



## Experimental Typography

<http://www.tyoday.in>

Creating new agreed system of guidelines to achieve visual excellence in design quality of *bi-script typographic composition* including juxtaposition of Latin and Arabic scripts

Sahar, Khajeh, University of Hertfordshire, United Kingdom, [info@saharkhajeh.com](mailto:info@saharkhajeh.com)

**Abstract:** Bi-script typefaces designed in styles that are aesthetically very different, and arguably incompatible. During this research, the term '*bi-script typographic composition*' has been coined to describe the coexistence of two distinct scripts like Latin and Arabic in which letterforms share very different visual forms and characteristics. The methodology was based on, first, the analysis of the characteristics of Arabic scripts, especially the ones that are significant to consider in juxtaposition to Latin Script. Secondly, provide standard terminologies to communicate about this context with a clear language. Furthermore, analyse the contexts in which Arabic and Latin scripts are juxtaposed based on primary research, and finally, conduct both primary and secondary research to analysis both solo script Arabic typefaces and bi-script typefaces including Arabic and Latin scripts; in order to recognize the reasons for the lack of visual excellence in the design quality of juxtaposed Arabic and Latin scripts

**Key words:** *Bi-script typeface, Solo-script typeface, bilingual typography, bi-script typography, Arabic Script, Latin Script, Arabic and Latin scripts, Arabic typeface, Visual Excellence, Bi-script typographic composition, Readability, Legibility, Cultural background, Simplification of Arabic Script*

## **Introduction**

As the result of analysis, there are four criteria, which play important role in achieving visual excellence. First, approach the visual map between the anatomy of Latin and Arabic letterforms, which requires a better understanding about the similarities and differences of the anatomy of Arabic and Latin letterforms. Secondly, considering the importance of legibility of letterforms and readability of typefaces, especially within a long text; which requires recognition of the optical disparities in typography system of Latin and Arabic scripts. Furthermore and most importantly, for using a special typeface it is vital to consider the cultural background of the readers and the script, as this will determine the extent to which a script may be simplified. And finally the cultural background of the designer plays a significant role in creating a new set of typefaces in specific scripts for specific audiences.

Unfortunately, sometimes simplification of Arabic script with the focus on mapping the visual form of Latin and Arabic letterforms causes ignorance of corrections for optical disparities of the letterforms. This matter is also true for the reverse situation; focus on readability of Arabic script within bi-script typefaces results in a lack of visual correlation between the shape of Arabic and Latin letterforms within bi-script typefaces. This lack of considering the importance of readability and achieving a visual map between Latin and Arabic letterforms especially in available bi- script typefaces including Latin and Arabic scripts within the most useful devices like MacOS, Mojave, proves the necessity of creating a new agreed system of guidelines for juxtaposition of Latin and Arabic scripts. It benefits two groups: type designers - on how to create new bi-script typefaces which include Latin and Arabic scripts, and typographers, designers, and typesetters - on how to decide to select compatible solo-script typefaces among the available typefaces, to achieve a high-quality design layout in bi-script typographic composition.

## **Section 1. Analyze of typographic cause and effects *in bi-script typographic composition* including Latin and Arabic scripts**

### **1.1. Analys of Arabic script characteristics within bi-script context compare to Latin script**

The focus is on languages such as Arabic, where the written form is by nature a cursive format, and not the same as English cursive, joined-up writing. According to Armstrong

(2014: 3610), 'within the English language, cursive writing is any style of penmanship in which the symbols of the language are written in a conjoined and/or flowing manner, generally for the purpose of making writing faster.' It should be considered that typography does not often resemble handwriting, except in the case of script typefaces, which are used as decorative typefaces rather than jobbing typefaces.

Arabic comprises 28 different alphabets, from which 22 letterforms have four different shapes based on their position at the word - Initial, medial, final and isolated form-, while six letterforms including ز، ر، ذ، د، ا، and و, just have two different shapes, including isolated and final forms. Within Arabic script, isolated forms never connect to previous or former letterform, also the final form, only connects to the previous letterform, which is itself disconnected to the former letter. Here we should consider one attribute of English cursive script which is similar to Arabic script that most of the letterforms - including the letterforms that connect to previous or former letterforms within a word - start and end at the baseline, which makes it easier to join them up. (Orr-Stav, 2015)



Figure 1. Arabic script (Naturally cursive) compare to Latin cursive

Arabic script loses its readability if letterforms are disconnected. Even if each Arabic letterform has multiple shapes, if the wrong shape of a letterform is used for the wrong position in a word, the letterforms remains disconnected and it loses its readability. Therefore despite the multitude letterform shapes, Arabic script could only be written in one style. While Latin script could be written either in UPPERCASE or lowercase. However, research on legibility shows that uppercase text is difficult to read because there is limited variation in letter sizes.

