregularities on the surfaces helped hold the ink or trap particles of charcoal.

Image source: "Typography of Devanagari", B S Naik, 1971

Devanagari Printing— Beginnings & Attempts at Mechanization

Although the printing press arrived in India in 1556, books were not printed in Devanagari till 1796, when John Gilchrist printed his “*Grammar of the Hindustanee Language*”.

The early type-founders had to cast as many as 1000 molds for one ‘fount’ of Devanagari.

Degree System:

The Nirnaya Sagar Type Foundry introduced three step setting—known as the degree system in which the main character is cast at half of required point size, the *matras* and *ukarsare* cast at quarter point size each. Justification and displacement of vowels were a recurring problem in this method.

This method helped bring down the number of molds to about 600 per fount.

Early attempts at mechanization

The earliest Indian printing center was set up in Goa, and subsequently more centres were set up in Cochin, Quilon, Calicut, Vaipicotta. Later it spread to the east coast at Tranquebar, Madras, Fort William, Calcutta and Serampore.

First printing press of India:

A press intended for installation in Abyssinia (shipped March 29, 1556) from Portugal arrived in Goa on September 6, 1556. The Spaniard that came with it, Br. Juan de Bustamante, stayed behind and went on to publish the first pamphlet on Indian soil—“*Conclusoes*” by Antonio de Quadros—it was in Latin. Jesuit Missionaries printed “*The Spiritual Compendium of the Christian Life*” in Goa that same year around the same time.

The irregular construction of Devanagari letterforms scared away many early type cutters since the very beginning.

Attempts at printing Devanagari in other parts of the world

Devanagari block printing was attempted in Europe as early as 1667 (seen in “*China Illustrata*” by Athanassii Kircheri).

Between 1740 and 1744, in Rome, John Christopher got four Indian students who happened to be in Rome at the time to design a typeface, which he cut in order to publish “*Alphabeticum Bhramanicum*” for the Propagation of the Faith Press.

Bejamin Schultz published “*Grammatica Hindostanica*” in 1744 as well, which gave a description about the grammar of Hindi.

Early Printing in Indian Scripts

First Devanagari Printing Press at Surat:

Bhimji Parekh of Surat first thought of setting up a press to print in Devanagari in 1670 AD. A printer, Henry Hills was promised a salary of £50 and the press was established in 1674. Bhimaji wrote again in 1678 asking for the help of a type founder instead, but the result of this communication is unknown.

The earliest Devanagari printed in India, was done in Calcutta at the Chronicle Press. “*Asiatic Miscellany*” (1787, Calcutta) contained Sanskrit verses printed with movable type.

Some notable events:

- Lokmanya Tilak got types cast as early as 1904.
- G P Vijapure, then manager of Kirloskar Press, was granted a patent for his scheme of linear setting of Devanagari on August 27, 1930.
- Linotype Devanagari, designed by Hari G Govil, in the early 1930s but was not satisfactory, as was Monotype Devanagari—it was not designed for high speed newspaper printing.



CVNEVM

INSCRIPTIO BRACHMANNICA

मा
कारोत्तो . ऐमानुरेत
और
मार'आ . ऊत्तोत्तीजडे . आडेत्तैडे
दमजोगा . ऊ . नंदाओ . मरमत्तर
ओ . जिद्ध . हो . ऐक . दरेम
अफमान . और . अमीन . का . सुन्दरीद
नीत . दं-दाना . दीआओ
और . सुन्दारा . बकुम
और . ऊदरत . मो . अमीन . मो
तादी . दुगा . अफतति
होते . पुनेओ ।

Devanagari types cast in Rome

Image source: “*Typography of Devanagari*”, B S Naik, 1971

Typographic Evolution

Charles Wilkins,
The Father of Devanagari Typography:

He arrived in India in 1770 and joined the East India Company as a writer. He published “*Sanskrit Grammar*” in 1779 and had translated works such as the “*Bhagavadgita*”, “*Sakuntala*” and “*Hitopadesa*”. He invented and cast types in Devanagari, Bengali and Persian.

He had experience in punch cutting and completed a Bengali fount himself for his book “*Grammar of the Bengalee Language*”. In 1795, he cut a complete fount of Devanagari type.

মর্যাদা থাকিতে কেনো নাজাহো ওচিয়া!
আপন সদৃশ স্থানে ওচি বৈস গিয়া ॥

এত সুনি সোমদত্ত কোপেতে জনিন!
অগ্নির ওপরে জেন হুত ঢালি দিন ॥

সোমদত্ত বলে সেনী নাকবিস গবর্ব!
তোমার মহিমা জুত আমি জানি সর্ব ॥

Wilkins’ types used in the *Grammar of the Bengal Language*, Hooghly, 1778.”

Image Source: Bapurao S. Naik –
Typography of Devanagari,
Volume 1, Revised, 1971.

