Turning the Corner: Strategies in Monumental Islamic Epigraphy and Decoration, Mainly in Cairo

ركن الزاوية: استراتيجيات النقوش الزخرفية المعمارية الإسلامية في الأساس في القاهرة

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ملخص

تناقش هذه الورقة البحثية بعض الطرق التي اتبعها المصممون، والخطاطون أو الصناع (على الرغم من عدم وضوح التمييز بين تخصصاتهم المختلفة) في تنفيذ النقوش الكتابية التي كانت تتقاطع في اتجاهات مختلفة سواء على مستوى رأسي أو مستوى أفقي. إن استخدام الكتابة العربية – حتى في البلدان غير الناطقة بالعربية – يتطلب قدرًا من وحدة الموضوع، وقد دُرست أمثلة تدلل على هذه الوحدة الموضوعية من المغرب إلى إيران، ومنذ ظهور الإسلام إلى القرن السادس عشر الميلادي.

تميزت المخطوطات القرآنية المبكرة بحرية توزيع الكلمات على الأسطر، وهو ما يعد أيضًا سمة من سمات النقوش المبكرة، التي ظلت شائعة للغاية في القرون اللاحقة. كانت أبرز المناطق الأكثر شيوعًا لتسجيل النقوش هي الجوانب الأربعة لمنطقة انتقال الدخلات المعقودة، مما يستلزم وجود أربعة أركان ذات زوايا قائمة. ونجد هنا أيضًا ظهور رغبة أولية لتوزيع الكلمات على أركان الزاوية (نجد مثالاً مبكرًا لهذه الحالة في جامع الزيتونة في تونس عام ٨٦٤ م). كذلك شكل توزيع كلمات النص على المحاريب والأبواب مشكلة أخرى، حين بدأت في الظهور مع بداية إدراج النقوش على المحاريب والأبواب منذ القرن العاشر الميلادي وما بعده. كان على المصممين عند تأطير النقوش (تصميم النقوش في أطر أو طرز) أن يتعاملوا مع مسألة كيفية تطويع أركان الزاوية بما يتلاءم مع النقش، مما أدى إلى ظهور مشكلة توزيع النقش على الجوانب الأربعة للمربع حتى يمكن بسط المحارف أفقيًا. تميزت العمارة الدينية في القاهرة في أواخر فترة حكم الدولة الأيوبية وما بعدها باستخدام النوافذ في العمارة داخل التجويفات، مما شكل تحديًا للمصممين المعماريين لتوزيع النقش على زوايا قائمة وضيقة المساحة.

كذلك تناقش هذه الورقة البحثية الحلول التي توصل لها المصمم أو الصانع (في حالة قيامه بتنفيذ النقش) لحل التعارض المستمر بين سهولة التصميم والوضوح. إن أحد أهمية وضرورة وضوح وقرائية نقوش تأسيس المنشآت هو إضفاء شرعية على ملكية تلك المباني. الأمر الآخر هو زيادة الاعتماد على الخطاطين الذين وضعوا مسبقًا تصميم النقوش بشكل أكثر دقة، مما ساعد بدوره في تقليل تكلفة الورق المستخدم في تصميم النقش، لكن في بعض الحالات التي لا يكون فيها الخطاط مشاركًا في تصميم النقش، فإن مستوى تعليمه يكون عاملاً هامًا في توزيع كلمات النقش خاصة النقوش الجنائزية. أما الأمر المثير للدهشة هو الوقت الذي استغرقته ظاهرة توزيع كلمات النقش على أركان الزوايا حتى تختفي؛ حيث لم تنته تلك الممارسة بالكامل تقريبًا إلا مع بداية القرن السادس عشر الميلادي.

This paper examines some of the ways designers, calligraphers or craftsmen (the distinction is not always clear)[1] planned inscriptions that, either on a vertical or horizontal plane, were broken through differing orientations. This was accomplished in a variety of materials, but the use of Arabic script, even in non-Arabic speaking countries, provided a measure of unity to subject. For such a vast subject, it is not possible in the space allotted here to do more than outline some of the approaches taken; I concentrated on Cairo and the Arab world, but have included a few examples from Iran and Turkey for comparative purposes.[2]

The earliest surviving monumental Arabic epigraphy is written on rectangular panels, and these remain the single most common visual frame for all monumental epigraphy in the Arabic alphabet, including later inscriptions in Persian and Turkish.[3] Before its appearance on monuments a rectangle was also the framework for the most common form of Arabic in manuscripts, those of Quran. With regard to early Quran pages, the epigraphic layout may be quite unexpected, since, as noted by Estelle Whelan, the letters are written in connected groups separated by spaces: "words... were freely divided between lines, without respect for natural breaks in sense or pronunciation"[4] so that "a careful search is required to find, on any given page, recognizable words to help identify the correct Qur'anic passage."[5]

