INTRODUCTION

Nationale suggested that the materials used for illumination might also be distinct from those used for illustration. A copy of al-Idrisi's Geography (ms. arabe 2221) made in the Maghrib in the thirteenth century used materials and pigments not found in the other manuscripts tested. These included such colors as rose-violet, yellow ochre, and compound green, as well as white lead to brighten the colors. This manuscript was the only one of the group tested to have full-page paintings, so further work needs to be done to ascertain the distinction between illumination and illustration.

99. BN, ms. arabe 6935; Déroche, *Manuscrits du coran II*, no. 302;
101. El/2, 'Dawât.'
105. Anl, *Renaissance*, no. 34.

Part II: The Development of Arabic Script in Early Islamic Times
CHAPTER THREE

The Standardization of Arabic Script

A system of writing Arabic had already developed in pre-Islamic times. The script was derived from Aramaic, a script used to transcribe a variety of languages spoken in the Mediterranean region and west Asia. Driven by the need to administer a large empire, scribes in early Islamic times regularized and standardized this Arabic script. The desire to write down the text of the Koran, which had been revealed orally, also seems to have stimulated the development of fine calligraphy already in the seventh century. No dated manuscripts have survived from this early period, so to trace the development of Arabic calligraphy at this time, we must look to other kinds of more fixed evidence, notably papyri, coins, and inscriptions. Using dated or datable examples in these media, it is possible to follow the increasing regularization and standardization of Arabic script and the development of a style that came to be used throughout the Umayyad realm, from the Mediterranean to Central Asia, as well as a more formal rectilinear style used for manuscripts.

The origins of Arabic script

The exact origins of the Arabic system of writing are open to question. The script is ultimately derived from that used for writing Aramaic, the lingua franca of south-west Asia from early in the first millennium BCE to the time of the Arab conquest in the mid-seventh century CE. Aramaic script was used not only for Aramaic languages, such as Syriac, but also for many other types, including Iranian and Altaic languages. For many generations scholars have fiercely debated which of these languages written in Aramaic was the immediate source for Arabic script. Two main hypotheses have been put forward, and the date of the first surviving inscription in Arabic script depends in part on the author’s view of the immediate source for that script.

The older, more traditional, and more widely cited argument is that the script used for writing Arabic developed from the type of Aramaic script used by the Nabateans. The Nabateans, centered around Petra in southern Jordan, spoke Arabic but wrote in Aramaic script. Their kingdom reached its heyday in the second century CE, but Nabatean Aramaic script is also known from late inscriptions
languages, producing charts with the forms of the individual letters in different languages in adjacent columns. François Briqueul-Chatonnet has recently argued that such an approach is inadequate, because it gives priority to a script's technical qualities and individual forms rather than its general principles and aspect and because it disregards the historical context in which the script was created. On these grounds he again raised the argument for the Syriac origin of Arabic script. Briqueul-Chatonnet posited that two general traits distinguish Syriac from Nabatean. In Syriac, the letters are posed on an ideal baseline, whereas in Nabatean they are suspended from it. The proportions of the letters also differ in the two scripts: in Syriac, the letters are spread out and flattened and are usually wider than they are tall, but in Nabatean they are elongated and usually taller than they are wide. The earliest Arabic writing on papyri and monuments, she argued, shares both characteristics – position on [not below] an ideal baseline and squat shape – with Syriac.

Briqueul-Chatonnet also opted for a Syriac origin of Arabic script on historical grounds, arguing that in the centuries before the rise of Islam, Syriac was more prestigious than Nabatean. Nabatean script, she argued, had gone out of fashion by the sixth century and was used mainly for graffiti and ostraca. In the same way, other south Arabian scripts used in pre-Islamic times that were actually more suitable for writing Arabic had also fallen out of fashion and hence were not ultimately adopted for writing it. Syriac, by contrast, had blossomed in the period before the rise of Islam. Inscriptions in Syriac have been found north of Raqqā in Syria near the sites of the earliest Arabic inscriptions dating from the sixth century. Briqueul-Chatonnet therefore abandoned the al-Hira intermediary of the Syriac hypothesis, arguing in favor of a more Western source in the Christian-speaking Aramaic community that expanded in Syro-Palestine after the fall of the kingdom of Edessa in the mid-third century CE.

Other scholars have documented the well-established tradition of writing Syriac in the centuries before the rise of Islam. The earliest dated Syriac manuscript to survive (BL Add. 12150) was produced at Edessa in 411 CE and shows a well-developed calligraphic style. It is written in the script known as strangello. Several other dated manuscripts allow us to trace the development of this script until it was replaced by the setto script in the late eighth century.

Briqueul-Chatonnet's argument of a Syriac origin for the Arabic script deserves serious consideration for several reasons. She has moved the argument about script to a more sophisticated level, articulating principles and aspect, not just comparing individual graphemes or letters, and addressing the historical context. At the very least, her article suggests that the discussion about the origins of Arabic script is not closed and that the Nabatean hypothesis is not unilaterally accepted.

Whatever the immediate source, Aramaic script had to be adapted for writing Arabic. Since Arabic has more consonants than other
north-west Semitic languages, diacritical marks had to be introduced to expand the limited repertory of eighteen different graphemes, or characters, to record the twenty-eight phonemes, or sounds, used in Arabic. Furthermore, Arabic script did not maintain a monumental form, in which the letters are written separately from each other, but used only a cursive form, in which the letters are connected, and all Arabic writing is characterized by ligatures between letters.

