CHAPTER THREE

On Calligraphy and Proportion

Beneath the historical growth of calligraphy lies the question of its meaning. By contrast with the tangible evidence of manuscripts, we are here dealing with something of a more elusive nature. A fundamental difficulty arises from the lack of Arabic sources that address this subject in any direct manner until the tenth century. Yet it is possible, by considering both content and context, to shed some light on the rationale behind the geometrical codification of the Qur'anic page and its implications.

The architecture of the page

The rise of Kufic was, as we have seen, intimately related to Umayyad architectural programmes, notably at the Dome of the Rock. This building's architects belonged to a Late Antique building tradition that finds its roots in the Classical period. In the Ten Books on Architecture, the only Classical treatise to survive on this subject, Marcus Vitruvius Pollio (c. 75-25 BC) writes:

Eurhythmy is beauty and fitness in the adjustments of the members. This is found when the members of a work are of a height suited to their breadth, of a breadth suited to their length and, in a word, when they all correspond symmetrically. Symmetry is the proper agreement between the members of the work itself, and relation between the different parts and the whole general scheme, in accordance with a certain part selected as standard.¹

This standard part, Vitruvius adds, can be selected from 'the thickness of a column, from a triglyph, or even from a module.' The principle of 'order' thus stems from 'the selection of modules from the members of the work itself and, starting from these individual
parts of members, constructing the whole work to correspond. The analogy with the Qur’anic page, where the thickness of the pen simply replaces that of the triglyph or column, is striking in its exactitude. This correspondence may be less fortuitous than it at first appears.

The sense of harmony that one feels upon entering the Dome of the Rock has been expressed by many visitors, medieval and modern. The reconstruction of its original design is an arduous task because here, as in almost any building, several apparently viable schemes can 'fit.' The Parthenon in Athens and the Pyramid of Giza have thus been the subject of conflicting interpretations for well over a century. Likewise, different schemes have been put forward for the Dome of the Rock. Rather than enter into detail, it will be sufficient, for our present purposes, to outline some of the design’s most basic elements.

At the heart of both the ground plan and elevation lies the same cubical cylinder (drawn in red on Figure 65). In the elevation, it defines the width and height of the drum before giving rise to the dome, whereas the ground plan is based on a double octagon centred on the cylinder’s circular base. The underlying figure, the double square with circle, can be obtained through several different, but geometrically equivalent, methods (I have drawn it here, with circles, but straight lines could equally have been used). It is conducive to a potentially infinite outward growth from the central circle and square onto a succession of larger circles and squares. The ground plan and elevation are thus based on a proportional expansion from the core area around the sacred rock.

In Ancient terms, the monument could be said to have ‘order’, ‘eurhythm’ and ‘symmetry.’ Judging from the published material, the idea of a module seems applicable: for example, the lintel height is approximately equal to the column width at the base. Architecturally, the Dome of the Rock was heir to an early Christian building type with a centralized design: the martyrium. Like the basilica, the martyrium finds its roots in the late Roman period, and several modern studies of surviving buildings have suggested that they were based on proportional principles. However, these attempts are hindered by the methodological difficulty evoked above. We are lucky to possess, in these circumstances, descriptions which can inform us about contemporary perceptions of architectural design. Choricius,
the rhetorician we have cited earlier, writes about the church of Saint Sergius at Gaza, a domed octagonal building:

[The columns] display a uniform harmony both in themselves and in their relation to each other ... Nothing here outdoes its opposite, all the elements face each other in equal and symmetrical form.8

Around 536–48, he observed about the recently dedicated basilica of Saint Stephen, also at Gaza:

Its width is such as the length requires, its length is dictated by the width, and the height of the roof proportionate to both. This, namely the proportion of the fabric, is its first and greatest glory.9

In De aedificiis (c. 554), Procopius of Caesarea (a historian) thus evokes the church of Hagia Sophia, in Constantinople:

Its breadth and length have been so fittingly proportioned that it may without propriety be described as being both very long and extremely broad.10

