THOMAS MILO

Arabic script and typography
A BRIEF HISTORICAL OVERVIEW

ARABIC WRITING is alphabetical; the direction of writing is from right to left; within a word, most letters form connected groups. One expects an alphabet to consist of a few dozen letters representing one unique sound each. The Arabic alphabet evolved somewhat away from this ideal: although most letters correspond to a sound, a few letters are ambivalent between two or more sounds. Some letters don’t represent sound at all: they have only a grammatical function.

For modern office use there are 28 basic letters, eight of them only differentiated from other letters by diacritics, and six optional letters for representing vowels. Older spellings made less use of diacritics for differentiating; on the other hand, to facilitate Quran recitation, additional vowel signs occur, along with elaborate calligraphy. To acknowledge slight variations of the received text, some Quran editions have additional diacritics, discreetly adding or eliminating consonant letters.

As the Arabic script evolved into a connected script, it developed an elaborate system of assimilations and dissimilations between adjacent letters. Outside a small group of connoisseurs and calligraphers who study the principles established by the Ottoman letter artists, surprisingly little is understood of the efficiency and subtlety of this system, and modern industrial type designs follow the approach found in elementary Western teaching materials. There, beginners in Arabic script are given a maximally simplified scheme. While simplification is totally sound from a pedagogical perspective, it provides too narrow a basis for the development of professional typography.

DEVELOPMENT OF THE ARABIC SCRIPT

The Arabic script stems from the same source as the Latin, Greek, and Hebrew writing systems: Phoenician (figure 1). The underlying proto-alphabet had some two dozen characters; there were no vowels. The direct forebear of the Arabic alphabet is a late Aramaic alphabet from which it inherits the tendency to merge letter groups into larger units marked by a final swash instead of a space. As the script evolved, some aspects inherited from the Aramaic alphabet became simplified, and new complexities and subtleties emerged.

This evolution can be classified in four developments:

1. **Shape erosion: shared graphemes.** A number of early Arabic alphabetic letters lost their original distinctiveness; as a result, only fourteen basic shapes remained to represent thirty consonants. Arabic writing of this type is reminiscent of stenography. Many shapes represented more than one letter and could only be understood in context. Given the oral origin of Arabic literature – reading was based on familiarity with the text – this reduced or skeleton script was in fact an economical way to write.

![Figure 1. Simplified diagram showing evolution of European and Arabic scripts from a common ancestor, Phoenician.](image)

![Figure 2a. A plain text encoding for Arabic, such as the Unicode encoding shown here, requires only a small set of codepoints.](image)

![Figure 2b. Each character code is rendered by up to four individual presentation forms. This is the minimum shaping required to produce recognisable Arabic text.](image)
of writing. Drawn in dark brown or black ink with the broad side of a sharpened reed, it constitutes the smooth framework of a manuscript.

2. Distinctive connections: multilevel characteristics. Unlike its Syriac-Aramaic precursor, Arabic writing early on manifested two types of letter connections: horizontal (right to left) and vertical (top to bottom). This characteristic Arabic tendency emerged very early: with the partial exception of ḥijāzi, all styles of Arabic writing, from the austere hieratic writing (e.g. kufic) to the more capricious cursive styles (e.g. naskh), share this feature.

Figure 3a: Horizontal and vertical connection of two Arabic letters.

Figure 3b: Vertical connections are a feature in all major styles of the Arabic script, from the oldest kufic style as seen in this example from an early Islamic manuscript, left. On the right is the same text in the naskh style.

The spread of Islam took Arabic outside its area of origin, and Arabic became an empire language and above all the language of religion. The efficient script with fourteen basic shapes, a useful writing system for native speakers of Arabic, was a burden to non-Arab Muslims. This circumstance led to the introduction of diacritics, i.e. small supplementary symbols in writing.

3. Optional graphemes: vowel markers. Vowels began to be written in the seventh century, i.e. the first century of the Islamic era, by means of dot-shaped signs surrounding the basic letter groups. In modern Arabic script this method is still in use, but the dots have been superseded by miniature versions of letters such as alif (indicated by a small stripe) and waw (a small, open comma-shaped form).

Figure 4: Early Islamic manuscript in kufic style, left, showing the early development of vowel marking. The light grey dots and stripes (red in the original) are vowel markers, the two grey stripes indicating a long vowel marked in later text by a superscript alif; the dark stripes are consonant markers (see figure 5). On the right is the same text in the naskh style.


Figure 5. In early, unmarked Arabic script, certain shapes could express multiple letters: the archigraphemes (the common graphical elements of two or more letters, minus the distinctive graphical elements). As a consequence, words could only be read in context. In some cases, like this example, even context might not resolve the ambiguity. The modern system of dots differentiates consonants of identical form.

To make the script more explicit, small stripes made by the imprint of the nib are introduced to distinguish otherwise identical bare letters. In modern Arabic script, the function of these stripes is taken over by dots above or below the bare letters — the tip of the nib is drawn exactly the length of the imprint, replacing the small stripes.

WHO ARE THE USERS OF ARABIC SCRIPT?