The development of Arabic script in the seventh century

Arabic was definitely written in Arabia by the time of the Prophet Muhammad. Poets writing before and after the advent of Islam refer to writing, both directly and indirectly, and copies of their poems collected by grammarians in the late eighth and early ninth centuries contain visual mistakes that could have occurred only in transcribing a written text. Writing is also mentioned in the Koran, the message recited orally by Muhammad. The text itself is called a writing (kitab), and it is filled with technical terms about writing, such as reed pen or calamus (qalam) and tablet (lawh).13 The diverse accounts relative to Muhammad, including the Prophetic Traditions, biographies of him, and lists of his secretaries, also show that in the late sixth and early seventh centuries knowing how to write was in no way exceptional.

To explain the development of Arabic script, Estelle Whelan used the analogy of a tree trunk, itself continuously growing, from which a series of specific stylized scripts branched off independently.14 All surviving evidence, albeit scarce and piecemeal, suggests that in this early period writing in Arabic script developed two different branches, probably derived from the cursive and monumental forms of Aramaic script used in other languages: a more free-flowing style for recording transactions of daily life and a more formal style for monumental inscriptions, numismatics, and eventually manuscripts of the Koran.

We can trace the development of the everyday style from the early seventh century onward through dated papyri and graffiti.15 Adel Grohmann estimated that some sixteen thousand fragments of papyri survive from the first centuries of Islam (see Chapter 5). Most are in extremely poor condition. Unlike Greek and Latin papyri that were handed down from generation to generation, Arabic examples were typically found in the rubbish dumps of old towns, mixed with pot shards, slag, cinder, coals, rags, straw, and kitchen waste. These rubbish dumps contained a valuable type of dung (sibakh) exploited since the sixteenth century, particularly in the cultivation of cotton, and dung diggers often further damaged the papyri, tearing most of them fragmentary. The vast majority of these papyri come from Egypt, as the dry climate there insured better preservation. A few were found in Syro-Palestine, but none relate to the Hijaz or Iraq, the two areas most often identified with the development of calligraphy in this early period of Islam.

Although most Arabic papyri date from the eighth century or later, a group of some two dozen dated examples allows us to sketch the development of writing in the first century of Islam.20 The earliest (PERF 538 from the Erzherzog Rainer papyrus collection in Vienna) is a bilingual record requisitioning sixty-five sheep from the people of Isha'as ibn Hakim-bil-al in Upper Egypt, in which the troops of Abdallah ibn Jabir in 23/643-4.21 The text is written in a fairly well-developed script, with spaced lines and words composed of regularly shaped letters pointed with a generous sprinkling of dots.22 By the end of the seventh century a more uniform script had developed, probably as part of the reform of the bureaucracy carried out under the Umayyad caliph 'Abd al-Malik (r. 685-705). This standard script can be seen in official documents issued by the Umayyad chancery, such as a letter from Qurra ibn Sharik, governor of Egypt from 709 to 714 under al-Walid, to the ruler of Asht (Figure 3.1).23 The letter was part of a large cache of papyrus documents found in 1901 in Upper Egypt at the site of Aphroditos, now the village of Kom Esqaw, seven kilometers south-west of Tima.24 Some, like the one illustrated, are in Arabic; others are in Greek, still others are bilingual in Arabic-Coptic or Arabic-Greek. The letters shows the hand of a government scribe, to whom correct style was important. Literary sources frequently stress the importance of a clear and well-formed script in official documents.25 Bad handwriting could cause a petition to a high official to be rejected regardless of its contents.26 Legibility was clearly a problem in early Islamic times: Yusuf Râfî' cited a case in which a secretary in charge of correspondence for the governor of Medina misread a letter from the caliph Hisham with tragic effect: rather than count (akhbar) the city's entertainers, the governor had them castrated (ihîb).27 To avoid such mistakes, diacritical marks were used occasionally in official correspondence, as in the stroke over the miin, the third letter in the third strip, but they were not standard. Their use was recommended in disciplines such as grammar, language, poetry, and rare Traditions (jâhibî), but surviving literary papyri show that even there they were often omitted.28 Only in the tenth century did they become standard in book printing.

The most notable features of the script used in the papyri are the extensions of and between letters, as in the tail of final ya' that extends backward under the word alladhi in the second line of the second strip. Even more dramatically, in the top strip the final kaf of sharik in the second line is extended, as is the connector between ha' and mim in al-tahan in the line above.

The script used for the text in the body of official letters and documents issued by the Umayyad chancery can be distinguished from that used on the protocol of a papyrus scroll (Figure 3.2).29 The protocol was written with a brush, using broad flowing strokes and many loops and connections between letters that are not permitted in other styles. There are no dots. Despite (or perhaps because of) the
Figure 3.1 Letter on papyrus from the chancery of Qutra ibn Sharik to the sovereign of Asulh, c. 710.