Evagrius (a lawyer) wrote another account of Hagia Sophia after its dome had collapsed in 558 and been rebuilt in 563. Having praised its 'wonderfully great proportions', he sets out to give several of its dimensions 'in order to make clearer the wonderful qualities of this building.' Despite some difficulties of interpretation, his measurements appear to be genuine;11 but they provide an idea of scale rather than an understanding of the design. Evagrius notably omits the building's most essential element: the central circle, with its 100-foot diameter, which lies at the heart of the ground plan and is used again in the elevation. This raises the question of our texts' relation to architectural practice.12

In these and contemporary descriptions, the geometrical jargon of the architects is frequently cited in relation to structure, but it appears as relatively alien to the writers themselves. Thus Choricius writes about the dome of Saint Sergius at Gaza:

So as not to disdain the art of the architects, we may say, as they would, that a segment of a cylinder has been set up vertically on the ground and that it is surrounded by the quarter of a hollow sphere.13

At Hagia Sophia, Procopius twice recalls the jargon of these 'specialists',14 as does Agathias (c. 531–80) in his discussion of the rebuilt dome.15 Paulus Silentiarius, in a poem for the same church's rededication (c. 563), also says about 'triple spaces of circles cut in half': 'Men of the craft, in their technical language, call these crowning parts conches.'16 These authors seem to have had more or less direct points of contact with the architects, and were thus able to learn some of their vocabulary. One can detect in gradation of architectural knowledge from writer to writer, which tends towards the terminology of the craft itself. And so it is with proportion: Choricius, again, reveals a relative mastery of the underlying concepts by referring not only to 'symmetry', but also to the proper arrangement of the columns and their relation to each other (in Classical architecture, the columns and intercolumniation were based on proportional principles).17 Evagrius, by contrast, only uses 'proportion' as a general term for 'harmony'. Procopius, with his awareness of the proportioning of width and breadth, lies between these two extremes. The sources, again, seem to reflect the practice of the craft, which was more or less clearly understood by each individual author.

One further testimony can bring us somewhat closer to the actual design process. In a letter to the bishop of Iconium (modern Konya), Saint Gregory of Nyssa (c. 335–94) presents his plan to build a cruciform martyrium in his city, offering his correspondent a detailed outline of its structure.18 At the core of the building, he says, lies a regular octagon with sides 8 cubits long inscribed in a circle. Four of these sides extend into rectangular bays in a proportion of 3:2 (their length is therefore equal to 12 cubits). The quarter-circles that also stem from the inner octagon are 8 cubits in diameter. The thickness of the external walls is 3 feet.19 The elevation starts, above the arches, with an octagonal wall of cubes high 'for the due proportion of the superimposed windows'.20 The height of the whole building is proportioned to its width in an unspecified manner, and topped with a conical roof, the size of which is not given. This description is accurate enough to attempt a sketch of the ground plan (Figure 64).21

The formal features of the building closely echo those of surviving monuments, like the martyrium of Qa‘at Sem‘an in Syria (c. 480–90).22
Rather than being an observer’s account, this text appears to reflect the collaboration between Gregory and the architects, which relates it to the very fabric of the building. It shows that simple ratios were indeed used in architectural design; that proportional principles inherited from the Classical period were perpetuated; and that, if the need arose, a non-specialist could become acquainted with them. A comparable dynamic may have been at play among craftsmen at the Dome of the Rock. The layout of its mosaic inscription resulted, as we have seen, from a close collaboration between calligraphers and mosaicsists, which probably lies at the root of the script’s interline codification. Likewise, when it came to manuscripts, an architectural rationale seems to have been applied to the layout. This is primarily reflected in the formal construction of the page, to which we have already alluded; the rectangular grids that were placed at the basis of Qur’anic illumination also resonate with the preparatory work of geometrical mosaic and architectural design (Figure 65).  

Moreover, the Kufic tradition was pervaded by a remarkable awareness of vision. Scribes used a technique that allowed them to write highly accurate pages without leaving any ruling traces that would disturb their visual order. In some of the Hijazi and early Kufic manuscripts that were ruled, we also see that the grid extends to the height of one line above the first line of text. This additional ruling is, technically speaking, unnecessary; the top baseline would in itself be sufficient to obtain a regular rectangular layout, as in Greek, Syriac or Coptic manuscripts. It seems to reflect a concern for the adherence of the calligraphy to the text box rectangle, as confirmed by other aspects of Kufic layout. The lines begin in a
rigorous vertical alignment; in order to equal them out at the end, two special techniques were introduced: the line-end fillers and horizontal elongation of the letters (mashq).26

