Lapidary Kufic

Angular Scripts | The Quadrangular Style

The Kufic script attained its ultimate geometrical style when transposed onto mosaic. All curves were removed and the result was the square, geometric Kufic style. The graphic potential of this style was mostly developed for monumental inscriptions.

Square Kufic in a Persian mosaic (thirteenth century, Nishapur, Iran).

Square Kufic: (seventeenth century, Cairo).

Square Kufic to be read in spiral fashion (mosaic, Iran).

Square Kufic in mosaics. Here the name 'Ali is repeated at several angles and may be read in black or white (Iran).
A major event that considerably influenced the style of Arabic writing was the invention of paper by the Chinese in 105 CE and the subsequent discovery of it by the Arabs in Samarkand in 751 during their westward expansion. Paper was both easy to make and relatively cheap, and accelerated the spread of writing. The smooth surface of this new medium profoundly changed Arabic writing and led to the further development of cursive styles, thus paving the way for the golden age of Arabic calligraphy. The production of paper followed the development of the major university towns.

In around 1200, there were more than 300 paper manufacturers in Fez, and part of their output was sold to the Christian world.

The practice of writing spread with the expansion of the Arabian empire. The active dissemination of the Qur’an led to the establishment of numerous universities. Moreover, the administration of territories that were increasingly distant from their capitals further increased the need for written communication. This increased production of written texts encouraged the development of cursive writing styles that rapidly replaced Kufic, which was considered too slow and was relegated to headings. During the blossoming of calligraphy, the Kufic style almost disappeared from manuscripts but continued to be used primarily for monumental and decorative inscriptions.

Naskh writing before Ibn Muqla’s codification.
Writing is the trace left by the movement of the pen. With the invention of paper and improved ways of sharpening the extremity of reed pen, the hand was freed from the linear constraints of carved lettering. The supple and continuous movement of the pen contributed to developing curves. The calligrapher wrote for as long as possible before lifting his pen. In this way he achieved a pure, uninterrupted flow of movement, and also gained time. The result was the formation of specific shapes for each letter depending on the letter that preceded or followed it.

Thus with use, each letter of the Arabic alphabet acquired between one and four distinct shapes, depending on where it was situated in a word. Moreover (and for the same reasons), combinations of several letters gave rise to special graphic shapes called ligatures, which were faster to write and followed the logical movement of the writing implement.

Final letters developed large curved appendices that filled the space between words and also served as a harmonious introduction to subsequent ones.
The shapes of letters multiplied as they were adapted to each new configuration according to the calligrapher’s skill and imagination.

Calligraphers’ individual variations:
1. Mohamed Taher Efendi (1825)
2. Mohamed Rifat (1901)
3. Mohammed Amin (1898)
4. Nasri Kouran (1940)
5. Kameel Akifi (1931)
Ibn Muqta’s Canon of Calligraphy

Pages from the Canon of Calligraphy transcribed by Muhammad al-Shaf'i (Egypt, 1663). Note the copyist’s comments in the margins.

The Golden Age of Calligraphy

Ibn Muqta (894-950) was the first person to codify the writing that became known as naskh, by laying down the forms and proportions of each letter. In his Canon of Calligraphy he specified that the height of the alif was to be taken as the diameter measurement of the circle to be inscribed around each letter.

The standardization of elements that were common to several letters established a graphic unity while leaving considerable freedom to the calligrapher.

Ibn Muqta also analyzed each movement of the reed pen and named them:

vertical, oblique, arched, horizontal, extended

In addition, Ibn Muqta provided advice on making ink and sharpening the reed pen. He may have been the first person to cut the reed at an angle.
The perfect elegance of Ibn Muqla’s mas’hd writing and the beauty of the line drawn by the reed pen made this style the one most frequently used scripts up to the present, and is still the basis for artistic expression in the Muslim world today.

The roundness of mas’hd lines and the rhythm of their spacing made it the natural corollary oral culture. Just as the listener can feel the emotional vibrations of an orator’s voice, so the reader of a mas’hd manuscript can be aware of the minute sensitive impulses of the calligrapher’s hand. Every breath is perceptible.

Other calligraphers followed Ibn Muqla and perfected his basic rules.