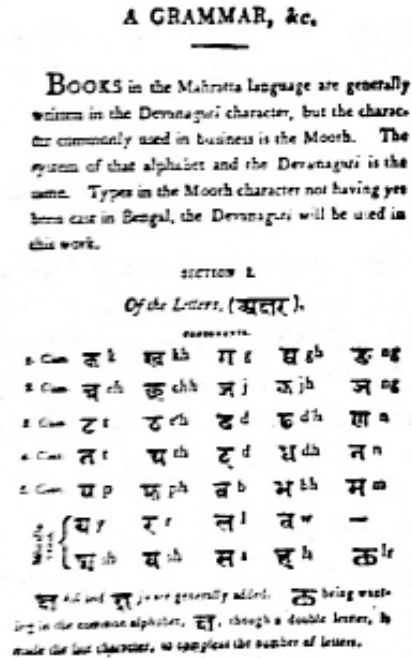
William Carey

Carey aimed to spread the word of the bible to the Hindus and therefore had been gifted a printing press in 1798, by an indigo planter named Uday from Madanabati, which he took to Serampore with him. He published “*Bengalee translation of the New Testament*” in 1801 at the Serampore press. He went on to publish a “*Mahratta Grammar*”, a “*Sanskrit Grammar*”, a “*Punjabee Grammar*”, and a “*Telinga Grammar*”.

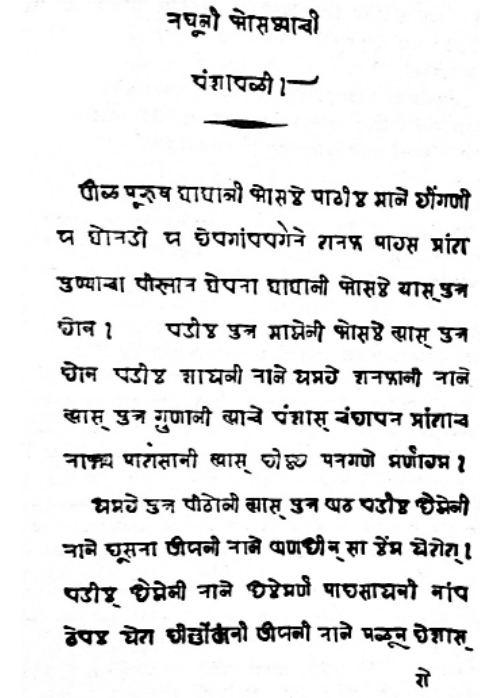
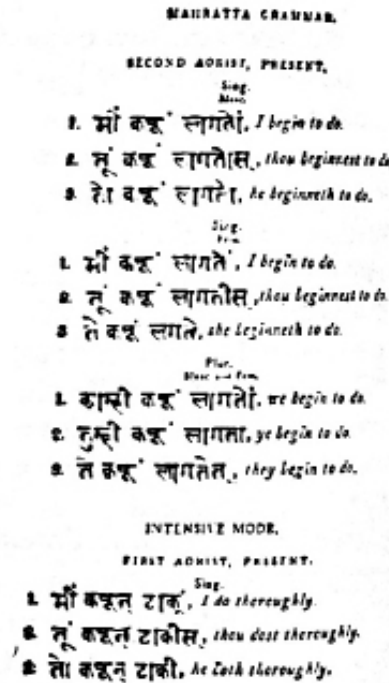


हक्यापर्वना बरून हकनिर्मलपाण्याचा
हलयेन होना नेथे येक्या उष्णकांनी हक दि
वसो हकलां उगा व हकये उका उभयसां ही
हक्या व मुहूर्त पाणी प्या व यास आले लां उ
गा उन्नत प्रदेशी उभा राहिला होता व ये उ
का लालपट प्रदेशी काही दूर अंन रा ने उभा
होना लां उगा ये मनी कोण्या मकारे ही ये उ
क्या मी दाट वने भां उजे करा व या वे हो ने नद
नुसार ये उक्या सविद्या हला गला जे अ रे ये उ
क्या निर्मल आहे ने पाणी उहुलून मला प्या व

Wilkins’ types used in Balbodha Mukhawali



Types cut under the supervision of William Carey, Calcutta, 1805.



Modi types used by William Carey, Raghujhi Bhosalayachi, Serampore, 1815.

Image Source: Bapurao S. Naik –
 Typography of Devanagari,
 Volume 1, Revised, 1971.

17th Century Printing in Bombay (Nirnaya Sagar Era)

The Bombay Courier Press was established in 1970.

Nana Fadnavis first conceived the idea of printing the Bhagavadgita by copperplate impressions. It was completed in 1805 under the patronage of Chief of Miraj.

Fardunji Marzban is credited with setting up the Bombay Samachar Press in 1812, the first to print Indian Languages.

The Bombay Government started its press in 1830, which was taken over by the Byculla Education Society in 1848.

Nirnaya Sagar Era

Ganpat Krishanji constructed a wooden press and set up a Litho Printing Unit in 1830. He then made his own ink and proceeded to print the Marathi calendar (Panchang Saka, 1753).