Part of a cache of documents found at Aphrodisias in Upper Egypt, this letter shows the official script used by scribes in the Egyptian chancery during Umayyad times. Like contemporary monumental inscriptions, it uses elongation for emphasis and discursive strokes to clarify letters in important or potentially confusing words.

formulaic text in the protocol, the script itself is extremely individualized, possibly, as Grueender suggested, because the cryptic aspect of these cover sheets served as a mark of authenticity preventing misuse and imitation.30

The chancery script found in the letter from Qutra ibn Sharik belonged to a style that was used throughout the Umayyad realm. The same style is found, for example, in a short text, possibly from a letter, from the caliph al-Hisham (r. 724–43) to his nephew and successor al-Walid II written on a marble plaque found at the Umayyad site of Qasr al-Hayr al-Gharbi in Syria.31 This style can be taken as typical of the period, for many of the same features appear in a better preserved letter (Figure 3.2a) found in 1933 at Mt Mugh in the Zeravshan Valley of Central Asia alongside Sogdian manuscripts, a Chinese document, and various other objects. Transcribed in velvety black ink on yellowish leather, the letter is written in the name of Divastish, the last ruler of Panjikent, to the Arab amir al-Jarrah ibn 'Abdallah. It can be dated precisely because al-Jarrah was in office for seventeen months in 718-719.

Penned in the firm hand of an experienced secretary, the letter from Mt Mugh shows many of the letter shapes and conventions used elsewhere, such as long initial َّج (dal) and َّك (kaf) with an extra hook, and extended letters and connectors (all visible in Figure 3.2a) and
final ya ‘returning to the right in [Figure 3.2b]. Nevertheless, it is not as finely written as the letter on papyrus, perhaps because of the unevenness of the tanned surface. The letters are squatter and the horizontal strokes bumpy. The space between lines also varies, with wider spacing at the top, but more cramped lines near the bottom, probably because the scribe realized that he was running out of space in which to fill the sixteen lines on the single piece of leather measuring 26 by 19 cm. The scribe was also interested in speed, for he sometimes did not lift his pen. For example, he wrote medial and final ‘ayn with one fluid stroke to make an upside-down triangle [Figure 3.2c] rather than the V with antennae used elsewhere. The scribe was also intent on legibility. The names of several people – including that of Divastish, whose name is divided between the end of line two and the beginning of line three, and those of several amirs in line eight – are pointed.

Variations of the same style can be found on many of these early papyri, especially those of an official nature. Geoffrey Khan enumerated ten characteristic letter shapes of this script.50 Independent alif tends to the right at the bottom and is taller than the other vertical strokes. Dal has a little hook at the top. The body of certain letters, particularly kaf and sad, is elongated.51 The base of initial ‘ayn extends to the right, whereas medial ‘ayn is written like a V with antennae. The tail of final qaf extends downward vertically before bending to the left. It can thus be distinguished from final fa’, which is elongated in a straight line. The tail of final ya’ extends far to the right underneath the word that it ends and sometimes beyond to the previous word. Khan also called attention to several conventions used in the script on papyri, such as elongation of letters and connectors and the separation of letters in a word.

Such features are most commonly found on official documents, but typically the script used in day-to-day business correspondence and accounts was not carefully and consistently executed according to a specific standard [matba‘aqal], but rather a poorly executed unofficial script used for popular purposes [matla‘iq]. It differs from the well-written script used in state documents and literary texts of high standing, but even there, a scribe’s performance sometimes fell short of the style at which he aimed. In this sense, the script used on many papyri often reflects personal handwriting, rather than the characteristics of a given ‘school’ or style.

The evolution of a calligraphic style

The evidence from papyri, then, helps us to sketch the development of Arabic script in the early centuries of Islam. It is less helpful in tracing the development of a calligraphic style, which seems to have developed along another path, or was, using Whelan’s metaphor, another branch of the writing tree. Such a script would have been used for fine manuscripts, but we have no dated examples of such manuscripts, particularly copies of the Koran, and some scholars, notably John Wansbrough, have denied that they ever existed, thereby challenging the traditional Muslim view about the writing down of the Koran and arguing that a canonical text was established only at the end of the eighth century.52 Whelan has rebutted this argument.53 Citing forgotten witness, mainly evidence from inscriptions and scattered references in texts, she showed that already by the seventh century an established group of calligraphers [ashab al-masāhīf] penned fine copies of the Koran in the city of Medina. The specific area where these Koran manuscripts were transcribed and sold was located near the west end of Balat al-A’zam, the paved street leading west from the Prophet’s mosque to the meander [musala‘]. Whelan also collected the names of at least three people who had copied the Koran professionally there in the last quarter of the seventh century and the beginning of the eighth: Sa’d, Khalid ibn Abi’l-Hayaj, and ‘Abd al-Rahman ibn Hurmuz ibn Kaysan al-A’rāj. All her evidence leads to the conclusion that the Muslim tradition is reliable, at least in broad outline, in attributing the first codification of the Koranic text to the early Islamic period, if not specifically to the reign of the caliph ‘Uthman.54 Copies of the sacred text were needed to propagate the new faith and weld the diverse peoples of the rapidly expanding empire into a relatively unified polity, as Arabic script – like seal script in China – was a tool in fostering cultural coherence.55

Since we have no dated manuscripts or fragments to identify what this early Arabic script looked like, we have to examine ancillary sources that are dated, such as monumental inscriptions and coins. Each medium offers certain advantages, but each also has its own limitations and idiosyncrasies. Monumental inscriptions, like the texts on papyri, vary in length and formality. The vast majority are graffiti.56 Ranging in length from a few words to several lines, they were inscribed at major holy sites or along pilgrimage routes like the Darb Zubayda connecting Iraq with the shrines in Arabia. Most of these graffiti, like many of the day-to-day papyri, are not very helpful in tracing the evolution of calligraphy, as they tell us more about the development of ordinary handwriting than about the development of artistic style(s).