Following Ibn Muqla’s principles, the proportions begin from a circle in thuluth script (tenth century).
Many calligraphers were to perfect Ibn Muqta's method, including Ibn al-Bawwab (1022), Abu 'Umar al-Dani (1052), Yaqut al-Musta Simi (1298), Shakh Hammidallah Hamasi (1520), and Hafiz Uthman (1698).

One of the most important innovations was the use of the measuring point. Calligraphers needed a unit of measurement to specify sizes and proportion, and the unit chosen was a rhomboid point, the sides of which were equal to the width of the nib of the pen, which in turn varied according to the angle at which the reed was cut.

This is not a very precise unit of measurement but it does allow individual calligraphers to respect established proportions in their own interpretations. This traditional method is still in use today.
The Angle of the Nib

The careful sharpening of the stylus or reed pen determines the thickness of the stroke and the style of writing. Each style and every letter height requires a specific pen.

Technically, the various calligraphic styles are determined by:
- the width of the reed,
- the angle of the nib,
- the chosen height of the letter alif,
- the chosen angle of the vertical stroke of the letter alif,
- the chosen angle of the line of writing,
- the broadness of the stroke, determines the spaces between the words.

Cut of the nib for the Maghribi script.
Cut of the nib for the riqa', ta'liq, and eastern Kufic scripts.
Cut of the nib for the naskh, thuluth, i'jaza, and diswani scripts.

Six styles of cursive writing, known as al-Aqlam al-Sitta (The Six Pens), were codified by master calligraphers and deemed worthy of being used for transcribing the Qur'an. These were: naskh, thuluth, muhaqqaq, tawqi', riqa, and rihani.

Naskh
Although the naskh style was one of the earliest cursive styles, it became truly popular only after Ibn Muqla's Canon. Ibn al-Bawwab then perfected this style of writing and because of its elegance and readability, as well as its relative ease of use, naskh remains the most widely used style to this day.

Thuluth
The name actually means 'one-third,' possibly because this writing was one-third of the size of tumar, the widely used Kufic script. Alternatively, it may have been named for the proportions between the straight lines and the curves. The rounded and slightly emphatic style of its generous curves made it especially suitable for ornamental styles in titles, chapter headings, and dedications.

Muhaqqaq
Like naskh and thuluth, the muhaqqaq style was standardized by Ibn Muqla and perfected by Ibn al-Bawwab.

Tawqi
A similar style to thuluth, tawqi was created in the ninth century and adopted by the Abbasid Caliphate as the royal script. This prestigious use gave rise to variations of the letter combinations called ligatures.

Riqa'
Riqa' is very close to tawqi, but rounder and with a tendency toward simplification.

Rihani
This style emerged in the ninth century and shares characteristics with naskh, thuluth, and muhaqqaq. The curves under the line of writing are lively and slightly slanted.

Dozens of other styles also existed but were more or less short lived.
Reed pens of various widths.

The calligrapher and his tools: paper, reed pen, inkwell, knife, scissors, and whetting stone.

Naskh script, sample by Hassan Massoudy.
Thuluth script (Turkey, fifteenth-sixteenth centuries).

Calligram in thuluth script (Turkey, fifteenth-sixteenth centuries).
An example of the muhaqaq style:

عُلِمَ لَكُمُ اللَّهُ أَنَّ الْكُفَّارَ كَانُوا مَعَنِيَّةً أَنَا أَنْصَرُهُمْ عِدَّةً مِّنَ الْأَزْمَالِ، فَأَنْصَرُونَ عِقَابَ الْخَيْبَةِ، وَعَلِمَ لَكُمُ اللَّهُ أَنَّ الْكُفَّارَ كَانُوا مَعَنِيَّةً أَنَا أَنْصَرُهُمْ عِدَّةً مِّنَ الْأَزْمَالِ، فَأَنْصَرُونَ عِقَابَ الْخَيْبَةِ،

An example of the tawqi style:

الْعَلِيمُ مَعَكُمُ اللَّهُ أَنَّكُمْ كَانُوا مَعَنِيَّةً أَنَا أَنْصَرُهُمْ عِدَّةً مِّنَ الْأَزْمَالِ، فَأَنْصَرُونَ عِقَابَ الْخَيْبَةِ، وَالْعَلِيمُ مَعَكُمُ اللَّهُ أَنَّكُمْ كَانُوا مَعَنِيَّةً أَنَا أَنْصَرُهُمْ عِدَّةً مِّنَ الْأَزْمَالِ، فَأَنْصَرُونَ عِقَابَ الْخَيْبَةِ.