He learnt the art of letterpress from Thomas Graham, and cut Marathi and Gujarati types, and went on to print several books.

By 1867 there were 25 printing presses in Bombay; namely,

- Times of India
- Bombay Gazette
- Byculla Education Society
- Indu Prakash
- Jame-Jamshed
- Akbari-i-Soudagar
- Darpan, etc.

Jaoji Dadaji started his own type foundry in 1864. He prepared punches and cast types at his residence in a heated iron Kadhai.

Nirnaya Sagar was started with one Super Royal Hand Press at Kalbadevi. The first book printed was Garud-Puran in Sanskrit.

During 27 years of its existence, Nirnaya Sagar produced 20 Marathi typefaces, 15 Gujarati typefaces and 44 English heading types. The Press and Foundry printed 193 Sanskrit and 228 Marathi titles of its own,

Gujarati Type-Foundry

Founded in October 1900 to maintain types required by the Gujarati Printing Press.

The Lokasangrah and Prakash type-foundries of Pune made use of the pantograph machine for the first time in India. Lokasangrah in 1941 introduced a typeface akin to a sans-serif.

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FACES ISSUED BY THE GUJARATI TYPE FOUNDRY

- 17 12 Point Bimal
मुंबई काँग्रेस अधिवेशनात कर्तृत्वपूर्ण मराठी रंगभूमीचे एक अभिरूप नाट्यदर्शन घडविण्यात आले.
- 18 16 Point Pushpa Italic
मुंबई काँग्रेस अधिवेशनात कर्तृत्वपूर्ण मराठी रंगभूमीचे एक अभिरूप नाट्यदर्शन घडविण्यात आले.
- 19 16 Point new style Italic
मुंबई काँग्रेस अधिवेशनात कर्तृत्वपूर्ण मराठी रंगभूमीचे एक अभिरूप नाट्यदर्शन घडविण्यात आले. १२३४५६७८९०
- 20 18 Point Vasant
मुंबई काँग्रेस अधिवेशनात कर्तृत्वपूर्ण मराठी रंगभूमीचे एक अभिरूप नाट्यदर्शन घडविण्यात आले. १२३४५६७८९०
- 21 24 Point Bharat
मुंबई काँग्रेस अधिवेशनात कर्तृत्वपूर्ण मराठी रंगभूमीचे एक अभिरूप नाट्यदर्शन घडविण्यात आले. १२३४५६७८९०
- 22 24 Point Uma
मुंबई काँग्रेस अधिवेशनात कर्तृत्वपूर्ण मराठी रंगभूमीचे एक अभिरूप १२३४ नाट्यदर्शन घडविण्यात आले. ५६७९०

Faces issued by the Gujarati type foundry.

FACES ISSUED BY THE PRAKASH TYPE FOUNDRY, POONA

- 28 12 Point Raghunath
सुदूरवर्ती पर्वत सुगम्य और उसपर चढ़ना सरल मालूम होता है। उसका शिखर आवाहन करता दिखाई देता है लेकिन ज्यों ज्यों हम उसके नजदीक पहुंचते हैं, कठिनाईयों दिखाई
- 29 12 Point Ashok
सुदूरवर्ती पर्वत सुगम्य और उसपर चढ़ना सरल मालूम होता है। उसका शिखर आवाहन करता दिखाई देता है, लेकिन ज्यों ज्यों हम उसके नजदीक पहुंचते हैं।
- 30 14 Point Madhav
मनुष्यमें सबसे बड़ी शक्ति विचारोंकी शक्ति है। इसकेद्वारा मनुष्यने बड़े बड़े आविष्कार किये हैं। किन्तु मनुष्य अपनी विचारशक्तिका श्रीगणेश धामर एहका विशेष श्रेयमान अमतिक ऐश्वर्य जलाल
- 31 14 Point Narayan
सुदूरवर्ती पर्वत सुगम्य और उसपर चढ़ना सरल मालूम होता है। उसका शिखर आवाहन करता दिखाई देता है, लेकिन ज्यों ज्यों हम उसके नजदीक पहुंचते हैं।
- 32 12 Point Vishnu
हम समाज के साथ ही ऊपर उठ सकते हैं और समाज के साथ ही नीचे गिरना होगा। यह तो नितान्त असम्भव है कि कोई व्यक्ति अपूर्ण
- 33 16 Point Vishnu
हम समाज के साथ ही ऊपर उठ सकते हैं और समाज के साथ ही नीचे गिरना होगा। यह तो नितान्त असम्भव है
- 34 24 Point Vishnu
हम समाज के साथ ही ऊपर उठ सकते हैं और समाज के साथ ही नीचे गिरना

Faces issued by the Prakash type foundry.

Image Source: Bapurao S. Naik –
Typography of Devanagari,
Volume 1, Revised, 1971.

For Devanagari this meant clearer, sharper glyphs and proper positioning of Matras, i.e. better kerning and creation of more typefaces.