The longest and most important graffiti to survive from early Islamic times is the foundation text scratched in the rock near Ta’if in the Hijaz [Figure 3.3], recording the construction of a dam by the Umayyad caliph Mu’awiya in 74/677–68.57 The letters in the six-line text are well-formed, compact, and clear; fifteen of them, including the letters ba’, ta’, tha’, nun and ya’, are pointed [Figure 3.3a]. In addition to documenting the shapes of individual letters, the inscription provides evidence about the conventions used in writing longer excerpts and organizing a line or page. The words are spaced, and certain letters there, particularly dal and sad but also the final ba’ in kataba, are extended horizontally. By stretching out horizontal
The text, one of the few monumental inscriptions to survive from early Umayyad times, commemorates the construction of a dam by the Umayyad caliph al-Mu’awiyah. The engraved letters show that a squar and rectilinear script was standard in Arabia by the third quarter of the seventh century. Diacritical marks are used extensively, and words are divided between lines without regard to meaning, perhaps to enhance the symmetry and visual impact of the inscription.

Letters and connectors, the scribe ‘Amr ibn Janab varied rhythm and spacing. This combination of elongation is of fundamental importance in laying out the text in fine manuscripts of the Koran.

Words in the Ta’if inscription are divided between unconnected letters. Lines three, four, and five all end in alif, the opening letter of the word that continues on the next line. The reader was not expected to pause at the end of a line, but rather to read seamlessly from the end of one line to the beginning of the next without a break. This division in the middle of (rather than between) words also shows that decorative effects were already important at this early date, for the alif with a bent right foot written at the end of the middle lines forms a pattern balanced by the similar vertical strokes that begin lines two, three, and four [alif, ba’-alif, and two lambs, respectively].

The inscription scratched in the rock at Ta’if, like many papyri, tells us about ordinary writing, but coins provide more ample evidence showing how the written word became increasingly important as the official signifier of Islam and the caliphate over the course of the seventh century. Not only are coins numerous and well preserved, but they also have the tremendous advantage of being dated, if not to a precise year, then to the reign of a particular ruler. Issuing coins is the prerogative of the government, and thus the writing on coins represents an officially sanctioned style. The Umayyads issued coins in Syria, Egypt, and Iraq, so the numismatic evidence supplements the graffiti from Arabia. As papyri, however, the evidence from coins has limitations. Coins are conservative, for no government would wish to issue a coin that might not be accepted. The writing and iconography on coins, therefore, should be taken as the standard for the formal acceptance of certain conventions, but never the date of innovation of a new device or style.

The first Muslims continued the minting practices of the regions they had conquered, but in the late seventh century they developed their own distinctive coinage in which religious phrases became increasingly important. One of the first to appear was bism Allah ‘al-Hab [in the name of God, my lord]. Coins minted at Bishapur in Iraq in 82/699-700 introduced Muhammad rasul Allah [Muhammad is God’s prophet], a phrase that was to become the second part of the Muslim profession of faith (shahada). By 73/691-2 the phrase ‘there is no god but God alone’ (la ilah ila Allah wahdah), the first part of the profession of faith, was also included in the marginal legend. The complete profession of faith was soon accompanied by new imagery such as the standing caliph or the caliph at prayer, figures that were meant to illustrate the text and proclaim the primacy of the caliphal office. This evolution of written legends culminated in 77/697–8 with the appearance of gold coins (dinars) that are entirely epigraphic (Figure 3.4).

On these new epigraphic dinars the written word reigns supreme. The text in the obverse field proclaims the central doctrine of Islam: there is no god but God alone, without associate. The margin contains the Prophetic Mission taken from Surat al-Tawba [Koran 9:33]: Muhammad is the messenger of God who sent him with guidance and the religion of truth that he might make it supreme over all other religions. The text in the reverse field rejects the idea of the Trinity, citing Surat al-Ikhlas [Koran 112]: God is one, eternal; He does not beget nor is He begotten. The margin contains the date, the same legend that had been used on earlier types.

As the text on these epigraphic dinars (and on the silver coins issued shortly afterwards) is mainly Koranic, their inscriptions are fundamental in charting the history of Arabic calligraphy. The script shows a practiced calligraphic hand that differs from the style used in most documents, whether those issued by the chancery or those written for more quotidian purposes. The coin legends display a squar, rectilinear script like the graffiti at Ta’if. Letters descend only slightly from the uniform baseline. Alif has a foot that bends to
the right. Isolated ba' opens with a short curved stroke and ends in an open one, as in the word duriba. Medial ba’/lam is a short stroke that bisects the baseline diagonally. Dal and kaf have a sloping upper bar that ends with a short stroke. Final qa' descends below the line and then trails to the right, as in the word al-baqiq, about seven o'clock in the marginal inscription on the obverse. Final min has a small tail to the left. Final na’ is an open descending stroke. Final ya’ trails to the right under the word, as in bi-thuda and ’ala’ (at nine and five o’clock on the obverse margin, respectively) as well as fi (at eight o’clock on the reverse margin). Details like the right foot on alif, the hook on dal, and the slight bends in other strokes – features that are difficult to reproduce when engraving metal – show that the text was drawn up by a calligrapher.