Kufic was thus underpinned, from its very origins, by close attention to the visual impact of calligraphy, its geometrical consistency and regular adherence to the proportioned text box.27 Such concerns were not only absent from Hijazi, but also from earlier scribal traditions. They were, on the other hand, part and parcel of Classical architecture. Vitruvius, for example, writes that at its top, a column should normally have a thickness equal to five-sixths of its value at the base.28 Diminution, he explains, was meant as an aesthetic adjustment to natural ocular distortion:

For the eye is always in search for beauty, and if we do not gratify its desire for pleasure by a proportionate enlargement in these measures, and thus make compensation for ocular deception, a clumsy and awkward appearance will be presented to the beholder.29

Underlying this passage is an awareness of the impact of the well-proportioned object on the viewer’s soul; elsewhere, Vitruvius also says that beauty is reached ‘when the appearance of the work is pleasing and in good taste, and when its members are in due proportion according to correct principles of symmetry.’30 A similar perception of architecture was still commonly held in Late Antiquity: it underlies the early Christian descriptions cited above without the need to be explicitly stated – except, for example, when Procopius writes that Hagia Sophia ‘boasts ineffable beauty, for it subtly combines its mass with the harmony of its proportions.’31 The same basic ideas probably continued to exist among architects of the early Umayyad period.32 Kufic thus appears to have been based, in its founding principles, on a literal ‘architecture of the page’: the transposition of architectural principles to the small and flat surface of parchment leaves. These principles may have been spelled out, in the early stages, as a few simple sentences shared by craftsmen, without philosophical elaboration. But they were also backed up by a surviving trickle of intellectual substance.

Proportion in Plato’s Timaeus

Geometry and proportion were perceived, at least since the days of Plato, as eminent sources of beauty. This worldview was upheld in the Christianized world of Late Antiquity and reappeared in some of the earliest Arabic scientific writings. The codification of Kufic emerged in the intervening period, in a context where some of the underlying ideas were still being transmitted in texts. Let us, first of all, try to understand the significance of these notions in an Ancient perspective.

Before the days of Plato, the Greeks made an extraordinary discovery: musical consonance was based on simple numerical ratios, the most fundamental of which were 1:1 (the unison), 9:8 (the tone), 4:3 (the fourth), 3:2 (the fifth) and 2:1 (the octave). These observations have traditionally been attributed to Pythagoras; they certainly left a deep imprint on the Pythagorean school.33 Thus there emerged the idea that, beyond their quantitative value, number and proportion represented an absolute reality, related to higher spheres of being. Beyond musicology, proportion and numerical ratios entered such diverse fields of science as astronomy (in the relation between the heavenly spheres), anatomy (the proportions of the human body) and medicine (the balance between the four qualities and humours).

The earliest detailed discussion of these notions and their wider implications was offered by Plato in Timaeus, his cosmological dialogue, which would also become one of his best known works in early Islam.34 Its stated purpose is to provide a ‘likely account’ of how the divine craftsman (the Demiurge) came to shape what had no order – the initial chaos of creation – into harmonious order. This, Plato writes, He began to do by relating each small part to the whole through the ‘best bond’, which ‘really and truly makes a unity of itself together with the things bonded by it’: proportion (§31c).35 In the microcosm, it was notably used to link the four elements (fire, earth, air and water), making the universe a ‘symphony of proportion’ (§32c). In turn, the macrocosm was given the geometrical shape that is ‘most complete and most like itself’: the sphere (§33b). The God placed the world’s soul at the centre of this sphere and covered the whole body outside with it.
Of what substance was the world’s soul made? Initially, there were three mixtures of divisible and indivisible essences: Being, Sameness, and Difference—a distinction which echoes the Ancient cognitive principle, ‘like knows like.’ The Creator made them into a single mixture, which He redrew ‘into as many parts as His task required, each part remaining a mixture of the Same, the Different, and of Being’ (§35b). The relationships between these parts were ruled by a series of numerical ratios inspired by the musical scale, which Plato explains in great detail (§§35b–36b). The underlying conception of proportion was thus ultimately derived from music. The Demiurge then created the lesser gods and prepared the substance with which they were to beget living things. Although He used the same ingredients as previously, ‘these were no longer invariably and constantly pure, but of a second and third grade of purity.’