In the early 1970s Adrian Frutiger was consulted by NID to help Mahendra Patel created Monotype Devanagari Univers, but the font was not commercialized. Years later, he designed the Maha font family, to match Univers and also NIDMahendra to match Frutiger. These were released in 2001 and 2004 respectively.

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Early Attempts

Devanagari is considered one of the most complex typefaces to be digitized due to its intricacies and large number of glyphs.

Linotype first digitized Matthew Carter's Devanagari into a postscript. Monotype soon followed, Date's Devanagari became Devanagari MT which was supplied to Microsoft as Arial Unicode MS and Macintosh.

In 1978, Linotype introduced the phonetic keyboard (Ross, 2012), which removed direct entry keyboarding and brought down the numbers of character sets.

Open type enabled fonts like Adobe Devanagari to possess as many as 800 glyphs.

Digitization in India

Laxman Shridhar Wakankar's book "Ganeshvidya—The Indian Traditional Approach to Phonetic Writing" was published by Tata Press in 1968.

The electronic commission of the Govt. of India accepted his Phonetic Input-Output concept.

ITR

Mukund Gokhale, Wakankar and Vasant Bhat formed the Institute of Typographical Research in 1979.

ITR designed optical fonts for film, digital fonts for phototypesetting machines, electronic typewriters and metal type matrices.

They later formed a DTP solution called Swadesh and created fonts such as Natraj (Mohan Thatte) and Yogesh (Mehmuddin Ali Peerzade), which are widely known for their readability in small sizes, making them ideal for body copy.

R K Joshi

In 1982, Raghunath Krishna Joshi worked with R. Narasimhan at the Tata Institute of Fundamental Research (TIFR) to create the Desha coding scheme and later in 1985, he developed Vinyas, a stroke based font development system at NCST (National Centre for Software Technology). He designed dot matrix fonts, PS fonts to support multilingual text processors

such as Aalekh (1988). In 1996, he designed fonts for Microsoft's Windows 2000 and created 12 fonts for 'IndiX', an open source project at C-DAC(The Centre for Development and Advanced Computing, Pune). He is best known for his typefaces— Mangal and Raghu.

C-DAC

C-DAC was started in 1988 by the Ministry of Communications & Information Technology (MCIT) was started to develop technologies for supercomputers. C-DAC has developed several True Type Fonts (TTFs) and Open Font Format for various Indian Languages. For UNICODE support in various applications, C-DAC has developed Open Type Fonts for various scripts in all 22 official languages. Over 8000 fonts consisting of True Type, Open Type and Bitmap have been produced so far.

GIST (Graphics and Intelligence based Script Technology) started in IIT Kanpur in 1986 demonstrated Devanagari input into computers for users. This group went on to form the code of information later adapted by the Unicode consortium.

Fonts and Foundries

झिखृफुद्धी बुठूभीश् किट्रेर्न आंग्रै

Card #29: Font Name: Yogesh designed by Mehmuddin Ali Peerzade, originally published by Experto Systems, and later by ITR, now published by CDAC.

झिखृफुद्धी बुठूभीश् किट्रेर्न आंग्रै

Card #30: Font Name: Arial Unicode MS, Monotype Devanagari, originally a Nirnaya Sagar Typeface modified by S.R.Date, published by Monotype, now published by the Microsoft Corporation.

झिखृफुद्धी बुठूभीश् किट्रेर्न आंग्रै

Card #1: Font Name: NIDMahendra designed by Mahendra C. Patel for the National Institute of Design

झिखृफुद्धी बुठूभीश् किट्रेर्न आंग्रै

Card #2: Font Name: Alankar published by CDAC

झिखृफुद्धी बुठूभीश् किट्रेर्न आंग्रै

Card #3: Font Name: Akshar published by CDAC

झिखृफुद्धी बुठूभीश् किट्रेर्न आंग्रै

Card #25: Font Name: Sanskrit 2003 published by Omkarananda Ashram a digitization of a letterpress typeface by the Nirnagar Press.

झिखृफुद्धी बुठूभीश् किट्रेर्न आंग्रै

Card #26: Font Name: Mangal XP designed by Raghunath Joshi published by the Microsoft Corporation.

झिखृफुद्धी बुठूभीश् किट्रेर्न आंग्रै

Card #27: Font Name: Raghu designed by Raghunath Joshi, published by CDAC and several Linux distributions.

झिखृफुद्धी बुठूभीश् किट्रेर्न आंग्रै

Card #28: Font Name: Surekh published by CDAC

Font Samples of fonts by C-DAC, Mahendra Patel, RK Joshi, Monotype, etc.