Coins issued in Iraq in the early 700s had been designed to improve the legibility of both text and image, and this entire epigraphic type marks the culmination of readability and visual impact, in which all seventy letters fit on a surface less than 2 cm in diameter (smaller than an American quarter). The orientation of the marginal inscriptions has been reversed from that used on all earlier coins, both gold and silver. There, the baseline of the marginal inscription ran around the rim of the coin, and the tops of the letters faced inwards toward the figural imagery. In contrast, on the epigraphic coins, the marginal inscriptions face outward. This recirculation effects reading. To read the marginal text on earlier issues, one turned the coins clockwise, whereas to read the marginal legends on the epigraphic type, one turns them counterclockwise, thereby facilitating reading of the text in the fields, which runs from right to left. Visually, the new inward-facing baseline also sets off the text in the central fields, which, in turn, are laid out for maximum visual impact, with lines divided between words, and words and letters set symmetrically. On the obverse, for example, the distinctive scissor-like combination of lam-alif repeats at the beginning and end of line one (as well as the beginning of line three), and final ba’ (though in independent and final forms) repeats at the end of lines two and three. Exactly the same pattern occurs on the reverse: the first line begins and ends with allab, and lines two and three end with the letters lam-dal.

Such a sophisticated design took time to plan. It was needed because these new epigraphic dinars were struck to a new weight standard: rather than continuing the old one pegged to the Byzantine solidus (approximately 4.55 grams), these dinars were struck to twenty Arabic carats (approximately 4.25 grams). The new epigraphic design thus announced the metrological innovation.

Die-cutting is a specialized art, done by a die-cutter skilled in engraving metal dies. To make these epigraphic coins, the die-cutter, who could well have been illiterate, must have taken the design that the calligrapher had drawn up with pen on another support, perhaps at a larger scale, and reproduced it in mirror reverse. We can get another view of how handwritten calligraphy was transferred to a different medium at this time by looking at a contemporary architectural inscription: the long (240-meter) band of gold and blue/green glass mosaic that encircles both faces of the inner façade of the Dome of the Rock in Jerusalem (Figure 3.5).21 The inscription is preserved in its entirety, except at the end where the ‘Abbasid caliph al-Ma’mun (r. 813–33) had his name inserted in place of that of the original patron, the Umayyad caliph Abd al-Malik. Al-Ma’mun retained, nevertheless, the original date of 72/691–2. The main body of the text consists of brief invocations combined with a series of passages taken from the Koran, all dealing with the same theme of challenging Christian dogma in the main pilgrimage city for Christians.

Since Oleg Grabar’s landmark study of the Dome of the Rock,45 most scholars have accepted the importance of the inscription in explaining the meaning and function of the building, but only a few have paid attention to its importance in tracing the development of Arabic script. Yet studying it in detail shows its close connection
The text is written in the style typical of Umayyad inscriptions. The last line shows that diacritical marks were used at this early date, and the palmette at the bottom suggests the type of ornament that might have been used on contemporary Koran manuscripts.

to calligraphy. It confirms, for example, that diacritical marks were used from earliest times. Thin strokes accompany at least ninety-two letters, all but three in the text on the inner face, presumably because that part of the inscription was more brightly lit and hence more visible. The section of the band from the north-east side illustrated in figure 3.5, for example, contains the phrases lahu ma fi'l-samawat wa-l-arid wa-kafa billah watilkan lan yustanka fi [l-mashu ...] [To Him belongs all that is in the heavens and in the earth. God suffices for a guardian. The Messiah will not disdain to be a servant of God] from Koran 4:171–2. Seven letters are marked by thin diacritical strokes.

Similar marks were added to five milestones erected in the name of ‘Abd al-Malik. Four undated examples discovered in Palestine in the nineteenth century mark the number of miles from Damascus or Jerusalem.77 This one (figure 3.6) records that it is eight miles from Jerusalem.88 A fifteenth milestone discovered in the 1960s describes the leveling of a difficult pass on the road from Damascus to Jerusalem in Muharram [7], May–June 692.89 Its date allows us to date the group c. 692. The generic part of the text on the milestones, the first six lines with the name of the caliph, could have been prepared in advance, but when carving the last lines giving the specific distance from Jerusalem, the carver added diacritical strokes to the letters thā', nun, and yā' in the word thamaniya (eight) in the last line to ensure the correct reading.

The contemporary inscriptions on the milestones (figure 3.6) and the Dome of the Rock (figure 3.5) also tell us about the decoration that accompanied this early script. The bottom of the milestone is filled by a scroll that unfolds in two directions from a central palmette. It shows that already by the end of the seventh century decorative devices were used to fill empty spaces and suggests the type of decorative rubrics that might have been used to decorate fancy manuscripts of the Koran made in early Islamic times. Similarly, the sections of text in the mosaic inscription at the Dome of the Rock are divided by simple ornaments in the shape of rosettes or stars inscribed in squares. These ornaments call to mind the markers used to divide groups of verses in later manuscripts of the Koran and suggest that verse markers were already used in manuscripts penned in early Islamic times.

The mosaic inscription at the Dome of the Rock also gives clear evidence about the archaic fashion of vocalization and pointing. The script used is one of the so-called scriptores defectivae, in which certain vowels, such as the long alif in salam, are omitted. In the Dome of the Rock inscription, alif is regularly omitted in hortative phrases such as ya alif or ya ayah, and words such as wahada and al-samawat are written in the scriptio defectiva form without the long alif, as in figure 3.5. In addition, the letter qaf is repeatedly pointed in the archaic style. Now conventionally written with two dots above the letters, qaf is pointed here with one stroke below the letter to differentiate it from fa', which is pointed with one stroke above the letter.

