TYPOGRAPHY BEYOND BORDERS

ARABIC ARMENIAN BURMESE CHINESE CYRILLIC DEVANAGARI GE'EZ GEORGIAN GREEK HEBREW JAPANESE KHMER KOREAN LAO MONGOLIAN PERSIAN THAI

DESIGN WITH MULTISCRIPTUAL TYPOGRAPHIC ELEMENTS

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to all the people who write in

ARABIC

ARMENIAN

BURMESE

CHINESE

CYRILLIC

DEVANAGARI

GE'EZ

GEORGIAN

GREEK

HEBREW

JAPANESE

KHMER

KOREAN

LAO

MONGOLIAN

PERSIAN

THAI

table of contents

	155 italic and handwriting 10	139 serif 09	121 alternate glyphs and stretching 08	109 kerning and ligature 07	097 punctuation marks and numerals 06
ARABIC	♫	♫	♫	♫	♫
ARMENIAN	♫	♫	♫	♫	♫
BURMESE		♫		♫	♫
CHINESE	♫	♫	♫		♫
CYRILLIC	♫	♫	♫	♫	♫
DEVANAGARI	♫	♫		♫	♫
GE’EZ	♫	♫		♫	
GEORGIAN		♫	♫	♫	
GREEK	♫	♫	♫	♫	♫
HEBREW	♫	♫	♫		♫
JAPANESE	♫	♫	♫		♫
KHMER	♫	♫		♫	♫
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INTRODUCTION

The Latin alphabet has remained the same for eight centuries, while other writing systems, such as Chinese, have undergone periods of significant—even radical—changes as recently as the twentieth century. These changes have ranged from eliminating letters and changing the reading direction to redesigning characters and even inventing entirely new alphabets. This book addresses how historical, cultural, and political shifts have altered letterforms and native speakers' relationship with type.

Before computer, handwritten letters played a prominent role in communication. People had more physical relationships with writing and access to the tools and practices of literacy was deeply tied to social status and gender. The ubiquity of handwriting—by chisel, quill, or brush—in early written communication resulted in an abundance of manuscript styles. A literate person with the physical writing tools could create "fonts" merely by writing in their own style.

The first books were produced by hand-copying content onto a surface—be it animal skin, bamboo, silk. European moveable types in the Early Renaissance era sped up printing and increased distribution, revolutionizing writing. Gutenberg's moveable type famously changed the fifteenth-century Western world in this way, but Chinese printers were already working to accommodate the thousands of characters of their own extensive language eight hundred years before Gutenberg, and the technologies they deployed were quite different from those of their European counterparts. Due to the large number of characters in Chinese writing, inserting type into a frame was not significantly faster than carving a block of passages for one page. Printers occasionally inserted the wrong type, because a character frequently shared the same components as others, and the intricate details in each character could easily get distorted when pressed. Despite the attempts to cast types in various materials, moveable types had never dominated printing in China until the twentieth century.These printing histories are just as intriguing as those of contemporary font design; equally fascinating, is how political, religious, and economic factors have shaped publications and technologies.

There is a clear distinction between a script and a language. Arabic is a language, but Arabic script is also used in Persian, Urdu, and other languages. Persian and Urdu use a few more letters than Arabic does, but most are the same. Likewise, Chinese script is used in many languages, both Chinese (e.g., Mandarin, Cantonese, Taishanese, Hakka, Hokkien) and others, such as Japanese (**kanji**) and Korean (**hanja**). Because this book concentrates on the diversity of scripts and similarities among languages using the same scripts, I refer, unless otherwise specified, to **scripts** rather than **languages**. For example, the word **Arabic** in this book denotes the Arabic script used in writing Arabic-, Persian-, and Urdu-language texts; **Chinese**, the script used for various languages across mainland China, Taiwan, Hong Kong, Japan, and Korea; and **Latin**, the script used for English, Spanish, German, and many other languages.

To research more widely accessible non-Latin scripts like Arabic, I studied language instruction books. By experimenting with writing in different scripts and typing in different fonts, I analyzed how letterforms transformed from one style to another. To complete such in-depth typographical and calligraphical research, I also purchased research-based books for specific writing systems. Scripts in some countries, such as Japan and South Korea, use native descriptive terminologies, but for comparative analysis, this book avoids highly localized words and instead emphasizes the evolution of type cross-culturally.