The spread of Islam incorporated a number of other cultures and their languages. In the areas bordering Arabia proper, Islamic culture with its Arabic language and script tended to take the place of the original culture and language. In the more remote areas, the traditional script was...
Language Culture Type

relinquished in favour of the Arabic alphabet as an expression of their cultural affiliation with Islam, but the original language was retained.

The resulting Arabic-scripted world therefore consists of both Arabic and non-Arabic speakers. It can be represented schematically on a map as three overlapping ellipses.

The inner ellipse—the inner circle—is the original Arabia, where native speakers continue to use their historical language and script. Geographically it coincides with the Arabian Peninsula, also the heartland of Islam: the Ethnic Arabs.

The middle ellipse is made up of areas where Arabic replaced other languages and scripts. Geographically, this area covers Mesopotamia, the Levant, and North Africa; the Cultural Arabs. Together with Arabia proper, it constitutes the modern Arabic-speaking World.

The outer ellipse is made up of those Islamic nations that continue to use their historical language. As an expression of their integration in the Islamic civilization, these peoples replaced their original writing with an adaptation of Arabic script.7

Together, the Arabic-speaking world and the rest of the Arabic-scripted world form the Islamic world. For the non-Arabic portions of the Arabic-scripted world, Arabized computing is made complicated by the diversity of languages and the various extended Arabic alphabets.

Throughout history, a large number of languages were at one time or another written with the Arabic script, including such widely divergent ones as Spanish, Bosnian Serbo-Croatian, Hausa, Tamil, and even Zuid Afrikaans. Present-day languages using Arabic script include Persian (Iran), Pashto, Dari (Afghanistan), Urdu (India, Pakistan), Javanese (Indonesia), Kurdish (Iraq), and Uyghur (China).

Extension Devices

In order to enable the use of the Arabic alphabet for writing sounds in other languages, additional letters had to be created. The Arabic alphabet was expanded by deriving new letters from existing ones using a variety of devices. These devices derive directly from traditional aspects of Arabic writing; that is, they extend existing conventions to new purposes, rather than inventing new conventions.8

The gap. A gap, instead of a connection, creates the new, derived letter: e.g., the old hāʾ (connected) becomes the new ʾāʾ (disconnected). The basic shape of the new letter is the same as the corresponding Arabic form, but the assimilation pattern in text is different (figure 7a).

The dot. A diacritic is added in the form of additional dots: e.g., the ʾāʾ (one dot below) becomes the new ṣāḥ (three dots below). The bare letter form is the same, but additional dots indicate new letters (figure 7b).

Figure 7a: Not all Arabic letters connect. A gap is used in Arabic (grey, left) to distinguish the originally identical sounding forms of ʾāʾ and ʾāʾ. In the orthographies of some non-Arabic languages such as Kurdish and Uyghur (right), a gap is used to create a new letter based on the Arabic ʾāʾ. In Arabic (black, middle), this class of letter joins on both sides; in Kurdish it joins on the right only, and indicates the vowel ʾa.

Figure 7b: Many new letters are formed for non-Arabic languages by adding new patterns of dots (black) to the basic forms of Arabic letters (grey).

Figure 7c: In Arabic (grey, left) the letter ḥāʾ is distinguished from the similar – or, in this shahīd example, identical – shape of ʾāʾ by the inclusion of a small mark derived from a miniature form of the swash ʾāʾ in Urdu (black), a miniature form of the Arabic ʾāʾ is used to distinguish the letter ʾāʾh from the Arabic ʾāʾ.

Figure 7d: The Arabic letter ʾāʾ (grey) has a variant calligraphic form. In Urdu (black), this variant is treated as a distinct letter, ʾ, seen here in its word-final form.

The miniature. A diacritic is added in the form of a miniature letter: e.g., the two dots above the old hāʾ are replaced by a miniature ṣāḥ ṣāḥ to create the new tāḥ. The bare letter form remains the same, but the diacritic dots are replaced by a miniature letterform (figure 7c).

Variation. Arabic script developed a remarkable versatility. The relatively well-known obligato contextual variation can be understood as a kind of graphic assimilation process. There is a creative tension between this assimilation and the graphical dissimilation of nominally identical letters in calligraphy, which produces free variants. In a number of cases these variants have become distinct letters in the orthographies of non-Arabic languages (figure 7d).
TECHNICAL AND AESTHETIC CHALLENGES

Before the invention of photography, nineteenth century travelers were often accompanied by artists. Their meticulous drawings reveal an interesting blind spot in these observers’ minds. The celebrated painter David Roberts RA does not depict a single letter of Arabic. Others seriously try to reproduce Arabic script, but with varying success. This drawing, for instance, of the interior of the Hagia Sophia Church, alias Aya Sofya Mosque (figure 8), includes some of the large calligraphic tableaux with the names of the caliphs (visible are the names of: Ali, Umar, Hussein, Hasan, and Abu Bakr). The delicate beauty of the building is captured with an eye for subtle detail, but none of that subtlety remains in the depiction of the Arabic calligraphy. What does remain is the visual equivalent of Beethoven’s Für Elise played on a cell-phone. This alarming lack of perception still pervades all attempts to deal with Arabic script.