Looking at a detail of the mosaic inscription on the Dome of the Rock (figure 3.7) shows the skilled hand of a calligrapher in designing
To clarify the role of the calligrapher at the Dome of the Rock, we need to examine the way mosaics are executed. Mosaics were a standard technique of decoration in Byzantine times, and scholars have established the successive steps used in that tradition.

Since the mosaics at the Dome of the Rock are done in Byzantine style, most likely by Byzantine-trained craftsmen, we can safely assume that a similar method was used there. First, the interior of a building was coated with a thick layer of plaster that covered up the inconsistencies of the wall surface. This was covered by a second finer layer of plaster, on which the artist sketched out the scheme of decoration. This type of sketch is often called a sinopia, because it was executed in the red earth pigment that was traditionally sold in Sinop, a town on the southern coast of the Black Sea. A final, thin layer of plaster served as the setting bed for the mosaic tesserae. Because the tesserae had to be pressed into the plaster before it hardened, the third coat was laid in daily sections, often termed giornati. Although the size of this area varied in different climates and surfaces of a building, the typical giornata established for the eleventh-century cathedral of St. Sophia in Kiev was approximately two square meters. On this third layer the artist rapidly painted the design he intended to cover with mosaic that day. Should any platter have been left unused at the end of the day, he probably cut it away before starting afresh the next day.

Marguerite van Berchem’s examination of the mosaics at the Dome of the Rock confirmed the presence of a sinopia on the soft layer of plaster there. The artist used red under the gold tesserae, the ones used for the inscription, and dark grey underneath the blue/green ground. The strokes for the letters, measure some 5 cm, the same height as those in a protocol (Figure 2.5), and were probably drawn using a similar brush, in the same way that Roman inscriptions, including the serifs, were first written with a brush and then cut in stone.

Materials and technique prove that the inscription was the most important part of the band ringing the arcade. Close-up photographs of the Dome of the Rock show that the mosaicist first set the coves that formed the outlines of the letters, then filled the interiors, and finally surrounded the letters with the blue/green ground. He set the letters in gold tesserae, the most expensive part of an already expensive medium. He also set the gold tesserae using a more time-consuming (and hence costly) technique: the gold (and elsewhere the silver) tesserae are laboriously set at a 90° angle to reflect the light.

The person who drew the inscription on the plaster at the Dome of the Rock was therefore a highly talented and specialized artist. We can speculate about his identity. The mosaicist himself could not have designed the inscription, for he was probably a Greek-speaking Christian who had trained on nearby monuments such as the Church of the Nativity in Bethlehem. Nasser Rabbat suggested that Raja’
ibn Hayya al-Kindi, one of the two men charged with supervising work at the Dome of the Rock, may have drawn up the text.\footnote{2} A theologian, transmitter of hadith (\textit{muhaddith}), and 	extit{éménice grise} of the period,\footnote{3} he also served as administrator in charge of accounts. He may have stipulated the content of the inscription, but there is no evidence that he was a copist.

Rather, the evidence of the mosaic inscription itself shows that it was designed by a skilled calligrapher. This was a common practice in early Islamic times. According to the tenth-century chronicler Ibn al-Nadim, the Medinese calligrapher Khalid ibn Abi'l-Hayayn transcribed the inscriptions of the Koran, poems, and reports for the Umayyad caliphs al-Walid (r. 705-15) and Umair II ibn 'Abd al-'Aziz (r. 717-26) and also designed the gold mosaic inscriptions for the Mosque of Medina, restored under al-Walid c. 953/766.\footnote{4} Since there is no evidence of a group of copists working in Palestine at this time, Whelan suggested that he or one of his contemporaries working in Medina designed the inscriptions for the Dome of the Rock.\footnote{5} The mosaic inscription on the Dome of the Rock would then represent the original \textit{mushaf} script devised at Medina. Such a calligrapher would have been brought to the site, for the designs must have been sketched in situ as they exactly fit the space allotted to them.\footnote{6}

The writing in letters on papyri and leather, the graffiti on walls and pots, sherds, the legends on coins, and the inscriptions on architecture, then, show how a calligraphic script developed during the seventh century and beginning of the eighth. At the same time professional copists undoubtedly produced fine manuscripts of the Koran, but no dated examples survive. In the following chapter we shall examine different methodology to try to group the many fragments from these early manuscripts and trace how calligraphic styles developed in the early centuries of Islam.

\textbf{Notes}


9. A good example is Giovanni Garbini's chart, reproduced in Peter T. Daniels and William Bright, \textit{The World's Writing Systems} [New York: Oxford University Press, 1996], table 5, showing the various scripts that are derived from Aramaic script, such as square Hebrew, Palmyrene, Nabatean, and Ancient Arabic. This is the methodology used by Gruendler, \textit{Development of the Arabic Scripts}, the most recent study of the origins of the Arabic script.


12. The dated example of a Syriac manuscript in \textit{serto}, Bl. Add. 1445, is dated 790 CE.

13. Gruendler, for example, in her most recent discussion of the formation of pre-Islamic Arabic script (\textit{El} 1:138), sticks to her original position in that 'the individual Arabic graphemes descend through Nabatean from the west Semitic alphabet,' but accepts that the general proportions 'suggest Syriac calligraphic influence.' Alan Jones, \textit{The Word Made Visible: Arabic Script and the Committing of the Qur'an to Writing}, in \textit{Texts, Documents and Artifacts: Islamic Studies in Honour of D. S. Richards}, ed. Chase E. Robinson [Leiden, 2005], 7, suggests that other influences from South Arabia must be involved to explain such features as the differentiation in Arabic between \textit{dal} and \textit{dau}, a difference lacking in Nabatean, Syriac, and Palmyrene.