AMHARIC
ARABIC
ARMENIAN
BAYBAYIN
BERBER
BURMESE
GEORGIAN
GREEK
HEBREW
HINDI
KOREAN
MONGOLIAN
PERSIAN
RUSSIAN
TAMIL
THAI

A **typeface** is a family of fonts that may include regular, bold, and italic forms, which is a specific style within that family. For example, Helvetica is a typeface, but Helvetica Italic is a **font** that explicitly refers to the italic style of the Helvetica typeface. This book uses both terms because complicated scripts can sometimes have only one typeface due to the large number of characters. Chinese, for instance, has more than four thousand characters, while Japanese has about eighty hiragana characters, eighty katakana characters, and more than two thousand kanji characters; Korean uses more than two thousand characters.

As a violin maker creates the instruments that a violinist plays, type designers create typefaces that graphic designers use in their work. Type designers invest time designing individual letters, punctuation, numerals, and ligatures. Other essential duties include embedding kerning pairs (i.e., the adjustment of spacing between two glyphs) and finetuning anchor points in each glyph. The author does not identify as a type designer but as a type researcher who analyzes the similarities and differences among typographic elements in various scripts. Therefore, this book is intended to help graphic designers appreciate the labor and understand current technological limitations involved in designing and displaying non-Latin types so that they can use them correctly and creatively.

Most typography books focus on the anatomy of the Latin alphabet, with additional quick overviews of other popular scripts like Japanese. Books dedicated to other scripts tend to target native users, and the creative treatments of type are complex for readers who cannot read the scripts to digest. This book proposes a new method of comparatively exploring typographic elements across different scripts.

Whereas standard typography books move from the micro to the macro—beginning with letterform details (e.g., serifs) and moving on to each line of text until ultimately reaching the paragraph—this book moves from the macro to the micro. Much like how we get to know a person—first remembering how they make us feel, then how they dress, and, after some time, their peculiarities and preferences—this book first introduces specific writing systems, then dives into the details of each letter.

In some countries, writing scripts is like drawing pictures, though most other parts of the world have developed alphabets for writing. Besides the most common left-to-right orientation of text, there are also other possibilities for text direction, some of which are compromised in digital devices. Inside each line of text, some scripts have tall heads and long feet that require more line space to be displayed correctly. The many methods of setting character space depend on the construction of the letters. Letter shape also determines the spacing between individual letters. Combining letters and constructing new glyphs

is essential to type design, even though ligatures are not the priority in designing Latin type. Stretching is atypical in Latin but quite common in Arabic. Likewise, the style for displaying emphasis is not always italic as in Latin but can include letter spacing as in Greek.

Throughout the book are interactive exercises. I invite readers to experiment firsthand with non-Latin writing to facilitate a deeper relationship to the concepts covered and to enable the reader to imagine new design possibilities and goals for cross-cultural collaboration. In learning about these diverse writing systems, readers should develop their own take on good, non-Latin type design.

01 | ACCESSIBILITY

In US higher education and in tandem with diversity, equity, and inclusion (DEI) efforts, there have been many discussions, panels, and trainings related to accessibility. Such work has expanded the understanding of accessibility from the wheelchair icon to other forms of support in classrooms, such as screen-readable course materials and descriptive alternative text. This chapter analyzes how type design assists various communities in different languages. The unique features and histories embedded in some scripts affect their level of accessibility in type. Therefore, it is possible to discover more creative problem-solving moments in our world through the lens of script.

EXAGGERATED FORMS

Different writing systems train their readers' brains to identify distinct parts of letterforms they need to pay attention to as well as those they need to ignore.

Which one of the sentences below is easier to read?

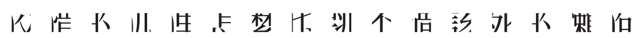
1 a lazy but quick dog jumps over the brown fox

2 a quick brown dog jumps over the lazy foxes

Adobe Garamond Pro

For English readers, Number 2 is generally more legible. In the Latin alphabet, lowercase letters have more diverse forms on their top halves. So, when readers scan a page, they focus more on the top of each sentence. This is not the case in every language.

Consider the two lines below, written in Traditional Chinese script. Which one is more legible? If you do not read Chinese, venture a guess.

3


4


Source Han Serif SC

The outer contours are more distinct than the details inside each character, making the characters in Number 4 easier to interpret. In Numbers 1 through 4, readers of different scripts, such as Latin and Chinese, are trained to focus on different parts of letters. This indicates that linguistic accessibility is distinct for each writing system's community of users.