A cultural aspect

In the simple approach to Arabic script, all attention goes to the assimilation of the letters, that is, to their contextual formation. The four posi-

Figure 8. Interior view of the Aya Sofya mosque, Istanbul, from Giuseppe Rusatti’s Die Hagia Sophia. This image captures the paradox of the western visual artist’s encounter with the calligraphic art of Islam: the building is rendered with precise accuracy, utilizing all the techniques of linear and atmospheric perspective in the European tradition, but the image of Arabic calligraphy lacks any understanding of the actual forms. It is as if the artist lacks the necessary mental machinery to understand what he is seeing, and so is unable to depict it. The correct calligraphic forms are superimposed for contrast. (Conversely, this kind of realistic depiction of the building would likely have been impossible for an artist of the Middle-Eastern tradition, lacking an understanding of the visual culture of European art.)

tions (initial, medial, final, and isolated) are presented as actual forms. However, the authentic outcome is also determined by dissimilation. For example, the sequence bā’-ṣīn-ʿayn خ (can easily be misread as ʿayn-bā’-ṣīn خ as the letter ʿayn uses three strokes similar to that of the letter bā’ — or rather, of the bā’-class. In such cases the letter bā’ gets either a dissimilar, raised stroke when it comes before the ʿayn خ, or a dissimilar stretched horizontal connection after ʿayn خ. This essential reading aid and design feature is missing in almost every current font system, and this is just one example of dissimilation. Font technology has still to discover the full extent of the traditional system.

The shaping of Arabic is governed by a set of rules that are both practical – in that they improve the legibility – and elegant, as they were laid down by people who rank among the world’s greatest graphic artists. What sets the Arabic alphabet apart from all others is its development into an elaborate morphographical system. It is the outcome of a conscious effort by Arab and Persian scholars to turn the late Syriac-Aramaic script inherited by the Arabs into a finely balanced connected script, as an expression of Islamic culture. From the sixteenth century onwards, Ottoman calligraphers developed a number of the existing styles into uniquely disciplined art forms.

Figure 9. Qur’ān fragment with colophon identifying it as the handwriting of Mehmed Şevki (Muhammad Sinan) Efendi, an Ottoman calligrapher in the school of Nusret Efendi, whose handwriting was to become the model of the finest nineteenth and twentieth century Arabic typography.

Simplification attempts

Typesetters have been wrestling with Arabic script for centuries. Giving it a structure identical to that of Latin script would eliminate all problems, of course. The few known attempts to do this, however, were completely illegible and culturally alien, which may account for the lack of success of the designs of that nature.
Understanding the structure
Writing Arabic involves more than just lining up letters. The connected letters assimilate with each other. They are highly adaptable, which makes it impractical to describe each variant individually. In Arabic script the graphic unit of writing is the 

syntagm: a string of connected letters.

It is interesting to note that the concept of discrete or analytical letter permutations, as on typewriters and in modern fonts, did not exist amongst calligraphers. In traditional naskh, or writing exercises, contextual variants are never shown out of context; they are always shown as part of the syntagm.

Another important point is that all letters are subject to the intricate shaping rules that balance between assimilation of distinct letters and dissimilation of featureless letters.

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Figure 10. A skeleton of six dissimilar forms is revealed, by the placement of dots, as a sequence of the letter ن repeated six times.

Typsetting Authentic Arabic
The obvious differences between authentic naskh writing and mechanical naskh reproduction can be attributed to a technical problem: it is very difficult to handle syntagms in typography. Each syntagm within a word forms a unit that relates to the baseline as a whole; e.g. it stands on a secondary baseline (in naskh at an angle of approximately 5 degrees, in ruq'ah slightly steeper). Between the words there are no orthographic spaces – final forms mark the word endings at the cutting point of the two baselines. In conventional typsetting of Arabic, no such difference between main and secondary baseline is possible. The slanted base line of the letter groups is made horizontal, creating the need to enhance the final forms of words with typographical spaces, bringing it in line with Latin script. The nineteenth century Ottoman punchcutters who worked to emulate the elegance of Arabic script understood the synthetic nature of script. Far from using individual, analytic letterforms, they designed an elaborate system of syntagm components to mould any occurring sequence of letters into a syntagm. One would be tempted to call these letter-compound segments ligatures, but there is a difference. Ligatures are usually optional, i.e. discretionary letter combinations in an otherwise analytical writing system. For these typsetters, syntagm components were the basic building bricks, sometimes covering more than one letter, but often representing only part of a letter – or a letter and a half. Dots and vowels were added separately.

Successful designs
At the end of the nineteenth century, there were very good Ottoman type designs to cope with the dual, multilevel baseline of most Islamic scripts. These typefaces could consist of well over a thousand individual elements of metal type and were highly complex. Because of this, they required specialized technical virtuosity based on thorough knowledge of the underlying calligraphic script. In the last quarter of the nineteenth century and the first half of the twentieth century, this typography produced impressive results.