14. F. Keel, \textit{The Use of Writing in the Preservation of Ancient Arabic Poetry}, in \textit{Alabamna: Studies in Honour of Edward Gwonville Browne} [Cambridge, 1923], Jones, \textit{The Word Made Visible}. For an example of such a metaphor by Salama ibn Jandal, a poet who flourished in the middle of the sixth century, see Chapter 5 and Figure 5.10.

15. The Koran uses the term \textit{khit} 261 times, not only to describe itself but also to refer to earlier scriptures. See the thoughtful article by David
expendition of 1936–7. C. J. Kraemer, *Excavations at Nessana III* (Princeton, 1958) had reproduced only one of them, a requisition of taxes from the governor dated 54/4754, drawn by Gruendler, *Development of the Arabic Scripts*, p. 158. Her P14 comprised the Greek-Arabic esnagia found at Aphrodito governor in the name of the Unayyad governor of Egypt, Quara ibn Shakir (of which she listed eight), and her P15 comprised letters from Quara to Basil, the Coptic patriarch (of which she listed fourteen).


28. Six letters (hafiza, kha, dha, shi, and zuul) are dotted, though they also occur without dots.


30. The documents are now scattered in collections in Heidelberg, St. Petersburg, Chicago, Cairo, and Paris. They form entry P14 in Gruendler, *Development of the Arabic Scripts*.


35. Some modern authors have given this script a special name. In his catalogue of the protocols in the Rainer collection, Grohmann called it *jall* (cited in Gruendler, *Development of the Arabic Scripts*, no. 198) and connected it to the script used for large copies of the Koran, but this comparison does not hold. Others have called it tumar, the Arabic word derived from the Greek tōnūrion (see Chapter 2).


39. Grohmann, *Arabic Papyri*, 3. Khan observes (*Bills, Letters and Deeds*, n. 2, p. 21), this figure refers only to moderately well-preserved documents. The total number of extant papyrus fragments with Arabic writing is far higher.

40. Working from a list prepared by Grohmann (*The Problem of Dating Early Qu’arans*, *Der Islam* 33 (1958): 243–51), Gruendler (*Development of the Arabic Scripts*, 21–8) assembled a list of twenty-three papyri, including two graffiti on stone from Qasr Kharrana dated 92/711 (his P17), a letter on leather from Mq Mugh (his P32, see Figure 3.3), and an undated palimpsest (her P33). Gruendler assigned a single number to groups of dated papyri found at the same site and dealing with the same subject. For example, she assigned the number P4 to the group of thirteen papyri, mostly esnagia (announcements of taxes owed by a local community) dating to the period 53–70 (692–89), that was discovered at ‘Awja al-Hafir (Nessana) near Be‘rêmenah by the H. Dunscombe Coll...
36. Writing in the tenth century, our earliest source, Ibn al-Nadîm, The 
Khalid ibn Abî Huyayya was the first to transcribe copies of the Korâ 
during the reign of al-Walîd, thereby setting the start of the tradition at 
the beginning of the eighth century.

37. See Chapter 1 and note 8 for references about the standardization of 
Chinese script.

38. Hoyland, Early Arabic Inscriptions, 77-8, estimated that there were 
thousands of such graffiti etched on rocks throughout the central 
Islamic lands from the 630/650 onwards. See also Saad A. al-Rashid, 
Durâb Zubaydah: The Pilgrimage Road from Kofa to Mecca (Riyadh, 
1986) and Robert G. Hoyland, Arabia and the Arabs: From the Bronze 
Age to the Coming of Islam [London and New York, 2001].

39. George C. Miles, 'Early Islamic Inscriptions Near Ta‘lî in the Hijaz', 
Journal of Near Eastern Studies 7 (1948): 336-42; Grundel, 
Development of the Arabic Scripts, 41. The site includes other graffiti, 
including one in a similar style with Koran 2:85 included by 'Abdallâh ibn 
Ta‘minâ, whose picture is now available on the web at http://www. 
islamic-awareness.org/History/Islam/Inscriptions/ muwawwa.com. I 
thank Jeff Spurr for this reference. This photograph was taken by Carl 
Twichell, an American geologist who worked in the Yemen in 1926 and 
then from 1931 undertook a systematic geological survey of Saudi 
Arabia. His extensive photographic record includes Yemen and Arabia 
plus the work of Charles Crater and continues up to the 1950s. His 
photographs are now stored at the Harvard Semitic Museum: 
Photographic Archives.