When He had compounded it all, He divided the mixture into a number of souls equal to the number of the stars and assigned each soul to a star. He mounted each soul in a carriage, as it were, and showed it the nature of the universe (§§41d–c).

Man, having been made from a substance of lesser purity than the cosmos, was imperfect, but at the same time carried within him the distant imprint of divine perfection. At birth, the descent of the soul into the body disrupted its inner revolutions: ‘[the souls] twisted every which way the three intervals of the double and the three of the triple, as well as the middle terms of the ratios of 3:2, 4:3 and 9:8 that connect them’ (§43d). Hence the affinity between our perception of the universe and the deeper layers of our being:

For there is a kinship between them, even though our revolutions are disturbed, whereas the universal orbits are undisturbed. So once we have come to know them and to share in the ability to make correct calculations according to nature, we should stabilize the straying revolutions within ourselves by imitating the completely unstraying revolutions of the God (§47c).

Sound and hearing are, in this perspective, channels through which the soul can be attuned to its original state by the effect of harmony:

Harmony, whose movements are akin to the orbits within our souls, is a gift of the Muses ... to bring order to any orbit in our souls that has become unharmonized (§47d).

Beside hearing, Plato underlines the importance of sight, which he says has ‘proved to be a source of supreme benefit to us’ (§47a). Elsewhere, he explains that the head was modelled upon the universe and that the eyes, linking the fire of the soul to that of the cosmos, were the first organs to be fashioned by the gods (§45b). If the body, as he later explains, can be cured through a correct balance of foodstuffs, so the soul will benefit from the perception of proportioned objects. Geometry and proportion, in this perspective, will have a profound impact on the beholder.

**Artisans and intellectual circles in early Islamic times**

In the first centuries of the Christian era, *Timaeus* was commented upon and discussed by several of the last towering figures of Ancient science, such as Plutarch (c. 45–125), Nicomachus of Gerasa (late first to early second century), Galen (second century) and Proclus (c. 410–485). These works and the original dialogue would all become known in early Islam (Galen’s paraphrase of *Timaeus* is, for instance, preserved only in Arabic). By the seventh century, this living tradition had all but disappeared, largely as a result of hostile Christian policies towards ‘pagan’ learning, which intensified with the reign of Justinian (527–65). Yet in the period to the rise of Islam, Classical learning and books were relatively well preserved in Syria, Palestine and Egypt, and Alexandria in particular remained an active intellectual centre. The translation into Syriac of Greek works on logic, grammar, then philosophy and science which had begun around the fifth century, also reached its peak towards the time of the Muslim conquest.

In the early years of Mu’awiya’s reign as caliph, *Timaeus* was directly cited by one Syriac author, Severus Sebokht (d. 667), who originally came from Nisibis, was a monk and then bishop at the convent of Qenneshre, on the northern Euphrates. His scientific treatises show familiarity with Aristotle, Theon of Alexandria and Ptolemy, and even suggest a knowledge of Indian arithmetics; among their diverse subjects are the astrolabe, geography, climatology and astronomy.
In an epistle of 662, Severus, irritated by the self-sufficiency of the Greeks, also quoted the opening of Plato’s work (§§22b–c), where an Egyptian priest says to Solon that they are ‘ever children’. This suggests that the original text, or at least part thereof, was known in Syriac circles at that date.

One of Severus’s disciples, Jacob of Edessa (d. 708), who was also educated at Alexandria, reached the peak of his career in the reigns of 'Abd al-Malik and al-Walid. Jacob is best known as the author of a grammar which expounded a new Syriac vocalization system – intriguingly, at about the same time that red dots were being introduced for the same purpose in Arabic. Another of his works, the Hexameron, was composed towards the end of his life. In it, he presented a scheme of creation which drew heavily on Ancient science, comparing the earth to a large palace or city built by an architect. In the chapter on ‘man, whom God created in his own image, crafting him like a wonderful macrocosm within this microcosm [i.e. the body’), he also portrays the human body as an ‘elevated and solid tower’ or a ‘palace’, being the magnificent work of the divine ‘architect’ or ‘artist’. These scattered fragments of evidence show that something of the tradition heralded by Timaeus was being perpetuated at the time of the Arabic script’s codification. Whether it also reached the realms of artisans may hardly be known, but we can perceive the continuing relevance of the underlying worldview in the society ruled by the Umayyads.