European attempts
These Ottoman developments took place in the second half of the nineteenth century. In Europe, typesetting with Arabic characters has been undertaken since the early sixteenth century. The early Arabic types have a Western North-African appearance. Maybe European punchcutters had access to the Andalusian spoils of the Spanish Reconquista, and were consequently misled in their calligraphic styling; in any case, their designs were totally out of touch with Islamic taste and with Middle Eastern taste in particular. If these early attempts had any effect on the development of Islamic printing at all, it was negative. In the period that Middle Eastern calligraphy was reaching its zenith, European Arabic typography produced absolute monstrosities. For more than two centuries the Ottoman authorities opposed the large scale introduction of typesetting and printing of Islamic script; the low quality of the designs was a factor in delaying the acceptance of typography in the Islamic world.

Figure 11a. Typical European font used to typeset the Corpus Arabicum rerum Islamicarum, Leipzig Germany 1865, shows widely spaced primitive forms without relation to any known calligraphic style.

Figure 11b. The same text as printed in the first and only typeset Qur'an authorized by the Ahrar University, the so-called Pauls Qur'an (1934), printed in Cairo by combining Ottoman calligraphic expertise with German technology.

Figure 11c. The same text again, from an eighteenth century Ottoman manuscript by the hand of Mehmed Emin Kupáli Efendi. The main mission of Ottoman typography, the source of Middle Eastern Arab typography, was to maintain the integrity of this naskh, or book calligraphy, in type.
Breakthrough in Istanbul

The first, short-lived effort to print books with Arabic letters was made in Istanbul by Ibrahim Muteferrika, a Hungarian renegade, in 1727. In the last decade of the eighteenth century, typesetting in the Ottoman Empire was taken up again and on a larger scale, culminating in the designs of Ohanis Mühendisoglu in the second half of the nineteenth century. These laid the basis for all modern "nasq" typefaces. It took a scholar to handle the set of over 1500 movable types to construct each syntax correctly. With the increased use of typography, one can observe that the discrepancy between hand-written and type-set "nasq" increases, due to mistakes, incomplete fonts or ignorance of the design.

Figure 1. Typograph by Ohanis Mühendisoglu in the Yeni Hürafa, 1870.

The Mother of Arabic Typography

Ottoman "nasq" (spelled "nasq" in modern Turkish) definitely guided all Middle Eastern efforts in typography. In the 1860s the Armenian typographer Ohanis Mühendisoglu, an Ottoman-Turkish citizen, finally succeeded in reproducing this script in a way that met the demanding standards of the Islamic calligraphic tradition. His sublime approach to typography was clearly based on a sophisticated understanding of Arabic script and calligraphy. Figure 12 shows brilliant typesetting by Mühendisoglu in the Yeni Hürafa in the three main languages of the Ottoman Islamic world: Arabic, Persian, and Turkish.

In the context of Ottoman culture, it was unthinkable that a lowly typographer would attempt to produce his own version of Arabic script. Mühendisoglu (1810–1891) modelled his typography on the handwriting of Kazi Aker (Supreme Judge) Mustafa İzzet Efendi (1801–1876), who ranked among the viziers or ministers of the Ottoman state. İzzet Efendi, i.e. Lord İzzet, was a man of great authority. He was a composer of Ottoman classical music and the leading calligrapher of his times. Among the many calligraphic and musical compositions of his hand are the large tableaux inside the historical Aya Sofya Mosque in the very heart of Istanbul, capital of the Ottoman Empire. This lofty man certainly was not the type to be involved in anything so plebian as type design, and it can be ruled out that the craftsman and the calligrapher ever met.

This adaptation by Mühendisoglu of İzzet Efendi's calligraphy is the starting point of all later Arabic "nasq" typefaces. The font was graphically extremely sophisticated, as it was designed to follow all the "ichigraphic" rules of "nasq" in the tradition of the copyists, the professional book producers before the advent of typography. The essential feature is that it deals with both dot and vowel attachments as separate horizontal layers above and below the main script. In other words, the design was "archigraphic." However, the seeds of decay are already present in the 40-page Yeni Hürafa booklet. The initial pages immediately implement every rule with the correct glyph. As the page numbers go up, so the number of calligraphic typos increases: the zenith of Arabic typography stands at the beginning of the erosion, rather than the evolution, of "nasq" script. This is an extremely good design, but it should have had a computer program to support it!

Arabic ligatures

An interesting concept in the type industry is the Arabic ligature. In Latin typography the ligature is an aesthetic device to improve the rendering of a few troublesome letter combinations. Such replacement letter groups belong in fonts, whence a rendering system can use them to replace let-
ter groups. In Arabic, however, connecting letters is not the exception but the rule. Theoretically each letter can have a different appearance in any combination, something that can only be crudely imitated with ligatures. The use of ligatures tends to be determined by the nature of the typeface design and the technical limitations of the font technology. Many contemporary fonts contain a multitude of ligatures in order to approximate the desired appearance of authentic Arabic text, but it needs to be understood that this is a technical solution to a technical problem, and not an inherent feature of the Arabic script. It is not hard to conceive of different technologies for typesetting Arabic that would achieve equivalent or superior results without using any ligatures at all.