Atkinson Hyperlegible is an example of a Latin typeface designed for accessibility. Commissioned by the Braille Institute of America and designed by Applied Design Works (Elliott Scott, Megan Eiswerth, Linus Boman, and Theodore Petrosky) in 2019, the typeface aimed to be friendly to people with various vision impairments, including macular degeneration, retinitis pigmentosa, cataracts, and diabetic retinopathy. After extensive research, the designers learned that different parts of a patient's vision could be reduced, depending on their specific eye disease. As a result, the exaggeration of the forms for each letter became necessary so that there would be no confusion, for example, between the letter **B** and the number **8**, **O** and **0**, or **I** and **1**.

Atkinson Hyperlegible

B 8 O 0 l 1

Equipped badass

Ijuice loaded in 1 Macbook, 0 spillage

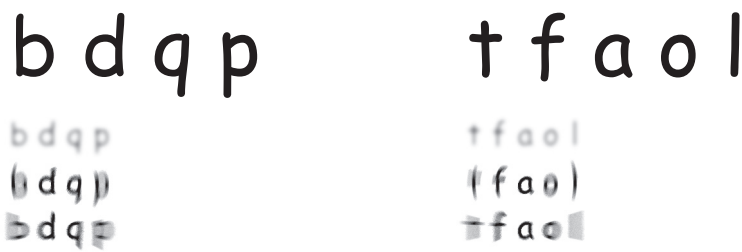
In the **b**, **d**, **q**, **p** group, each stem ends differently. Likewise in the **l**, **j**, **I**, **I** group, the lowercase **l** has a serif so that it cannot be confused with an uppercase **I**. The lowercase **i** also has a serif to distinguish it from lowercase **j**, which could otherwise be perceived as **i** by readers who have difficulty seeing text below the baseline.

Atkinson Hyperlegible

Comic Sans was not designed to be widely used as a body type (i.e., the text forming the main content as opposed to the titles). Vincent Connaire instead created Comic Sans to replace Times New Roman for the Microsoft Bob software, which was designed to make computers charming to learn.[1] In fact, Connaire did not even want to call it a typeface.[2] After Microsoft Bob was abandoned, Comic Sans was used internally for party invitations and externally in Microsoft MovieMaker.[3] Wider usage began when it was added as a bonus product with Windows 95, because there were no other typefaces like it.[4]

By the early 2000s, it had been so frequently in schools and, at times, even on funeral invitations that hatred toward Comic Sans exploded. Now, Comic Sans is used primarily as a joke or, occasionally, with attitude (i.e., “I made this bad design intentionally, but are you smart enough to get it?”). Another side of the story, though, is that it is one of the most dyslexia-friendly typefaces.[5]

Comic Sans



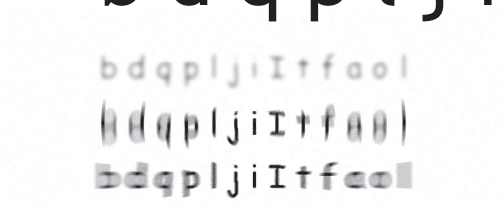
1. Simon Garfield, ***Comic Sans: The Biography of a Typeface*** (W. W. Norton & Co, 2024), 36–39.
2. Garfield, ***Comic Sans***, 42.
3. Garfield, ***Comic Sans***, 42.
4. Garfield, ***Comic Sans***, 44.
5. Simon Garfield, ***Just My Type: A Book About Fonts*** (Avery, 2012), 19.

Like Atkinson Hyperlegible, Comic Sans's lowercase **b** is not a direct reflection of lowercase **d**; neither is lowercase **p** of lowercase **q**. The stem of the lowercase **t** is shortened, further distinguishing it from lowercase **f**. The circle in the lowercase **a** also differs from that in the lowercase **o**. This approach to design is like having multiple keys to a locked room. Even if you lose one key, you still have another that allows entry; even if one part of vision or image processing does not work, other parts will still be able to recognize text typed in Comic Sans.

Connare also designed MS Trebuchet, another dyslexia-friendly typeface. Though lacking the personality and handwritten qualities of Comic Sans, MS Trebuchet retains the distinct features of each letter, as shown below with the lowercase letter groups **b**, **d**, **p**, **q** and **l**, **j**, **i**, **l**.