The breaking of words between lines is also a feature of early inscription panels, and remained extremely common in subsequent centuries. It is less frequent in monumental epigraphy than in the early Quran manuscripts. Why would this be so? There may be two reasons. One is the nature of the text, which in the case of the Quran was predominantly oral and therefore one in which

the viewer could easily supply from memory the necessary connections between words separated on different lines. Another might have been the calligraphers' feeling of a more intimate connection between their work and the viewer. However, in the case of monumental inscriptions the text is often unpredictable, and might have been drawn up in the chancery. Although epitaphs could have retained some of the same quality of the intimate viewing distance of manuscripts, foundation inscriptions were usually cited at a greater distance in which legibility would, or at least should, have been valued to a greater extent.[6]

The Dome of the Rock (72 AH/691/2 CE) displays some of the earliest surviving monumental inscriptions. Above the north and east entrances were repoussé copper panels. That on the north had no words divided between lines; that on the east had words divided between the 5th-6th and 7th-8th lines.[7] Its much more famous mosaic inscriptions occupy the inner and outer faces of the intermediate octagon. While the outer face is a straightforward octagon, the inner faces of the octagonal arcade display eight inwardly projecting piers each of which produce four nearly right-angled turns. However, the corners of these sharp turns (as well as the much gentler angles at the outer face of the octagon) were rounded, obviating the need for any particular regard to the spacing of words, which where necessary, continued smoothly around the corners.

Returning to the division of words between lines in rectangular panels, examples contemporary with the Dome of the Rock include an epitaph of 71 AH/691 CE[8] and a milestone of the same patron, 'Abd al-Malik, which breaks the word *amir* between the fourth and fifth lines.[9] The greatest number of inscriptions on rectangular panels by far

is on epitaphs. It would not be worthwhile, or even possible, to enumerate all the examples of these, but due to the publication of several corpuses it is possible to identify trends. It is clear that occasional division remains common up to the 12th-14th centuries, declining rapidly in the 14th century, and is rarely found thereafter.[10]

One of the most common placings for inscriptions is on the four sides of the base of the zone of transition of a domed bay, necessitating four right-angled turns (although only in three need the text be continuous). However, the earliest surviving placement of an inscription around four sides of a square may be on the Cairo Nilometer, at the top of the originally open square pit. The turns here are all within Quranic verses, although it is likely that Ibn Tulun replaced the west and south sides, which originally contained a foundation inscription dated 861 in the name of the Abbasid Caliph al-Mutawakkil, with Quranic verses followed by a blessing on the Prophet.[11] Although some of the Quranic verses are continued around corners, none has broken words. The likelihood of this happening in any case is reduced by the presence in some corner panels of vertical frames (Fig. 1). Although not present on the northeast corner (the first turn) (Fig. 1 top), one is found on the end of the north face, at the end of the original inscription of al-Mutawakkil (Fig. 1 middle).[12] At the beginning of the inscriptions on the west side added by Ibn Tulun (the second turn) the frame, curiously, is bevelled; at the end of this west side there is again a distinct frame, but once more one is lacking on the beginning of the south side (Fig. 1 bottom). These surprising inconsistencies, both in the work for al-Mutawakkil and Ibn Tulun, betray the craftsmen's unfamiliarity with what was then a completely new setting for an inscription.

(Fig. 1) Cairo Nilometer (861 CE and later): Detail of turns at first (top), second (middle) and third (bottom) corners.

From its adoption in mosques in Ifriqiyya in the 9th century, the dome over the bay in front of the mihrab became a popular feature of mosque architecture throughout the Islamic world. Among the earliest to display an inscription was the famous congregational mosque of Tunis, the Zaytuna, built by one otherwise unknown Nusayr in 864 CE, identified in the inscription as a client of the Abbasid Caliph al-Musta'in. This identification deliberately omitted mention of the the ruling Aghlabid Amir, Abu Ibrahim Ahmad, demonstrating Nusayr's independence of Aghlabid control.[13] The importance of this may be reflected in what is a new positioning for a foundation

inscription, in the prominent and highly legible space just below of the zone of transition. In this case, the lack of experience in designing for an inscription that has four right-angled turns (with, as is usual, no vertical frames at the corners) is reflected in the spacing of the words. The inscription, of course, must start unimpeded at the beginning of the line, but in each of the other three breaks a word is divided between the right-angles.[14]