Arabic writing was influenced by the various cultures that were subjected to the Islamic conquest.

Two major influences gave rise to styles of writing that were to become classics and produced many offshoots:

- Ottoman influence produced riqa' and divani
- Persian influence produced ta'lliq, nestal'iq, and shekasteh.
Ottoman Cursive Scripts

Cursive Scripts

Calligraphy developed considerably under the Ottoman Empire (1299–1923). Skilled Turkish calligraphers further perfected naskh and thuluth and introduced two styles of their own, riqa’ and diwani.

Riqa’
Different from the classic script, this style was invented by Abul-Fadl Muhammad Ibn Khazin to facilitate administrative writing. It is characterized by an extreme economy of pen strokes and the removal of any gratuitous esthetic effect. The slant in every stroke is pronounced. Because it was quick and easy to use, this style became very popular, and it continues to be used a great deal today.

Diwani
The Diwani style was created for the exclusive use of the imperial court. It was first reserved for edicts and official decrees and was then used frequently in ornamental calligraphy. Diwani jeli is a decorative variation.

The special graphics used in the Tughras, or imperial signatures, were directly inspired from diwani.
Ottoman Cursive Scripts

Riq"a script, sample by Hassan Massoudy.

Divani script, sample by Hassan Massoudy.
In the tenth century, Haji Abu ‘Ali, a disciple of Ibn al-Bawwab, succeeded in adapting the Arabic script to the Persian language and created ta’liq (also known as farsi), or ‘hanging script.’ Every word followed its own sloping line and all the lines were parallel.

Toward the end of the seventeenth century, Mir Ali of Tabriz, influenced by the naskh style, invented nesta’liq, or ‘broken’ writing.

Lastly, Abdoul Hefid Taleqani created the shekasteh style. The contrast between downward and upward strokes is considerable in all three styles. The extreme slants of the lines led to very full and original forms of layout.
Locally, in India, Indonesia, China, and Africa, Arabic writing was subject to other lesser influences, but no really prominent style resulted.

These variations were mainly due to the different media and writing instruments used.
After many years of balanced and legible calligraphic styles came a period of increasingly stylized calligraphy, which was esthetically attractive but difficult to read. Calligraphy essentially became a decorative art, with calligraphers competing in manual prowess. Sometimes there was a deliberate attempt to reserve the meaning of the text for a religious or intellectual elite.

Because of the limitations imposed by Qur’anic law calligraphy was one of the few means of artistic expression, and calligraphers, like all artists, signed their works.

Calligram (Turkey, nineteenth century): esthetically beautiful but difficult to decipher for any but the initiated reader. The only purpose of the small accents is to balance the blank spaces.
Traditional sacred respect for ‘signs that speak’ mingled with superstition, sometimes takes on a symbolic and mystical aspect.

For the Sufis, in particular, calligraphy was a medium for meditation. Thus the written medium for divine thought was itself ‘inspired’ to visualize the harmony of the message itself.

This religious attitude to writing remains an important factor in the cultural development of the Arab world.
The origin of the use of signs to represent numbers is blurred and has merged with the origin of writing, although numerals doubtless came first. Primitive marks (lines and dots) were used to count goods and individuals for a very long time.

### Indian numerals

In the second century the Indians developed a system of notation for numbers with three major innovations:
- the decimal system;
- the use of different signs from those in the alphabet. They also had a different value according to where they were situated, and could signify a single unit, ten units, one hundred, or one thousand etc. according to the sequence in which they were written;
- the notation for zero, invented in around the sixth century.

### Arabic numerals

During the Arab conquests and eastward expansion (Sindh, 710) the Arabs adopted the Indian system. Mastering numeric writing enabled them to make spectacular developments in mathematics and scientific research (tenth century). In the twelfth century, Europe adopted Arabic numerals via Andalusia in Spain, and gradually abandoned Roman numerals.