Trebuchet

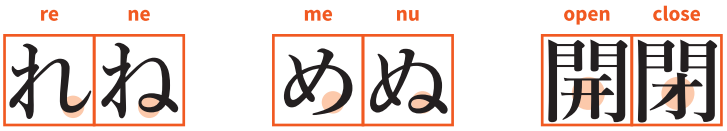
b d q p l j i l t f a o l



In non-Latin writing systems, dyslexia-friendly fonts follow the same design philosophy. In his memoir **My Life with DX Dyslexia**, architect Takanao Todo writes about his experiences being dyslexic in Japan. Some of Takanao's confusion when reading Japanese resulted from the direction of the characters' final strokes.[6] **Re** and **ne**, for example, are only different on the bottom right. The same goes for the pair of **me** and **mu**. The characters for **open** and **close** share the same contour, with only one stroke in the center that distinguishes between the two.

6. Takano Todo, ***My Life with DX Dyslexia*** (Shufunotomosha, 2011), 29.

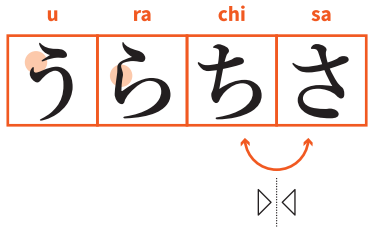
Yu Mincho

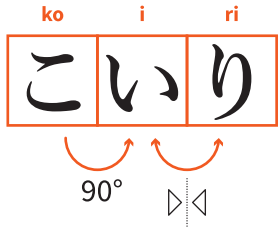


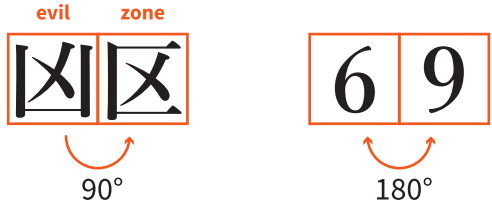
U and **ra** are also very similar. Like the Latin **b**, **d**, **p**, and **q**, the Japanese **chi** and **sa** appear as reflections of one another.[7] Additional confusing pairs are show below.

7. Todo, ***DX Dyslexia***, 28.

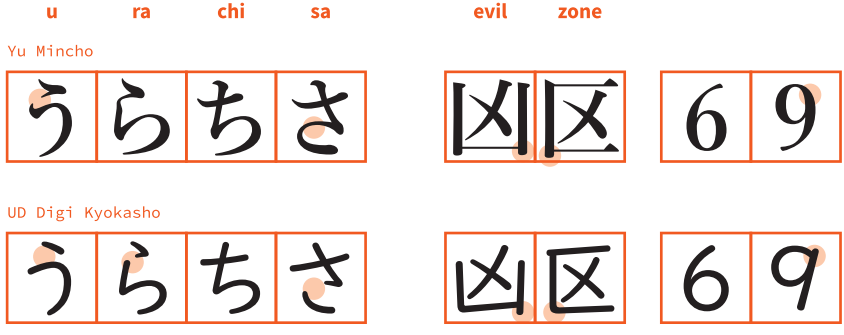
Yu Mincho







Traditionally, Japanese books are printed in typefaces like Mincho, the Japanese equivalent of Times New Roman. To resolve accessibility issues, schoolbooks have begun adopting Japanese Universal Design (UD) font families. UD fonts apply similar techniques of form exaggeration while maintaining a handwritten quality.



In today's global design world, it's more important than ever for designers to create work that connects with diverse audiences. This book is for designers and students whose native languages don't use the Latin alphabet, as well as professionals creating designs for people from non-Latin backgrounds. It's also a valuable resource for design teachers working with international students and aiming to create a more inclusive classroom.

This book fills an important gap in design education: the focus on Latin-script design resources. While there are books from designers in Asia or the Arabic-speaking world, they're mostly aimed at native speakers. Here, we take a fresh approach by comparing typography from a wide range of scripts, encouraging designers to move beyond Western styles and explore a richer, multicultural design approach.

Readers will walk away with a deeper understanding of global design, giving them the tools to create work that speaks to underrepresented audiences. Design students will feel more confident drawing inspiration from their own cultures, while educators will find new ways to teach with greater empathy. Whether you're an experienced designer or just starting out, this book offers practical tips to expand your design horizons and embrace non-Latin scripts.

about the author:
Sherry Muyuan He is an assistant professor of design in New York. Passionate about languages, Sherry enjoys reading books in different languages and listening to conversations in various languages on the subway. Outside of teaching, she designs board games that help people learn new scripts.

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