**Figure 14a.** Skeleton script showing individual graphemes.

**Figure 14b.** The addition of dots establishes the identity of ambiguous graphemes.

**Figure 14c.** Consonant enhancers identify reduplicated consonant graphemes.

**Figure 14d.** Vowels are identified, or their absence is marked.

**Figure 14e.** Punctuation or cantillation (precise verbalisation) is indicated.

**Figure 14f.** The erroneous placement of illegal dots in copying is blocked.

**Figure 14g.** Ornamental elements are added to aesthetically fill holes in the text.

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**Horizontally layered structure**

Arabic script is best constructed following the historically-evolved pattern: in several horizontal layers surrounding the skeleton layer, each one adding an additional aspect of the script in a strict order. The best-known layers are those of dot patterns and of vowels. In addition there is a separate layer for the shadda or consonant enhancer. The full layered system (figure 14) is especially important in Qur'anic text, where it guides correct pronunciation and copying and also prevents likely errors.

**Calligraphic alternation**

Islamic script is more than just a connective alphabet with contextual variation. Many letters can be variously rendered with calligraphic alternatives, each of them having an equivalent range of contextual permutations. This phenomenon is much more powerful than the nearest equivalent in Latin calligraphy. Calligraphic permutation opens the perspective of fine-tuning justification in typesetting with a mechanism borrowed from calligraphic manuscripts.

**Figure 15.** Five different settings of the two same words in the riyad style, showing how alternate calligraphic permutations can be used to justify text across varying column widths. Other permutations are possible.

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**Unicode & Arabic**

The Unicode character-encoding standard enables cultural diversity in computer text processing. In terms of encoding, the logic of Arabic is no different from any other alphabetic script, hence the real challenge of the computer age is not the encoding of Arabic but its visual representation: the development of digital typography that leaves the graphical structure of the script intact.

The Unicode standard is designed for logical representation only: the entry, storage and manipulation of raw text. In practice, it is sometimes mistakenly used as a glyph list for font designers. Such mixing of levels, of logical and visual representation, is potentially disastrous for the emerging Arabic typographic technology. A fixed list of Arabic letter shapes puts unrealistic constraints on the artistic reproduction of Arabic text in digital form. The future must embrace flexible, generative mechanisms of representation, working above the level of Unicode text.
Notes
1. Even a well-researched work like Arabic Typography, a comprehensive sourcebook by Huda Slimani (London, 2001) is written without the notion of rules governing the joining of letters. Its "anatomy of letterforms" does not venture beyond summing up the absolute minimum of letter variations (§3.2, p.99).

2. A positive exception is T.P. Mitchell, Writing Arabic, a Practical Introduction to Ras' Script, Oxford 1953. It is the only book in English that attempts to give a systematic description of Arabic script. Unfortunately this excellent book fails to point out that the structure it describes is in fact the general structure of Arabic script. Ras'happens to be the authentic simplified Arabic and as such is a good stepping-stone for beginners.

3. The author wishes to thank Mamoun Sakka! for providing this illustration from his website at www.sakka.com/ArtArabicCalligraphy.html

4. "By about twenty years after the death of the Prophet, his successor, the Caliph, had gained control over the Arabian Peninsula. In addition, all the Roman provinces from the Syro-Palestinian coast to the mountains of Kurdistan as well as the core of the Persian Empire had come under his dominion. In another twenty years all of North Africa had been subdued and Spain was to follow suit. As for the government of this large empire, the Arabic first retained the Persian and Byzantine state machinery integrally. They did not interfere with the internal civil and religious administration of the conquered peoples. At this point in time, the seventh century Ad, i.e. the first century of the Hijra, it is an anachronism to think of the spread of Islam as a mass conversion. The Arabs in History, B. Lewis (OUP 1966), pp.49–63, 'The age of conquest'.

5. One can assume that the enhanced orthography was above all meant to facilitate memorizing the Qur'an in a properly recited form. Such diacritics therefore may be considered mainly pedagogical. In order to avoid the impression that the received text was altered, they were written by means of red dots. In some manuscripts one also observes brown points in the same role.

6. In the Levant (Syria, Lebanon, Palestine) and Mesopotamia (Iraq) various Aramaic languages were replaced by Arabic. In some parts these languages continue to be used by Christian communities. Egyptian only survives in the Coptic Christian community for sacred use. In the remainder of North Africa the Berber languages still maintain themselves in many places.

7. Until the beginning of the twentieth century this was the case with no exception. The main exceptions were created in the past one hundred years. The Turkish Republic abolished the writing of Turkish with Arabic script in favour of Latin; the Soviet Union forced a number of Islamic peoples to convert to Communism and the associated use of Cyrillic script: 'Alphabet follows religion' (Dörtinger, The Alphabet, a key to the history of mankind. London, 1968). This phenomenon can also be observed in the Christian world: Roman Christendom meant Latin Script; Greek Christendom meant Greek (and later Cyrillic) script.