Image Source: "Conceptual Model for Devanagari Typefaces", Girish V Dalvi, 2010)

ITR Devanagari Fonts set in 16 point

Aabha - Light / Bold

अनेक वर्ण क्रमरीतियुक्तः कखागघाङचछजझीअटठः अडण्डणस्तोऽथदधीनपंफुल्बभीमयुरोलवशेषसिंहः

अनेक वर्ण क्रमरीतियुक्तः कखागघाङचछजझीअटठः अडण्डणस्तोऽथदधीनपंफुल्बभीमयुरोलवशेषसिंहः

Aakanksha - Light / Medium / Bold

अनेक वर्ण क्रमरीतियुक्तः कखागघाङचछजझीअटठः अडण्डणस्तोऽथदधीनपंफुल्बभीमयुरोलवशेषसिंहः

अनेक वर्ण क्रमरीतियुक्तः कखागघाङचछजझीअटठः अडण्डणस्तोऽथदधीनपंफुल्बभीमयुरोलवशेषसिंहः

अनेक वर्ण क्रमरीतियुक्तः कखागघाङचछजझीअटठः अडण्डणस्तोऽथदधीनपंफुल्बभीमयुरोलवशेषसिंहः

Abhishek - Light / Bold

अनेक वर्ण क्रमरीतियुक्तः कखागघाङचछजझीअटठः अडण्डणस्तोऽथदधीनपंफुल्बभीमयुरोलवशेषसिंहः

अनेक वर्ण क्रमरीतियुक्तः कखागघाङचछजझीअटठः अडण्डणस्तोऽथदधीनपंफुल्बभीमयुरोलवशेषसिंहः

Ajinkya - Light / Bold

अनेक वर्ण क्रमरीतियुक्तः कखागघाङचछजझीअटठः अडण्डणस्तोऽथदधीनपंफुल्बभीमयुरोलवशेषसिंहः

अनेक वर्ण क्रमरीतियुक्तः कखागघाङचछजझीअटठः अडण्डणस्तोऽथदधीनपंफुल्बभीमयुरोलवशेषसिंहः

Ajit - Light / Bold

अनेक वर्ण क्रमरीतियुक्तः कखागघाङचछजझीअटठः अडण्डणस्तोऽथदधीनपंफुल्बभीमयुरोलवशेषसिंहः

अनेक वर्ण क्रमरीतियुक्तः कखागघाङचछजझीअटठः अडण्डणस्तोऽथदधीनपंफुल्बभीमयुरोलवशेषसिंहः

Akshar - Light / Bold

अनेक वर्ण क्रमरीतियुक्तः कखागघाङचछजझीअटठः अडण्डणस्तोऽथदधीनपंफुल्बभीमयुरोलवशेषसिंहः

अनेक वर्ण क्रमरीतियुक्तः कखागघाङचछजझीअटठः अडण्डणस्तोऽथदधीनपंफुल्बभीमयुरोलवशेषसिंहः

Font Catalogue by ITR

The Modular Infotech Shree Lipi font catalogue is arranged numerically (alphabetically) as the fonts do not have names but rather numbers associated with them. (See figure 20)

Shree-Lipi Pearl		Devnagari		Shree Lipi : 7.1	
Font No.				Font No.	
0706	भारत मेरा देश है। सभी भार -	1006	भारत मेरा देश है। सभी		
0707	भारत मेरा देश है। सभी	1014	भारत मेरा देश है।		
0708	भारत मेरा देश है। सभी भार -	1016	भारत मेरा देश है। सभी		
0709	भारत मेरा देश है। सभी	1064	भारत मेरा देश है। सभी		
1079	भारत मेरा देश है। सभी	1065	भारत मेरा देश है। सभी		
0713	भारत मेरा देश है। सभी	1085	भारत मेरा देश है। सभी		

Modular Infotech Font Catalogue by Shree Lipi Pearl, arranged alphabetically, each font is associated to a number.

ISFOC

Devanagari

DV-Dhruv *

26 pt. Normal & Bold

Italic available

अ

72 pt. Bold

DV-Kishor *

26 pt. Normal & Bold

Italic available

अ

72 pt. Bold

DV-Alankar *

24 pt. Normal & Bold

Italic available

अ

72 pt. Bold

विदेशों को भारत की लिपि की देन सबसे अधिक महत्वपूर्ण और चिरस्थायी रही है।

विदेशों को भारत की लिपि की देन सबसे अधिक महत्वपूर्ण और चिरस्थायी रही है।

विदेशों को भारत की लिपि की देन सबसे अधिक महत्वपूर्ण और चिरस्थायी रही है।

Font Catalogue by C-DAC

Image Source: "Conceptual Model for Devanagari Typefaces", Girish V Dalvi, 2010)

Current-day Scenario

Two type foundries that are doing exceptional work in Devanagari type design today: Indian Type Foundry, started by Satya Rajpurohit and Peter Bilak of Typotheque and Ek Type by Dr. Girish Dalvi and Sarang Kulkarni (of White Crow). These studios are making Devanagari exciting again and bringing a modern sensibility to type design in India.