Arabic script consists of multiple different shapes of glyphs based on the position of letterforms within a word to join the letterforms together. Glyphs stretch and this feature plays an important role in filling the gaps between the Arabic words in a line when within a paragraph all the lines are aligned from both sides (justified). However, applying the justified from both sides feature on a Latin script paragraph, results in more prominent uneven and blank spaces (river) between the words.

## 1.2. Unfavorable typographic affects caused by contradictions between Arabic and Latin scripts in *bi-script typographic composition* including Latin and Arabic scripts

There are few problems with juxtaposition of Arabic and Latin scripts. The contradiction between two features of Latin and Arabic scripts causes the problems. First of all, the direction of writing and reading in Latin Script (left to right) is opposite to Arabic script (right to left). Therefore, in juxtaposition of Latin and Arabic letterforms and numbers, it is important to present sets of numbers in each script separately, to ensure the numbers sit at the correct position for each script. For example at Figure 2, left side image, Arab script readers expect to see the gate numbers at the left side of the word 'Gates'، 'البوابات' rather than the right side. It means the sequence of information is incorrect for Arabic script reader. But the right-side image presents a correct sequence of text and numbers.



Figure 2. Airport signs. Coexistence of text and Numbers, in bi-script typographic composition in Arabic and Latin scripts

Secondly, presenting the same information in both Latin and Arabic scripts results in unequal amount of texts in each script. There are two different situations. The first situation includes phonetic presentation of a word, which results in shorter length of words in Arabic Script. Arabic script is Abjad, it means, each symbol of the Arabic Alphabet stands for a consonant. It leaves the readers to supply appropriate vowels, where it is required. This phenomenon especially in logo design results in stretching the Arabic letterforms in order to have the same linear length with its Latin counterpart. (Figure 3)

But at the second situation especially in long text, Arabic script has longer amount of text to present the same information. Significantly, because Arabic letterforms consist variable length and width based on their position in a word. Also, they are fluid. There are inconsistent gaps between the disconnected letterforms with open counters that draw below baseline, compared to the gap between disconnected letterforms that draw above the baseline. (Figure 1) In addition, in some cases translation of a Latin word may result in more than one word in Arabic languages.



Figure 3. Attayeb and Anjoman. Bi-script logo design

Latin letterforms are geometric and static, and all the letterforms sit on one baseline. Therefore, all the lowercase or uppercase letterforms within one typeface have the same x-height and body-size. But Arabic script is fluid; the letterforms sit on multiple variable matrixes. Therefore, the letterforms within a typeface have variable x-height and body-size. This phenomenon, especially in juxtaposition of UPPERCASE Latin letterforms with Arabic letterforms, makes the Latin script look more prominent and larger compared to the Arabic script counterpart. (Figure 4)



Figure 4. Translated bi-script typographic composition at an airport sign

In the juxtaposition of Arabic and Latin blocks of text, it is important to keep a consistent type layout and weight to present the information with equal effect in both scripts. For example, if one sentence is bold or italic in Latin script, the same text in Arabic script, should present in bold or italic. The problem is that, within a specific typeface (bi-script or solo-script), there are multiple bold and Italic styles for Latin script while Arabic typefaces mostly are just available in Regular weight. According to Samara (2004: 24), 'changing in weight and posture are extremely effective in helping to create a sense of hierarchy among text elements in a format.' This lack of variety of weights within Arabic typefaces, gives designers no choice but to select a different typeface with a larger x-height and a thicker stroke in substitute of bold weight. As Haralambous (1998: 139) indicates, 'The traditional Arabic typography is a 'closed world': the variety of Western typographical styles (bold, italic, etc.) can hardly be applied or analogies found.'

### 1.3. Simplification of Arabic script as a solution for mapping Latin and Arabic letterforms achieved an unsuccessful approach

Modern designers attempt to apply a Latin matrix system to Arabic, in order to simplify Arabic script and make it visually more geometric and closer to the shape of Latin letterforms. It is, however; an unsuccessful approach for multiple reasons; it reduces the legibility and makes it hard for the recognition of Arabic letterforms, especially within long text.