As the art of calligraphy developed in the eighth and ninth centuries, so did the body of Ancient knowledge about proportion and sense perception that was translated into Arabic. The relationship, if any, between these two developments remains elusive. It seems plausible that many calligraphers practised their art as a purely technical skill acquired during their training. This must have been particularly true of Muslim traditionalists who rejected innovations related to the form of the Qur’an and tended to adopt a hostile stance towards the Classical heritage. Yet, given the lack of information about the craft as a whole until the tenth century, we do not know to what extent Qur’anic scribes belonged to this social group. Al-Nadim, our main source on this subject, gives the names of only a few Abbasid calligraphers, without much elaboration. This is nearly all that has thus far been gleaned from texts. The absence of Qur’anic calligraphers and their art from secretarial manuals of the ninth century suggests that their milieu was separate from the court, to which this literary genre is related. It seems probable that some of them were artisans, perhaps grouped as a corporation in major cities, although this dimension of the craft still needs to be explored.

The idea that proportion can have a harmonizing impact on the soul emerged at an early stage in Arabic texts. Al-Kindi (c. 800–70), in his five extant musical treatises, relates proportion and the musical scale to the heavenly spheres and the soul. This is expressed notably through aphorisms such as this one, attributed to an unnamed philosopher:

When the essence of the soul is attuned to the numbers of [musical] composition, and the notes of the musician’s melodies are balanced, and the movements of their strokes and silences are proportioned, the natures, souls and spirits delight from their accord, proportion and harmony ... For the charm of natural things results from proportion in their structure, and from the beauty of the composition of their parts.

Like the Ancients, al-Kindi thought that the potency of proportion could be felt not only through sound, but also through other senses. He thus notes that the influence of ‘the mixture of colours on the soul through sight’ will be felt, like that of harmonious musical notes through hearing, ‘if it conforms to what we have shown’ in music. For instance the assembly of black, red, yellow and white will move our noble quality (al-qawwāl al-karamiyān). This approach recalls both Aristotle’s De sensu in its treatment of colour and Plato’s Timaeus for the effect on the soul. Linguistic evidence suggests that al-Kindi’s circle was connected with Yahyā ibn al-Bīrij (fl. early ninth century), who was responsible for a (lost) Arabic version of Timaeus. The colour scheme evoked here also echoes that of the early Qur’anic page: black (or dark brown) calligraphy over a white background, with red vocalization. Yellow dots were occasionally used to mark certain orthographic signs or variants; this colour could also be associated with the gold used for illumination. This analogy may be coincidental, but it points to the possibility of a shared perspective.

In the alchemy of Jabir ibn Hayyan (probably the production of a whole school active between the eighth and tenth centuries),
proportion is also discussed in concrete detail as an organizing principle in the structure of matter. As shown by Paul Kraus, some theoretical aspects of the corpus bear the imprint of Timaeus; Plato’s work is, in fact, directly quoted at least once (§27d) by Jābir.14 In Kitāb al-khuwāris, he also gives numerous practical recipes, notably of inks, which outwardly suggest a living link with the realm of artisans. While markedly different in outlook,15 Jābir’s alchemy and the writings of al-Kindi share an affinity with the realm of practitioners and a concrete interest in proportion which distinguish them from the mainstream of the translation movement. Like other early Arabic writings that deal, in some way, with Timaeus or proportion, they also have in common a relation to what Gerhard Endress called the “gnostic, Hermetic "sub-culture" of popular Hellenism.”16 Their exact relation, if any, with artisans remains to be understood. Did their social circles interact? How genuine are the recipes given in the texts?22 At this stage, we can only note that some of their ideas seem to represent the cultural background of calligraphy as a craft.