Font Samples by Indian Type Foundry



Painter Kafeel Font Sample by Whitecrow

Image Source: ektype.in;
indiantypefoundry.com

Ek Devanagari

View

Weights & Styles

Glyph Set

Purchase Options

अनेक भाषा, अनेक प्रांत, अनेक रितीरिवाज

जैसलमेर का किला

रेशम, कपड़ा, लकड़ी, प्लास्टिक, कागज, स्याही, मुद्रण मशीन

एकात्मता

विन्ध्य और हिमालय पर्वत

यहां की संस्कृति अनोखी है

कालिदास

७५१७ कि.मी. लम्बी समुद्र तट रेखा

मसाला

¼ हिस्सा घने जंगलों से घिरा यह रमणीय स्थल

Ek Devanagari Font sample by Ek Type



Modak Font Sample by Ek type and Whitecrow

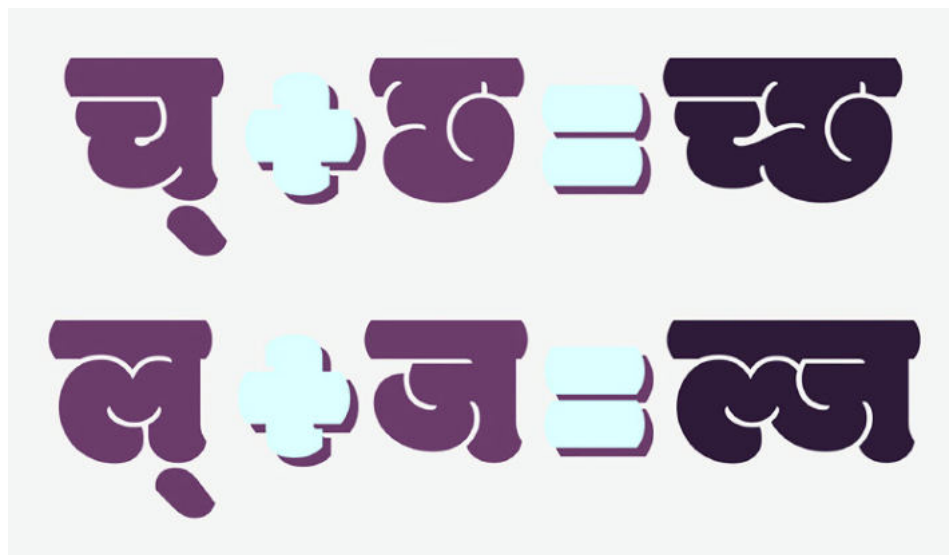


Image Source: ektype.in;
luc.devroye.org

Anatomy

Descriptions and Definitions:

In the 'Anatomy of Devanagari', 2009, Girish Dalvi sums up the various approaches taken by experts in the field of Devanagari typography, describing and defining the anatomy of letters. Unlike the Latin alphabet, Devanagari has no standardized nomenclature that is widely accepted.

Bhagwat & Naik

Bhagwat's focused was on handwritten Devanagari and not on printed Devanagari;; to create a grouping system on the graphical structure of Devanagari based on the following criteria:

1. Size
2. Simplicity
3. Motion, stroke and angles
4. Endings, flourishes, fenced etc.
5. Groups according to the parts of letter design.
6. Groups based on graphical similarity

M W Gokhale

The next attempt was done by M W Gokhale; it was first published in 1975–76. Gokhale uses the “body” paradigm as a reference for the vertical proportion of the letters as follows:

- 𑖀𑖁𑖂𑖃𑖄𑖅𑖆𑖇𑖈𑖉 (topmost line)
- 𑖊𑖋𑖌𑖍𑖎𑖏𑖐𑖑𑖒𑖓 (head-line, start/end)
- 𑖔𑖕𑖖𑖗𑖘𑖙𑖚𑖛𑖜𑖝𑖞 (shoulder line)
- 𑖟𑖠𑖡𑖢𑖣𑖤𑖥𑖦𑖧𑖨𑖩 (navel line)
- 𑖪𑖫𑖬𑖭𑖮𑖯𑖰𑖱𑖲𑖳𑖴 (knee position line)
- 𑖵𑖶𑖷𑖸𑖹𑖺𑖻𑖼𑖽𑖾𑖿 (foot line)
- 𑗀𑗁𑗂𑗃𑗄𑗅𑗆𑗇𑗈𑗉𑗊 (extreme bottom line)

Letters	Common element	Letters	Common element	Letters	Common element
ग म भ न	𑖎 and/or 𑖏	प ष फ ण	𑖐	अ आ ओ औ अं अः	अ
र स (ग ख)	𑖒 (𑖑)	ट ठ ढ द (क्ष)	𑖔	ए ए	ए
त ल लृ	𑖔	ड ढ इ ई झ ह	𑖕	ऋ ॠ	ऋ
व ब क ख	𑖖	य थ	𑖗	उ ऊ	उ
च (ज) घ ङ छ	𑖘 or 𑖙	श ळ ञ ण	—		