8. In the development of the proto-Arabic script, the opposition of connected and disconnected forms to distinguish different but morphographically similar letters is an old device that precedes the use of letter points for this purpose. Later non-Arabic alphabets continue these traditional methods. Like in the family of šd, ū, dh, n, m, and y: before the šd family got its dots, it was, as a whole, distinguished from the members of the šd, dh, ṛ, ṇ family – also still without dots – by the gap. This gap also forms the distinctive feature that helps to differentiate šlm from alīf. jē w. jēw.


10. Caspar Fossati, Die Hegia Sophia, nach dem tugwerk von 1852, Harenberg Kommunikation, Dortmund 1980. For comparison similar, authentic tableaux are superimposed; these are taken from Nahid F. Salwan, The Art of the Pen, Calligraphy of the 14th to 20th centuries, Volume V of the Nasser D. Khalili Collection of Islamic Art, The Nour Foundation/Oxford University Press 1996.

11. These examples represent the skeleton representation of the words saâd 'seven' and tír 'eight', which were indistinguishable in old manuscripts, leading to ambiguous datings. (Personal communication from Dr Gerold-Rüdiger Pinet, University of Siegburg, Germany).

12. Mihrîndüșlü is the Turkish version of his name, with the literal meaning of son of the land surveyor (or civil engineer). His name is also encountered in Ottoman-Turkish (Mihrîndiçü) and Armenian forms (Mihrîndiuan).
LANGUAGE CULTURE TYPE
International type design in the age of Unicode

LANGUAGE CULTURE TYPE is a wide-angle snapshot of global typeface development at the start of the 21st century. It is a landmark publication in the long history of type and printing. No other book has taken such a consciously global approach to the way written communication is reproduced around the world.

The publication of this book sprang from the first type-design competition sponsored by the Association Typographique Internationale (ATypI), which was judged by a multilingual jury of typographic experts in December 2001 in Moscow. The competition, entitled bukva:raz! (Russian for ‘letter:one!’), was intended to promote cultural pluralism, interaction, and diversity in typographic communications. It was a special contribution of ATypI to the United Nations Year of Dialogue among Civilizations (2001).

The heart of Language Culture Type is the winners of bukva:raz!, along with information about each typeface, its language, and its designer. Complementing the typeface showings is a series of essays giving context and perspective on the interplay of types and languages in the world today, and delving into the specific problems and solutions of developing typefaces for the many linguistic cultures of our world. Robert Bringhurst, in his lead-off essay, presents a new classification system for the world’s different kinds of writing—a ‘taxonomy’ of written language—while John Hudson tells us where we stand in the technical challenge of communicating across cultures through digital type. Other essays look at type design for Arabic, Hebrew, Greek, Cyrillic, Japanese, and the languages of Africa, as well as the Latin alphabet.
bukvareti
Type design competition of the
Association Typographique Internationale
bukvareti, an international competition of type
design, was organised by the Association Typographique Internationale (ATypI). It is the first event
of this kind since the founding of ATypI in 1945. The
competition was officially announced at the general
meeting of ATypI in Leipzig, on 24 September 2000.

bukvareti was a special contribution of ATypI to
the United Nations Year of Dialogue among Civilizations (2001). Bukvareti was aimed at promoting
cultural pluralism and encouraging diversity,
interaction, and co-operation in typographic
communications. 251 designers from thirty countries,
of various ethnic, linguistic, and cultural back-
grounds, contributed to the contest.

Over six hundred entries competed in five catego-
rules: Text designs, Display designs, Text/Display
type systems, Type superfamilies, FI fonts. Four-
teen alphabets/character systems were represented
by the entries to bukvareti: Arabic, Armenian,
Cretian, Greek, Hebrew, Irish, Latin, Ogham,
Xishuangbanna Dai (New Tai Li).

The competition was arranged on behalf of ATypI
by the Type Designers Association, a professional
society based in Moscow, which unites the best type
design professionals of Russia. The name of the com-
petition — bukvareti — translates as "letter form" in
Russian; it is a Russian term for "letter form" and not for "one" (as in "two thousand one").

The judging of bukvareti took place in Moscow, Rus-
sia, on 3 and 4 December 2000. The jury of bukvareti
included renowned experts in international type
design and typography: Matthew Carter, Yuri Cher-
chik, Alrite Khabashli, Lyudmila Kazantseva, Barry
Laurillard, Fiona Ross, and Vitaliy Saffron. The
jury was chaired by Maxim Zhekov.