First of all, Arabic letterforms are distinguished by the differences between the number of teeth and dots within each letterform (ظ ط ل ا ب ت پ ب، ز ر، ذ د، خ ح ج چ، ش س). From the analysis of bi-script typefaces during the course of this research, I believe, despite the recent approach to align all dots to sit on one baseline, Arabic script must have multiple variable matrixes for position of dots above baseline to ease recognition of letterforms. It is the same for the dots that sit below the baseline.

Secondly, just 5 out of 28 Latin letterforms draw below baseline in which, apart from 'p' and 'q' that share the same visual shape of stem for their descender part, the rest of the letterforms have a totally different visual form of descenders, 'g', 'j' and 'y'. So, sitting all on one ascender line, would not interfere with intuitive recognition of each letterform. However, more than half of the final position of Arabic letterforms, (18/28) are drawn below baseline. ش، س، ی، و، ن، م، ل، ق، غ، ع، ض، ص، ش، س، ز، ر، خ، ح، چ، ج. The letterforms، س، ش، ص، ل، ق، ض، ص share the same shape of bowl. The، ج، چ، ح، خ share the same visual form. ر، ز، and و، also have similar forms while، ع، غ are visually categorized to a different group, and، م، ی each has a different style. In this case, there are 5 different groups of forms with distinguished visually that draw below the baseline. Aligning them all based on one descender line is therefore a serious obstacle on intuitive recognition of letterforms within a word. On the other hand, it is not only the strokes that draw below the baseline, in some cases like، ج، چ، the dots are sitting below the baseline. Assigning one descender line for all letters does not therefore provide enough space for the dots of these two letterforms.

## Section 2. The problem of clarification of terms (Language)

To put this matter in context; for a comprehensive mutual understanding of typographic notions and to communicate unambiguously with clear language, a standard set of vocabularies is required. The problem of clarification of terms is an international problem, because most designers with current nomenclatures will not understand the typography contexts fully. Most of the current terminologies available within discussion are misleading because in the field of type design and typography, there are some words whose meaning has changed or evolved through use.

### 2.1. Bilingual typography, bi-script typographic composition

The challenge is how to address the coexistence of two distinct scripts like Latin and Arabic whose letterforms share very different visual forms and characteristics. The term ‘Bilingual typography’ is common among scholars to express this notion; however, it is defective to use this term in this research for four reasons. Firstly, based on the literal meaning of bilingualism ‘bilingual typography’ refers to the concurrent presence of two different languages (Byers-Heinlein and Lew-Williams, 2013). Given the similarity or differentiation between visual forms of the scripts used for two languages, ‘bilingual typography’ can be divided into two different categories: solo-script typography and bi-script typography. Secondly, the last decade saw discussions about the dialogic characteristic as a central notion to bilingualism, which means the simple contiguity of two different languages in written format in not called bilingual typography (Ashrafi, 2015: 151). Furthermore, bilingualism refers to the coexistence of two languages, without any boundaries on when and how two languages are being consumed. Therefore, the presence of two languages in kinetic typography for example in an animation, where the second script might appear directly following the primary script is also called ‘Bilingual typography’. Optical disparities of letterforms are more visible when the two scripts appear simultaneously, and both stay visible permanently without any movement.

Finally, to consider both typography (practice of expert designers) and typesetting (practice of general users), I use the term *typographic composition* rather than typography.

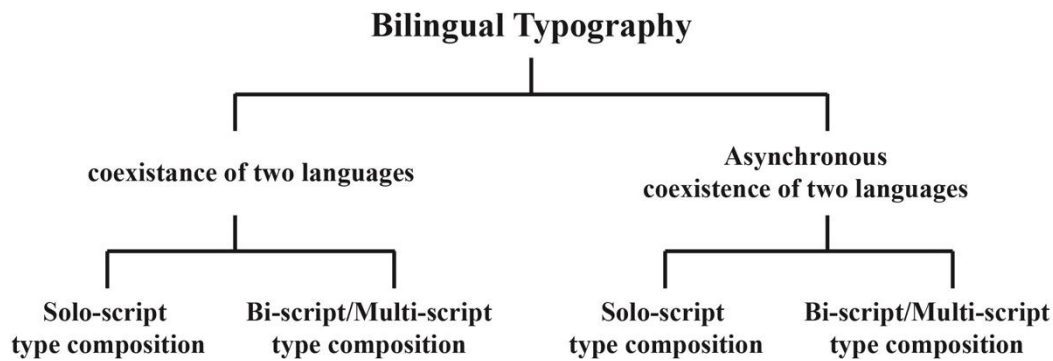


Diagram 1. Bilingual typography and its four branches

Per the above discussions, based on the design layout and the platform with consideration of time and space, the term ‘Bilingual typography’ is a misleading term to address a coexistence of two distinct sets of scripts, rather I refer to this notion as *juxtaposed bi-script typographic composition*.