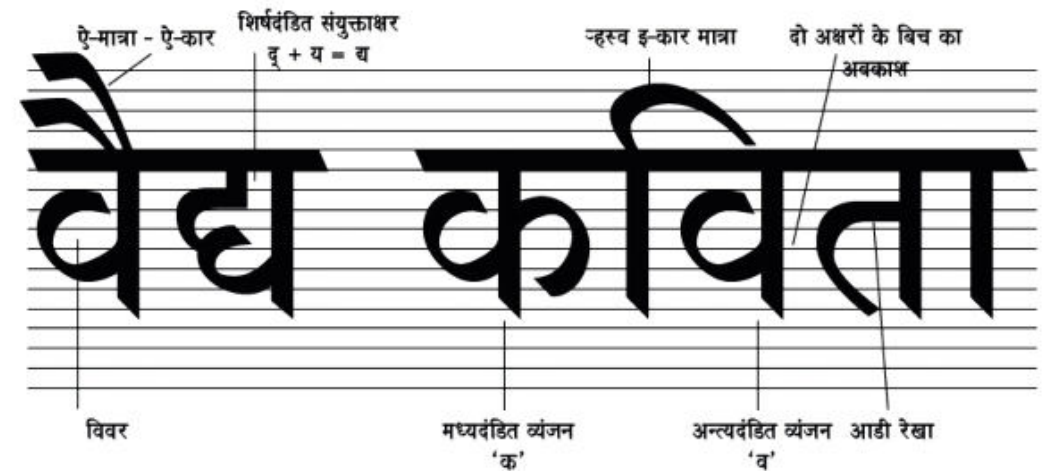
Bhagwat's graphical analysis and grouping



Image Source: Bapurao S. Naik – Typography of Devanagari, Volume 1, Revised, 1971.

	Vowels	Consonants	
Group 1	letters with full verti-bar	attached (अंत्यदंडयुक्त)	20
	अ	ख घ च ज झ त थ द न प ब भ म य व ष स क्ष ज्ञ	
Group 2	letters with full verti-bar	detached (अंत्यदंडयुक्त)	3
	ग ण श		
Group 3	letters with a short-bar	(अल्पदंडयुक्त)	14
	उ ऊ लृ लृ ड छ ट ठ ड ड द ल ह ळ		
Group 4	letters with a central-bar	(मध्यदंडयुक्त)	4
	ऋ ॠ क फ		
Group 5	letter without a bar	(दंडरहित)	1
	र		

Bapurao Naik's "Graphical Classification of Devanagari Varnas")



"Cartographic description of Devanagari" — M. W. Gokhale

Stylistic Exploration

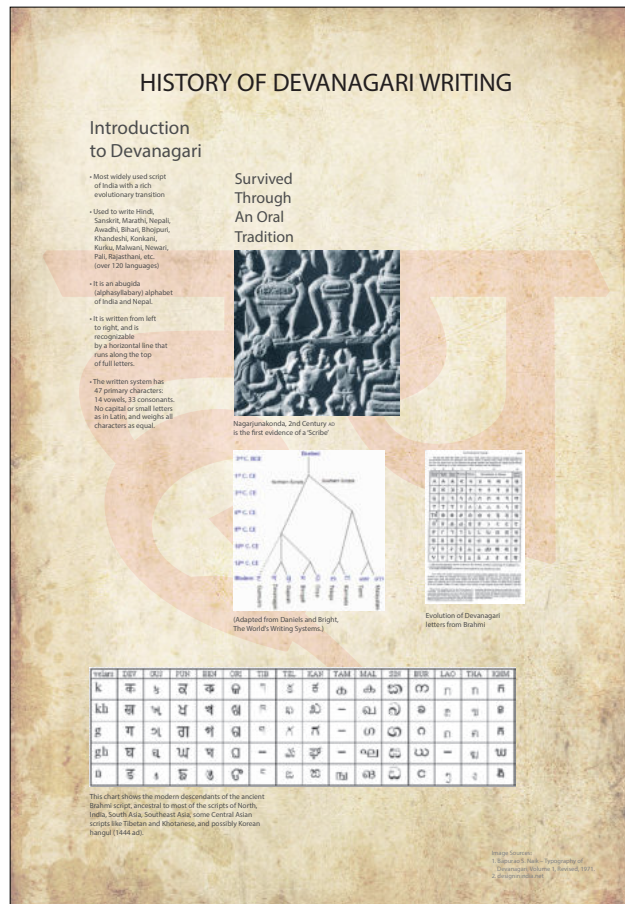
Exhibition Design

An Exhibition of Panels related to the history of Devanagari will be created for display as the final product of this project.

A brochure/booklet will also be created to aide onlookers during the exhibit.

Number: 12-15 panels (approx.)