Calligraphy as music: the tenth century

The tenth century was a time of intellectual maturation during which the notion of proportion and its broader implications became increasingly common knowledge.15 Al-Rāzī (c. 854–925 or 935), the famous physician and alchemist, was also well versed in musical theory and performance. He is cited by several writers as the author of a work on a Kitāb al-fusūr kāfī tafṣīr khiṣār tannawīs, which suggests he had studied the commentary devoted by Phutarch to the Timaeus scale.16 Al-Rāzī is also quoted by al-Ghazālī (d. 1111) as having said:

> When beautiful pictures contain, apart from their subject, beautiful, pleasant colours — yellow, red, green and white — and the forms are reproduced in exactly the right proportions, they heal melancholy humours and remove the worries to which the human mind is prone, as well as gloom of spirits. For the mind is refined and ennobled by the contemplation of such pictures.23

In the same period, the relevance of proportion to calligraphy was openly discussed by Ibn al-Haytham (c. 965–1039). In his Optics, he explains that while the individual properties of visible objects, such

as colour, shape, size or number, exist individually, they will ‘also produce beauty by being joined with one another’: For a beautiful script is one whose letters have beautiful-looking shapes and are beautiful in composition with one another — which is perfect beauty in a script.18 Proportionality and harmony (al-tanāsib wa’il-‘alāf) are, in his view, overarching sources of beauty. In the body, for example, ‘proportionality alone may produce beauty, provided that the organs are not in themselves ugly, though not perfect in their beauty.19 This, he says, is also true in the realm of writing:

> Calligraphy is not beautiful unless its letters are proportionately arranged in their forms, dimensions, positions and order. And the same is true of all visible objects which are combinations of various parts.20

Ibn al-Haytham finds no need to justify the impact of proportion on the soul and explain the mechanism whereby beauty operates its effect on the viewer, at a time when these had become widely accepted notions. An even more significant testimony, from the perspective of calligraphy, had come a generation earlier with the ‘Epistles of the Brethren of Purity’ (Rasā’il ilkhānī al-safī), the Brotherhood behind this work was active some time between the 920s and 960s. Abū Ḥāyān al-Waṣḥī (c. 930–1023) gives the names of four of its authors, two of whom he knew personally.21 All four were active Ismā‘īlīs from Basra.

The Rasā’il are a work of encyclopedic scope which draws from a wide range of sources, among them Plato, the Pythagoreans, the Jābirian corpus and, in music, al-Kindi.22 Number (arithmetic) and form (geometry) lie at the basis of their gradation of knowledge. Their treatment of mathematics culminates in the fifth epistle, with music. The universal relevance of musical proportion is made clear by the repeated references to it, in different contexts, throughout the Rasā’il.23 It is restated at the outset of the epistle devoted to the subject:

> Music, an art which combines the bodily and the spiritual, is the art of composition through the knowledge of proportion. Our purpose in this epistle is not to teach about singing and entertainment ... but the knowledge of proportion and the way to compose, which together lie at the root of proficiency in all arts.24
Music, for the Ikhwan, is a unique craft in that the substance worked upon is not material, but spiritual: the souls of the listeners. Among its realms of application is the art of calligraphy:

The most accomplished objects and perfect composites are those which are built, in the assembly of their parts, upon the best proportions. And one further example of this is the art of writing, which is the most noble of all arts.  

Whatever the language may be (Arabic, Persian, Syriac, Coptic, Hebrew, Greek or Indian), the fundamental precept remains the same: at the basis of the letters stand the straight line and circle.  

Most of all:

The most correct, perfect and beautiful calligraphy is that which is arranged according to the most noble proportion in its layout (toafshā) and the dimensions of its letters in relation to one another.  

The principles involved are clearly musical: 'the best proportions are 1, 3:2, 4:3, 5:4 and 9:8', that is, the unison, fifth, fourth, third and tone. The Ikhwan do not explain their concrete application, but only refer to the fractions added to one (a half, a third, a quarter and an eighth) in the same scale for their letter descriptions. This discrepancy, as we shall see, reflects a time of profound transformation for the craft as a whole. The Ikhwan allude to the presence of a calligrapher among their ranks: the muharrir al-khadīq al-muhandis. Their statements about calligraphy will thus be made on the authority of people of the craft ('na qqlahu aht khadbihi al-sinā'). One of the men behind the Raudūt, Zayd ibn Rab'a, was indeed quoted as the author of a 'Book on the Art of Calligraphy' ('Kitāb fi sīnā at-khāṭīf') by al-Safadi, in the fourteenth century.  