### 2.1. ~~Type family~~, bi-script typefaces

In many cases, the term ‘family type’ is used to address typefaces available in more than one script. For example, as Gary (2015: 81) mentioned, ‘On one level we have seen the concept of a type family evolve. ... The most interesting developments have been in extending the concept of the ‘type family’ across scripts.’ However, per a discussion by Samara (2004:19), type family has nothing to do with variation of scripts available with a typeface, but it refers to variable widths and thicknesses available for a set of letterforms within one typeface like, regular, italic and bold weights. Due to this contradiction in definition of type family, in this article, the term *bi-script typefaces* is used to address typefaces available in two or more scripts.

## Section 3. Analysis and categorisation of the context

As the result of context analysis during this research, I divide the contexts in which the Latin and Arabic scripts sit together simultaneously into various categories based on amount of text, the translation and the type layout. Each category introduces different sets of challenges for designers that must be resolved; unfortunately it is out of the scope of this document to explain this in deep detail. The categories based on my analyses include:



**Based on translation:**

1. *Phonetic bi-script typographic composition: e.g the name of locations is phonetically displayed in two different languages.*
2. *Word translation bi-script composition: includes messages that secondary script presents the equivalent translated word of the primary script.*

**Based on amount of text:**

1. *Title (caption) message presentation*
2. *Sentence message presentation*

**Based on layout of text:**

1. *Two independent solo-script blocks of text (Figure 5)*
2. *One integrated bi-script block of text (Figure 6)*
3. *Hybrid texts (Figure 7)*



Figure 5. Bi-script typographic composition (two independent solo-script blocks of texts)  
Left: lable, right: Anjoman rice package

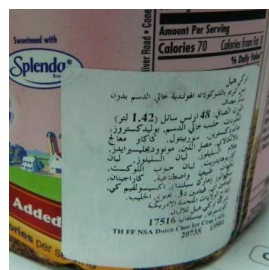


Figure 6. Bi-script typographic composition (one incorporated bi-script block of text) Food label



Figure 7. Bi-script typographic composition (hybrid text)(Dubai, Car plate, mock-up design)

## Section 4. Analysis of typefaces

Analysis of bi-script typefaces proves there is a lack of *Visual excellence* in design quality of *bi-script typefaces*. In this context, the term *Visual excellence* means although the visual map between the shape and anatomy of Latin and Arabic letterforms should be considered, it should neither ignore the importance of legibility and readability of the scripts - especially in a long block of texts -, nor the cultural background of the readers.

Research revealed that despite free availability of typefaces online (which is usually provided by freelance type designers), each device; like macOS and Microsoft word, when a new version of their program is released, it encompasses a list of typefaces included with that program. In this research, I have chosen macOS, Mojave 10.14, released on 28th September 2018, as a device sample since it is one of the most recent and versatile devices in the world, available to both general users and graphic/type designers. The reason for focusing on typefaces available on macOS rather than Online typefaces is that, these typefaces are provided by type foundries which, include all the Standard Unicode characteristics that is needed for the written format of a language. In this case; if the typeface is bi-script or multi-script, it contains all the standard characters for all scripts. Online typefaces, however, might only be available in a range of characters. (For example, just include the UPPERCASE style). Based on primary research and carried out survey of examples during the course of this research, it reveals neither online *bi-script typefaces*, nor the available typefaces within the chosen macOS considered all the factors - visual map, readability and cultural background of readers - to achieve *Visual excellence* in design of *bi-script typefaces*. Although, the online *bi-script typefaces* have more visual harmony between the shape of Latin and Arabic letterforms, they appear to pay no attention to the importance of readability and correction of visual disparities of letterforms. In this case, the available online typefaces are usually used for *title (caption) message presentation*, because within this context only a few words, in a large font size sit together, therefore, the problems of legibility would not be evident.

The bi-script typefaces available with devices like macOS are professional in terms of readability, proper for *Sentence message presentation*; but they are more appropriate for *solo-script typographic composition* rather than *bi-script typographic composition*, because there is a lack of design quality in the visual map between the shape of Latin and Arabic letterforms. Consequently, this disparity in the visual map between the Latin and Arabic letterforms in *bi-script typefaces* leaves the designers with no choice but to use

two distinct *solo-script typefaces* one available in Latin and the other in Arabic script to layout a bi-script typographic composition.