Size: 420mm x 600mm



Creation of Panels (Process Underway)

INFLUENCE OF WRITING MATERIAL AND TOOLS

WRITING MATERIALS

- **Overinflation**
In 1974, the US was hit by a low-oil-price shock that caused massive stagflation. To combat stagflation, the Fed raised interest rates.
- **Overinflation**
The 1970s US also saw an example of stagflation as the combined effects of low oil prices and inflation.
- **Volatility of the US economy**
A major cause of stagflation in the 1970s was the price of oil, which was volatile. The US economy was hit by a low-oil-price shock in 1974.
- **Global Overinflation**
The 1970s US also saw a low-oil-price shock that caused stagflation.

• • •

- ^aValues of χ^2 distributions derived from the chi-square test for the null hypothesis of no difference between the two groups and between the two classes of variables for the chi-square test.

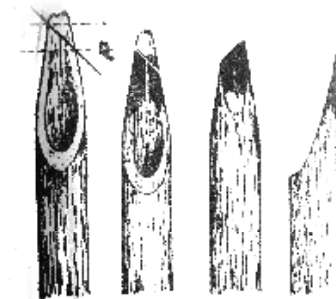
REFERENCES

- They have the same length as the corresponding one in the host and are not broken.
- The *Overlapped* format is illegal under the *File* and *Network* protocols. The *Share* protocol does not support *Overlapped*, especially when overlapped is not done.

TOOLS

TRADITIONALLY, MECHANICAL IS WRITTEN WITH A REED OR BAMBOO PEN THAT IS CLAMPED TO A SLANT OF THE PEN-PINCH AND KEPT STEADY AT 45°.

VISUAL MARKERS AND TERMINOLOGY



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Important Notes to Mail-Order Customers:

HISTORY OF DEVANAGARI WRITING



**SUPPLIED THROUGH
AMERICAL TRADING**

Physical Activity and Training in the Adolescent Athlete

INTRODUCTION TO DEVANAGARI

- Identify and name major fields with subfields or subdisciplines
- Define and describe the fields: Science, Medicine, History, Social and Natural Sciences, Humanities, Business, Education, Law, Arts, Engineering, etc. (overlapping language)
- Define and describe subdisciplines and interdisciplinary fields
- Describe how the disciplines relate to each other in the interdisciplinary and multidisciplinary ways
- The various questions of science education:
 - What is science? What is education?
 - How do we learn? What are the origins of knowledge and learning?

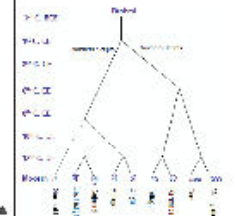
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	
1970	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317



¹ From 1990, 1991, and 1992, data were used for the sample, but were not available for 1993.

Environ	4	5	6	7	8	9	10	11	12
Land	1	2	3	4	5	6	7	8	9
Water	1	2	3	4	5	6	7	8	9

Keywords: child sexual abuse; disclosure; social support



1. **Introduction**
 2. **Methodology**
 3. **Results**
 4. **Conclusion**
 5. **References**

EVOLUTION THROUGH MANUSCRIPTS



Indus Valley Civilization

THE EARLIEST SCRIPT IN INDIA, FOUND ON OLIVER ARMS SEALS, ALSO CALLED PRAKRIIT-INDIA



BRASS COIN OF THE MAURYA EMPIRE, 3RD CENTURY BC, FOUND AT KANOUJ, UTTAR PRADESH. THE COIN IS IN THE FORM OF A DISC AND IS 1.5 CM IN DIAMETER. IT IS THE ONLY COIN OF THE MAURYA EMPIRE THAT IS KNOWN TO HAVE BEEN ISSUED BY A MAURYA RULER.

Brass coin of the Maurya Empire, 3rd century BC, found at Kanauj, Uttar Pradesh



Manuscript of the Rigveda, 15th century BC, found at Kanauj, Uttar Pradesh

ॐ नमो भगवते वासुदेवाय ।
ॐ नमो भगवते वासुदेवाय ।
ॐ नमो भगवते वासुदेवाय ।
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Manuscript of the Rigveda, 15th century BC, found at Kanauj, Uttar Pradesh



Logo of the Ministry of Culture, Government of India

DEVANAGARI PRINTING—BEGINNINGS

• The first printed book in Devanagari was the 'Pravara' by the 'Pravara Press' in 1817.

• The first printed book in Devanagari was the 'Pravara' by the 'Pravara Press' in 1817.

FIRST PRINTING PRESS OF INDIA

A group of British merchants, including the 'Pravara Press' in 1817, established the first printing press in India.

ATTEMPTS AT MECHANISATION

• The first printed book in Devanagari was the 'Pravara' by the 'Pravara Press' in 1817.

ATTEMPTS IN OTHER PARTS OF THE WORLD

• The first printed book in Devanagari was the 'Pravara' by the 'Pravara Press' in 1817.

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DEGREE SYSTEM

The 'Pravara Press' in 1817, established the first printing press in India.

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Illustration of a person in a white robe, likely a deity or a historical figure.

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TYPOGRAPHIC EVOLUTION

CHARLES MILLER, THE FATHER OF DEVANAGARI TYPOGRAPHY

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WILLIAM CAREY

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