One hundred entries selected by the jury to receive
Certificates of Design Excellence were shown at
the annual conference of ATypI in Rome in September
2000, and at the exhibitions in Moscow, St. Peters-


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Language Culture Type

INTERNATIONAL TYPE DESIGN
IN THE AGE OF UNICODE

Edited by John D. Berry

WITH A SPECIAL SECTION
SHOWING THE WINNERS IN BUKVA:RAZ!,
THE TYPE DESIGN COMPETITION
OF THE ASSOCIATION TYPOGRAPHIQUE
INTERNATIONALE

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First published in New York, 2003, by the Association Typo-
graphique Internationale (ATypI), 10 Ridgeway Road, Redhill,
Surrey, RH1 6PB, United Kingdom; and Graphis, Inc., 307
Fifth Avenue, 10th Floor, New York, New York 10016, USA.
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Design by Maxim Zhakov. Page make-up by John Hudson.
Distributed by Publishers Group West. Printed in the U.K.
ISBN 1-932035-01-0

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Acknowledgements
Thanks to the following for their help in making this project possible: Adobe Systems for providing an early copy of InDesign 2.0 to facilitate the typesetting; Matthew Carter for donating his typefaces Fenway and Vincent; ParaType for donating New Letter Gothic, and the ITC Cyrillic fonts; Masterfont for donating Hebrew fonts; DecoType and Linotype Library for donating Arabic fonts; Andrey Andreyev, Mark Batty, Lev Mazin, Nikita Ordynskiy and Vladimir Yefimov for permitting us to use their photographs from the bukva:raz! competition judging and the Judges’ Soirée in Moscow.

Foreword

This book is a major project of the Association Typographique Internationale and is part of ATypI’s continuing outreach program. It is a monument to contemporary typographic creativity throughout the world. In these pages you will find examples of the best work that has taken place in typeface design over the five-year period 1996–2001. More than one hundred examples of typefaces, featuring fourteen different alphabets and writing systems, are displayed.

Since 1957, ATypI has been a forum and a catalyst to promote excellence in typography, type design, type technology, and education. More recently the work of ATypI has focused on its international conferences. These take place annually, each in a different city, thus far either in Europe or in the Americas. Each conference has been an evolving combination of discussion groups, forums, lectures, and exhibitions.

The main purpose of ATypI conferences has been to provide an environment where practitioners of the lettering arts can come together to share views and concerns and to find ways of promoting excellence in typographic communications. This has been accomplished effectively, but over time there has been considerable technological and market change, which has modified the demand for typefaces, the nature of typefaces that will be commercially successful, and the role of the people who design them and sell them.

ATypI members have become increasingly aware that the value of ATypI’s contribution and effectiveness can and must be enhanced by projecting its activities beyond the comparatively ephemeral nature of the conference environment. Other initiatives have been developed that have the quality of building blocks, thereby providing a more permanent structure to encourage growth and innovation within the Association. Among these building blocks has been ATypI’s publications program. There have been newsletters, journals, and books, but none on the scale of this project.

The idea for Language Culture Type started to develop in 1999. There were several strands that led us to our conclusion.
Language Culture Type

We wanted to find a way to promote cultural pluralism, encourage diversity, and provide a co-operative environment for the development of truly international typographic communications.

We were aware that the United Nations was planning 2001 as the Year of Dialogue among Civilizations, an important initiative that fit well with our own aspirations.

The idea of a well planned and internationally organized open competition, with enough winners to provide an onlooker with a good sense of the trends in international typeface design, started to take shape.

It seemed an obvious choice to reach out beyond the conference, to make the competition happen, and to publish a book that would act as a comprehensive vehicle to show what we had found, and to explain its importance to a wider audience.

The result is this publication – but as with all the best projects, the story does not end here. This book represents not so much an end as a new beginning. Our survey of international type design over the last five years is reported in this book in such a way that we hope that it will have lasting relevance and continue to be a useful reference tool for many years to come. As a first attempt this is something of an experiment, but it is our intention to repeat this initiative in another five years. It will be interesting to compare developments over that time; not just in design trends, but also exploring the effect of cultural and political shifts.

Mark Batty
President, ATypI

Preface

WRITTEN COMMUNICATION around the world is accomplished almost entirely with type – not just in the traditional form of typography in books, magazines, and printed ephemera (advertisements, flyers, posters, tickets, labels, and so on) but on television and movie screens, in many kinds of public signage and wayfinding, and in all the myriad ways in which we now use digital fonts. The number of people who design type is small – a few hundred, perhaps – but the number who use it has become vast. Type matters.

Despite the dominance of English in the world today, and especially its preponderance on the Internet, only a portion of that global communication is done in English, or even in the Latin alphabet. The distribution of languages around the world is uneven, and any attempt to map them must of necessity lie, through oversimplification. People speak more than one language, whether well or badly; people move around, and learn or forget; people play with their language, making jargon and inventing new terms; people hear new words on television or radio, or in the local marketplace, and adapt them to their own use. Almost all the languages in the world today can be written, even those that were once purely oral; and once a language is written, there develops a constant back and forth between its written forms and its spoken forms, each influencing the other. In order to communicate in our many tongues, we need type.

The number of writing systems in the world is large, although a few have become especially widespread: the Latin alphabet, the Cyrillic, the Arabic; the Chinese ideographic system; Japanese syllabic writing; Devanagari and its relatives in India. Some scripts, such as the Hebrew and Greek alphabets, have a high profile even though the number of people speaking their languages is relatively small. Other writing systems are used by multitudes, but are not widely known outside their native areas.