Two problems are posed by this text. First, the Ikhwan are not referring to Qur'anic calligraphy. The art of writing, they say, 'is the pride of ministers, secretaries and literates in courty circles.' We shall soon return to this point. Second, the epistles were composed in a century throughout which calligraphy underwent major changes. Traditional Kufic, in that period, was falling out of use to be gradually replaced by the New Style and, eventually, cursive. Which script type are they referring to? A confrontation of their descriptions with the manuscript evidence will help us address this question. Although the explanations are not detailed, they suffice to determine the general shapes of the letters and the approximate size of their strokes (Table 3).  

Traditional Kufic is ruled out from the outset, if only because of the shape of its šīf and its total lack of large circular forms. On the other hand, the letters in both the New Style and proportioned cursive follow two basic shapes, the straight line and circle. All other halfway curves have been more or less suppressed. Both types are therefore essentially compatible with the Ikhwan's description. This, for a start, renders their distinction between Qur'anic and non-Qur'anic scripts less relevant to this analysis, since from the advent of the New Style, the differences between them started to fade away.  

All the Ikhwan's descriptions are applicable to the New Style. By contrast, two of them, representing five letters, are incompatible with proportioned cursive. The width of šād, dād, ū and  wa should be equal to the height of the šīf: this feature is typical of Kufic and the New Style; it does not appear in cursive, where the width of these letters is much shorter (about half the height of the šīf—see Figure 75). The lower stroke of final wa should also have, in the flattened form, the (inverted) shape of a ṣād. This is the case in the New Style, whereas in cursive, the angle of aperture differs markedly between these two forms. Additionally, in the New Style, the head of ūr, qāf, wāw, mīm and ūd has the same triangular shape, whereas in cursive it can be divided into three groups: (a) ūr, qāf and wāw; (b) mīm; (c) ūd.  

65. The šīf or letter šīf.
<table>
<thead>
<tr>
<th>Letters</th>
<th>Ikhwān al-Ṣafāʾ</th>
<th>Kufic</th>
<th>New Style</th>
<th>Proportioned Cursive</th>
</tr>
</thead>
<tbody>
<tr>
<td>ʿālif</td>
<td>Width = ½ height</td>
<td>N. Variable and with lower return</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>bāʾ, dāʾ, thāʾ</td>
<td>Width = ʿālif height Head = ½ ʿālif height</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>jam, kāʾ, khaʾ</td>
<td>Upper stroke = ½ ʿālif height Lower curve = ½ circle</td>
<td>N. No circular return (sometimes curved)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>dhāʾ, thāʾ</td>
<td>Like the bent/curved height of the ʿālif</td>
<td>N. Normally longer than ʿālif height</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>rāʾ, yāʾ</td>
<td>½ circle</td>
<td>N. No curve</td>
<td>Y? Sometimes angular and possibly shorter</td>
<td>Y? Sometimes angular and possibly shorter</td>
</tr>
<tr>
<td>sīn, shīn</td>
<td>Heads = ½ ʿālif height upwards Lower part = ½ circle</td>
<td>N. No curve</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>sīd, sād</td>
<td>Width = ʿālif height Interstice = ½ ʿālif height Lower curve = ½ circle</td>
<td>N. No curve and interstice unusual</td>
<td>Y</td>
<td>N. Width &lt; ʿālif height</td>
</tr>
<tr>
<td>ʿayn, ghayn</td>
<td>Width = ʿālif height Interstice = ½ ʿālif height Height = of ʿālif</td>
<td>N? Interstice unusual</td>
<td>Y</td>
<td>N. Width &lt; ʿālif height</td>
</tr>
<tr>
<td>fāʾ, qāf</td>
<td>Upper curve = ¼ circle Lower curve = ¼ circle</td>
<td>N. No circular form</td>
<td>Y? Various shapes. Upper curve sometimes with an angle</td>
<td>Y? Upper curve not a quarter circle, but a small semicircle</td>
</tr>
<tr>
<td>fāʾ</td>
<td>Width = ʿālif height Head = ½ of ʿālif height, in rounded shape</td>
<td>N. Head is a thick mass rather than a curved line; return often longer</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Letters</th>
<th>Ikhwān al-Ṣafāʾ</th>
<th>Kufic</th>
<th>New Style</th>
<th>Proportioned Cursive</th>
</tr>
</thead>
<tbody>
<tr>
<td>qāf</td>
<td>Lower part = ½ circle Head = ½ of ʿālif height, in rounded shape</td>
<td>N. No circular form</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>kāf</td>
<td>Width = ʿālif height Interstice = ½ ʿālif height Upper stroke = ½ ʿālif height</td>
<td>N. Upper stroke of same height as ʿālif</td>
<td>Y</td>
<td>Y (except final form)</td>
</tr>
<tr>
<td>lām</td>
<td>Height = of ʿālif Width = ½ ʿālif height</td>
<td>Y? Width sometimes shorter (¼ ʿālif)</td>
<td>Y? Width sometimes shorter (½ ʿālif)</td>
<td>Y? Width tends to be longer (½ ʿālif)</td>
</tr>
<tr>
<td>mīm</td>
<td>Curve = ¼ circle Head = ½ of ʿālif height, in rounded shape</td>
<td>N? Final curve only in D.N.C., where occasional</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>nūn</td>
<td>Curve = ½ circle</td>
<td>N. No curve</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>hāʾ</td>
<td>Head = ½ of ʿālif height, in rounded shape</td>
<td>N. A thick mass rather than a curved line</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>waw</td>
<td>Curve = ¼ circle Head = ½ of ʿālif height, in rounded shape</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>yāʾ</td>
<td>Like the ʿālif, with backward return width = ʿālif height Lower curve = circle</td>
<td>N</td>
<td>Y</td>
<td>N. No correspondence with shape of ʿālif</td>
</tr>
</tbody>
</table>