#### **4.1. Analysis of *bi-script typefaces* available with macOS, Mojave and recognition of important criteria based on primary research**

The selection of a typeface for a type composition is based on the design theme. Unfortunately, the available *bi-script typefaces* share classic, official and old-fashioned styles. There is a lack of variety in the style of *bi-script typefaces* including Latin and Arabic scripts available within macOS. In addition, despite the wide range of Arabic script users, just 9 typefaces out of 359 typefaces included with macOS Mojave are *bi-script typefaces* that support both Latin and Arabic scripts. These include Arial Version 5.06, Microsoft Sans Serif version 5.00.1x, STSong 14.0d0e1, Songti SC, Songti TC, Tahoma Version 5.01.2x, Times New Roman Version 5.05, Myriad Arabic 13.0d1e1 and Ultrafidian 13.0d2e2.

##### **4.1.1. Arial and Times New Roman**

Arial and Times New Roman are considered to be of very different kinds, respectively, one is san-serif and modern type while the other one is serif and a traditional typeface. But, surprisingly, during this research it was discovered that both typefaces despite different style type and connotations, share the same Arabic typeface within their typeface package. It seems they added a distinct Arabic typeface to become a bi-script typeface, but paid no attention to the importance of sharing the same connotation and achieving a visual map between the shape of Arabic and Latin letterforms within a bi-script package.

## **Conclusions**

Four criteria play important role to achieve visual excellence, including, first, achieve visual map between the anatomy of Latin and Arabic letterforms, which requires a better understanding about the similarities and differences between the anatomy of Arabic and Latin letterforms. Secondly, considering the importance of legibility of letterforms and readability of typefaces, especially within Sentence message presentation; which requires recognition of the optical disparities in typography system of Arabic and Latin script. Unfortunately, there is a lack of sufficient research to talk about the optical disparities within Arabic letterforms. Therefore, a serious attempt is required to investigate this issue in deep details.

Furthermore and most importantly, for using a special typeface, it is vital to consider the cultural background of the readers and the script. This issue affects on building a stronger bridge between the reader and the text, and more importantly, the cultural background of the script determines to what extent one script could be simplified. As the discussions at this document present, the current simplification of Arabic script has an unsuccessful approach, since in most of the cases, the Latin typography matrix applied to Arabic script, without considering the cultural background of Arabic script. Finally to create a new typeface the cultural background of the designer also plays a significant role.

## References

- ARMSTRONG, K. (2014). 'Cursive Handwriting in an Internet Age.' *World Academy of Science, Engineering and Technology International Journal of Humanities and Social Sciences* [Online] 8 (11) pp. 3609-3615. Available from: <http://waset.org/publications/9999776>
- ASHRAFI, S. (2015). Bilingual typography considered from the standpoint of Bakhtin's dialogism. *Design Philosophy Papers*, [online] 13(2), pp.137-153. Available from: [http://www.thestudioattheedgeoftheworld.com/uploads/4/7/4/0/47403357/4ashrafi-bilingual\\_typography.pdf](http://www.thestudioattheedgeoftheworld.com/uploads/4/7/4/0/47403357/4ashrafi-bilingual_typography.pdf) [Accessed: 8 May 2018]
- BYERS-HEINLEIN, K. AND LEW-WILLIAMS, C. (2013). Bilingualism in the Early Years: What the Science Says. *Learn Landsc*, [online] 7(1), pp.95-112. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6168212/pdf/nihms940156.pdf> [Accessed: 9 February 2019]
- GARY, Z. (2015). Beyond Latin, The design panel. *Eye Magazine*, 90 (23) pp. 80- 94
- HARALAMBOUS Y. (1998) 'Simplification of the Arabic script: Three different approaches and their implementations. *Electronic Publishing, Artistic Imaging, and Digital Typography*. [Online] 1375 pp.138-156. Available from: <https://link.springer.com/chapter/10.1007%2FBFb0053268#citeas> [Accessed 5th May 2018]
- ORR-STAV, J. (2015). *Are there equivalents to English cursive in other languages, in particular those with different alphabets or systems of writing?* [online] October 7th 2015. Available from: <https://www.quora.com/Are-there-equivalents-to-English-cursive-in-other-languages-in-particular-those-with-different-alphabets-or-systems-of-writing>. [Accessed: 12th December 2018]
- SAMARA, T. (2004). *Typography workbook: a real-world guide to using type in graphic design*. United State of America: Lockport Publishers, Inc.