Before Islam, the Arabs used various local ways of counting. With the emergence of Arabic writing, it became commonplace to attribute a numerical value to each letter of the alphabet.
After the blossoming of various calligraphic styles, artists in the Arab world continued to improve their calligraphic skills but ceased to make any further major innovations.

Nor did the meeting between the Arabic script and the printing press result in major graphic change. Engravers and type founders scrupulously respected existing styles, despite the technical difficulties that this represented.

It was only from the second half of the twentieth century that the need arose to adapt Arabic writing to modern means of communication and enable the Arabic language to access the most developed technologies.

Printing was invented in China in the ninth century. The process then used was xylography, or block printing using woodcuts, which meant carving out images or text (or both) in relief on pieces of wood. This technique was also used to print patterns on cloth.

In 1045 CE, Pi Sheng created movable characters in baked clay. Later these were made from tin, wood, bronze, and other materials. Printing spread rapidly to Korea and Japan.

Paper, it should be remembered, had been manufactured in China since the second century CE. Toward the end of the tenth century Chinese scrolls were replaced by books composed of sheets of paper that were folded and bound together.

Curiously, the Arabs ignored xylography at the time of their conquests, although the process was known in Samarqand in the tenth century.

Left: a wooden board used to teach writing.
Above: a printing press in the fifteenth century.
Below: a computer room in the late 1980s.
Woodblock printing (xylography) had existed in Europe since the twelfth century. With the invention of paper, all the elements came together for the reinvention of typography, which had already existed in China for centuries.

It was Gutenberg, a silversmith who made polished metal mirrors and engraved medals, who first had the idea of using a hard metal punch to create moulds forecasting type and thus created the first movable types in lead for the individual letters of the Latin alphabet (1450).

This innovation would lead to the rapid spread of learning, but Gutenberg’s invention was not always well received. Since he had used the manuscript writing style of his period, he was accused of being a forger and his printed works of being ‘artificial writing.’

Early printing in Arabic
The first printed Arabic alphabet was found in Mainz (Germany) in 1486, in an engraving that illustrated the account of a journey to Jerusalem.

Very often Christian missionaries (as in the Levant in 1482) or western diplomats (Constantinople in 1488) installed printing presses in Muslim countries.

After the Reconquest of Spain, the Catholic clergy printed religious texts in Arabic, starting in 1505, in order to convert the population back to Christianity (Pedro de Alcala). However, the first text to be composed with movable Arabic type was printed in 1514 by De Gregoirios in Fano (Italy).
Religious rivalry with the Ottoman Empire as well as intellectual curiosity led the Vatican to print the Gospels and other religious texts in Arabic, in addition to dictionaries, and grammar and scientific works by authors such as Avicenna, who wrote in Arabic.

In 1608 the Propaganda Printing House was founded in Rome and, starting in 1613, created beautiful editions in Arabic. Famous engravers and type founders produced remarkable Arabic types for the major European universities, including Paris and London: Granjon (1550), Guillaume Le Bé (1620), and William Caslon (1730).

The beauty of the Arabic texts printed at this time is a reflection of the extensive work carried out by linguists, engravers, type founders, typographers, and printers, who had to overcome countless difficulties in their work. It took several years to typeset a book in Arabic.

**The first printing presses in Arab countries**

The first book to be typeset in an Arab country was printed in 1585 by the Maronite monks of Qozhaya (Lebanon).

In Morocco, the Portuguese set up a printing press in Fez in 1520, though no Arabic work was printed there before the end of the seventeenth century.

Printing only really took off in the various Arab countries from the eighteenth century—in Egypt (1799), as well as in cities such as Aleppo (1706), Jerusalem (1780), Kerbala (1856), Mosul (1860), Baghdad (1861), and Damascus (1870).

In the Ottoman Empire, the powerful guild of calligraphers successfully opposed the introduction of the printing press until the end of the nineteenth century.
Composition in two alphabets: Gospels (Rome, 1591).

Gospels printed in Arabic (Aleppo, 1711).