(c) ḥā. The ʿIkhwān al-Ṣafāʿ describe the heads of all five letters as a single shape.

The ʿIkhwān, then, are clearly referring to the New Style. But the affinity of this stylistic family, in the geometrical codification of the letters, with proportioned cursive, is also revealed by this comparison. On the other hand, in style and layout, the New Style still largely belongs to the Kufic tradition. It thus represents, in all senses of the word, the transitory stage between traditional Kufic and proportioned cursive.

When they first emerged, the principles of Kufic calligraphy were probably conceived as a literal ‘architecture of the page’: the application of architectural principles to the pen, parchment and scribe’s craft. The underlying aesthetic conceptions, ultimately derived from Antiquity, may have been reduced to a few simple ideas in the Umayyad period. But the craft and intellectual tradition had parallel roots which were almost bound to meet, as each expanded and matured. Such an interaction may conceivably have begun at an early stage, but the earliest written evidence of it dates from the tenth century. By then, we observe, with the ʿIkhwān al-Ṣafāʿ, a process whereby learned circles give philosophical elaboration to calligraphy, while the craft itself informs written descriptions of the script. But this testimony also reflects a period of profound, multi-faceted change.

CHAPTER FOUR

Towards the Codification of Cursive

The tenth century was a time of major transformation for the whole of Arabic writing. From Kufic, there was a gradual move towards a new aesthetic of the letter shapes, marked by its angularity and by the accentuated thinness of the strokes. Its formal features have been defined by Déroche, who called it the ‘New Style’ and divided it into two main categories: NS.I and NS.III (see Appendix). This stylistic family, sometimes designated by other names, such as ‘broken cursive’ or ‘semi-Kufic’, was gradually replaced by the cursive styles which lie at the basis of modern calligraphy. Beyond this general sequence, much remains to be discovered about the relationship between each step and its predecessor. Where can we detect strong elements of continuity, and where are the breaks with the past?

The New Style

Several features of the New Style find antecedents in the Umayyad period. In the copper plaques at the Dome of the Rock (Figure 37), the script is based on the combination of straight lines and circles, but of variable size; the major innovation of the new codification would be to unify them into a single scheme, based on the height of the alif. A direct forerunner of the New Style appears a few decades later in a wall inscription from Antinoë, in Egypt (Figure 67). Its script is typical of NS in all its main features: the S-like shape of independent alif with its widened top and angular lower return; the projection of final alif under the line; the approximately circular shape of final wāw; or the thin sinusoidal tail of final wāw. This unexpected resemblance to tenth-century NS brings us to question its date, which was read as 117/735 by Bernhard Moritz.