All of these writing systems started out as handwriting, but today they are all reproduced – and widely read – as type. Now that we can send digital text to each other, we find ourselves up against a technological problem: how to make sure that the text we send can be read correctly when it is printed on paper, or when it appears on someone else's
computer screen. Anyone who has tried to use accented characters in an
e-mail message knows how uncertain this can be.

The year 2001 was declared, by the United Nations, the ‘Year of
Dialogue among Civilizations.’ The events of 2001 made it clear just
how important that dialogue can be, and how much we suffer if it’s ne-
glected or misunderstood. As part of this Year of Dialogue, the Associa-
tion Typographique Internationale (ATypI) sponsored an international
competition for the best type designs of the previous five years — in all
alphabets and writing systems, used in any language, from anywhere in
the world. The competition was organized in New York and Moscow, an
office was set up in Moscow, and the whole project was given the some-
what playful name bukva:raz! (‘letter:one!’ in Russian). The judging was
done in December 2001 by an international jury of distinguished typog-
raphers and type designers, who chose the 100 best type designs out
of those submitted. The winning designs are shown in this book, along
with information on the typefaces and their designers. To put them in
context and provide some depth of information about a few of the dif-
ferent scripts shown here, we asked type experts from around the world
to write essays on several different writing systems and the problems of
designing type for them.

The voices heard in these essays are diverse and individuel. This is
not a definitive ‘official’ overview. In the spirit of the book’s ecumenical
nature, we have made no attempt to homogenize them into a single style,
and we have followed the authors’ preferences in using either American
or British spelling conventions. (For clarity, though, we have adopted
a consistent style of punctuation.) Although considerable thought has
been given over the years to coming up with agreed-upon definitions for
typographic terms like ‘character’, ‘glyph’, ‘letter’, and so on, we have left
it up to each writer to decide how to use them. The purpose of this loose-
ness is not to create cacophony, but to allow each voice to be heard in its
own cadences and accents.

The proportion of Latin and non-Latin typefaces among the bukva:
raz! winners is not a reflection of the distribution of scripts or typefaces
in the world. It is simply a reflection of the typefaces that were entered —
and, among those, of which ones the jury chose. Not surprisingly, in an
information world currently dominated by Western European languages,
there were more Latin typefaces than any other kind. But such things are
fluid; in another year, the mix might change. Language Culture Type is a
benchmark of where we stand today in both the craft and the technology
of making typefaces for use in global communication.

John D. Berry
MISHA BILTSKY first fell in love with design attending night classes at Moscow Printing Institute in Russia. At the age of seventeen he moved to the United States with his family. While studying illustration at Rhode Island School of Design, he apprenticed with David R. Godine, Publisher, and there became infatuated with a well-made book and its typography. Upon graduating, he joined the design department of Alfred A. Knopf, Publisher. He recently returned to New York from a sabbatical he took to study the Talmud in Jerusalem, and presently designs books for Abbeville Press Publishers.

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JOHN HUDSON designs type and is co-founder, with Wen Ross Mills, of TypeTypeWorks, an independent digital font company specializing in fonts for multilingual and scholarly typography. TypeTypeWorks' clients include Microsoft, Linotype Library, and Apple Computers. He has received awards in Cyrillic type design, and for his outstanding contribution to the development of Cyrillic typography and international typographic communication. He writes and lectures on type technology and font software, and as co-chair of the ATYPE Font Technology Committee he organizes the annual ATYPE Font Technology Forum. Most recently, he has designed new Cyrillic, Greek and Hebrew typefaces, and helped review an Arabic newspaper face.

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GREG LEONIDES (see p. 163).

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THOMAS MILO incorporated DecoType in 1985 with two partners. Tom has studied Old Church Slavonic, Russian, Bulgarian, and Macedonian; Ottoman Turkish, Modern Turkish, Azeri, and Yakut Turkish; and Modern Standard Arabic as well as Egyptian, Lebanese, and Moroccan Arabic. He worked in Saudi Arabia for a Dutch trucking company (1979–77), and did two tours of duty as an Arabic-speaking officer in the United Nations Interim Force in Lebanon. DecoType contributes fonts and Arabic Calligraphy applications to Microsoft Office Arabic Edition; for Adobe PageMaker Middle East, it provides a special interface for Calligraphy typography; to the Mac OS X, it contributes Arabic fonts. Together with Baroes Graphics, DecoType is working on a complete implementation of its design strategy for authentic Arabic.

FIONA ROSS (see p. 165).

ADAM TWARDOCH has been engaged since 1990 in multilingual typography, type design, web design, and software development. He has created Central European versions and custom extensions for over fifty fonts, as well as several of his own typefaces. In 1999 he joined the agentur GmbH in Frankfurt (Oder), where he is currently responsible for typography and new media. Since mid-2000, he has been typographical consultant to MyFonts.com. He is the Polish country delegate to ATypI, and is a member of A TYPE board.

VLADIMIR YEFIMOV (see p. 165).

MAXIM ZHUKOV (see p. 165).