40. There is a vast bibliography on early Islamic coinage. The classic 
works are Walker’s catalogue of the coins in the British Museum: 
Catalogue of the Arab-Sasanian Coins, Catalogue of the Muhammadan 
Coins in the British Museum (London, 1941) and Arab-Byzantine and 
Post-Reform Umayyad Coins, Catalogue of the Muhammadan Coins in the 
British Museum (London, 1956). A more recent monograph based on 
the collection in the Ashmolean Museum is S. Album and T. 
Goodwin, Early Islamic Coinage, Syllable of Islamic Coins in the 
Numismatics in Byzantium', in Byzantine Art and Numismatics in 
collection issued under 'Abd al-Malik. See also Sheila S. Blair, 'What is the Date of the 
[Oxford, 1999], 59-88, and the color plates of the dinars in Jonathan 
Bloom and Sheila Blair, Islamic Art, Art and Ideas [London, 1997], 
and the Figural Coinage of the Early Marwanids,’ in Bâyi‘ al-Mâqqâl: 
Islamic Art 9 [Oxford, 1999], 223-71, and "'Mihrib and ‘Anza’ or 
'Sacrifices and Spear'? A Reconsideration of an Early Marwanid Silver 
Drachm" (forthcoming) showed that these experiments in epigraphic 
coinage started already under the Umayyad government of 
Iraq, Bishr ibn Marwa‘. Many of the silver coins (drachms) issued in 
the east are illustrated in Malek Ibrâhîm Mochiri, Arab-Sasanian Civil War 
Coinage: Mainz, 1982. See also Jeremy Johns, Coins and 

41. The usefulness of coin legends is comprised by their brevity, as the 
short texts do not show all possible variations of letter shapes and combinations.

42. Phillip Grierson, 'The Monetary Reforms of 'Abd al-Malik,' Journal of 
The Economic and Social History of the Orient 3 (1966): 241-64.

43. The skill of this design is also clear when one compares the legends on 
this coin with others issued in the following years, many available in the 
on-line database of the American Numismatic Society, available at 
http://www.amnumsoc.org/search/. The script on the later coins is not 
neatly as handsome. The spacing is irregular and the letter shapes are 
weighty. They seem to be copies by less expert hands. A study of the 
epigraphy on these coins might repay further study, as is the case with 
Luke Treadwell’s careful studies of their figural iconography; Treadwell, 
'Orans Drachms,’ Treadwell, ‘‘Mihrib and ‘Anza’ or ‘Sacrifices and 
Spears’’

44. The classic publication of the building is K. A. C. Creswell, Early 
The inscription was first read by Max van Berchem, Matériaux pour un 
Corpus Inscriptionum Arabiscarum II: Syrie du Sud: Jerusalem, 
Mémorial de l’Institut Français Archéologique du Caire (Cairo, 1930-71), 
n. 215 and then re-examined by Christel Kessler, 'Abd al-Malik’s 
Inscription in the Dome of the Rock: A Reconsideration,’ Journal of the 

45. Oleg Grabar, 'The Umayyad Dome of the Rock in Jerusalem,’ Ars 

46. In addition to Kessler, 'Abd al-Malik’s Inscription in the Dome of the 
Rock,’ see Whelan, ‘Forgotten Witness.

47. C. E. Boaworth, ‘Râ’is Ibn Haywa al-Kântî and the Umayyad Caliphs,’ 
Islamic Quarterly 16 (1972): 36-80.

48. Al-Nadîm, Fihrist, 11. Ibn al-Nadîm also describes Khalid as ‘the man 
at the beginning of [Islam] first wrote copies of the Qur'an, being 
honored for the beauty of his penmanship.

49. Whelan, ‘Forgotten Witness.'
DEVELOPMENT OF ARABIC SCRIPT IN EARLY ISLAMIC TIMES

61. If we take the estimate of 2 square meters per day for the typical ginai
neto used at Kiev, then it would have taken some thirty days to execute
the mosaics in a long band around the Dome of the Rock, based on an
estimation of 240 meters in length and some 33 cm high.

CHAPTER FOUR

Early Manuscripts of the Koran

The most familiar calligraphic specimens that survive from early
Islamic times comprise fragments from Koran manuscripts copied on
parchment in various rectilinear scripts. These codices are known in
Arabic as masahif (sing. mawlad), from sahiha (pl. sahih), leaf or page
in a book. Nearly all of these codices have been broken into fragments
of individual leaves, which are now scattered in museums and
private collections around the world. Already prized in medieval
times, many of these early manuscripts and fragments were pre-
served in mosques, as in the spectacular cache discovered recently in
the Great Mosque at San'a in the Yemen. In 1971 heavy rains caused
the west wall to collapse and when it was rebuilt the following
year, the space between the ceiling and the roof was found to contain
a treasure of written documents, including some forty thousand frag-
ments from more than a thousand Koran manuscripts, seven hundred
on parchment in addition to another three hundred and fifty to four
hundred on paper. They were probably saved because they contained
God's word, much as orthodox Jews preserve fragmentary documents
but they bear God's name.

In addition to the Yemeni hoard, François Déroche has identified
kaves from some three hundred parchment manuscripts. Many are
now in the Museum of Turkish and Islamic Art, which has probably
the largest collection of early Islamic manuscripts and fragments,
amounting to over two hundred thousand folios. Many of these had
been stored in the courtyard of the Great Mosque of Damascus in Syria
until the disastrous fire there at the end of the nineteenth century. For
mystic purposes, the manuscripts were then removed to Istanbul, capital
of the Ottomans who ruled Syria at the time. The finest went to the
Topkapi Library, the rest to the Evkaf Museum [literally the Museum
of Pious Endowments], later renamed the Museum of Turkish and
Islamic Art. Another large collection of fragments preserved at the
Mosque of 'Amr in Fustat is now in the National Library [Dar
Al-Kutub] in Cairo. Déroche has worked extensively on these early
parchment manuscripts of the Koran, and much of what we know
about methods of production is the result of his prodigious research.

Shrines were also repositories for fine Koran manuscripts.
Manuscripts from the Dome of the Rock in Jerusalem, for example,