Thirty years ago, Terry Allen noticed that monuments at the extreme ends of the Abbasid Empire began using framing inscriptions at almost the same time, giving as examples those of the mihrab of the Great Mosque of Cordoba (966) and the facade of the Arab-Ata Mausoleum at Tim (977) in Uzbekistan. He astutely surmised that the inspiration for both may have been found in now lost monuments at the heart of the Abbasid Empire, in Baghdad.[15] His contention that this device became the rule for mihrabs and portals is largely true, although, especially in portals, we will find many exceptions.[16] With framing inscriptions, epigraphers obviously had to deal with the question of how to negotiate the corner turns, posing layout problems different to that of an inscription on the four sides of a square (as at the Zaytuna) where ligatures could be extended horizontally around a corner. The inscription of the Arab-Ata is missing its top, but the three ante-mihrab bays of the Cordoba *maqsura* between them have eight framing inscriptions; two on each of the three main arches, and two on the windows above the main arches of the outer bays. The main mihrab arch is exceptional, not just for its larger size, but in that it contains two parallel inscriptions of the same size within the same frame (Fig. 2). The outer ones are read first, with Quranic verses filling the outer vertical right-hand side line and the first half of the

upper horizontal line, followed by the foundation inscription which carries on from the end of the outer frame to the start of the inner.[17] The side bays, which lead to the treasury and to a passage to the adjacent palace, have simpler schemes (Fig. 3). In each, the inscription on the right continues to the top of the frame (it is therefore privileged in that it is the only one to fill the total length available of the space within the frame), the horizontal inscription continues to the end of the frame, with the left downward inscription running below this.

With a panel that has a framing inscription on four sides there may ostensibly be less of a problem, depending on its orientation. The earliest I know of is the rectangular panel (datable to the 9th century) within the mihrab of the Zaytuna at


(Fig. 2) Cordoba, Great Mosque (966 CE), detail of mihrab.
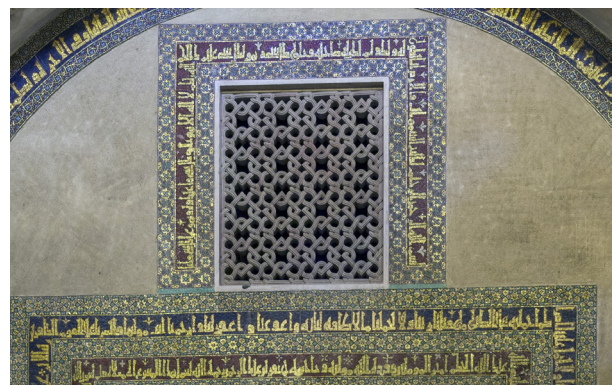
(Fig. 3) Cordoba, Great Mosque (966 CE), detail of entrance to Treasury.

Tunis; it is interesting that in the latest discussions concerning it that it was reproduced in both vertical and horizontal format, even though its placement within the mihrab is vertical.[18] Every side has the top of the inscription on the outer frame, so one side must be upside down. It has been argued that this is a re-employed panel, so that its original orientation is speculative, but in fact the *Basmala* that begins the inscription is privileged (Fig. 4), being the only one to occupy the whole of the space on one side.
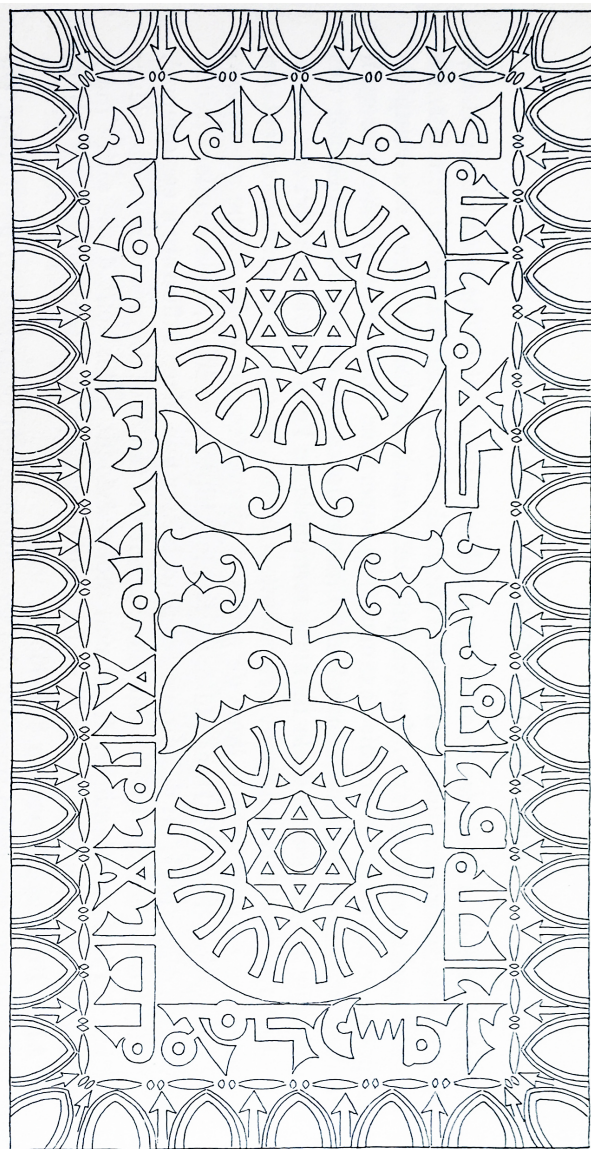
(Fig. 4) Tunis, Zaytuna Mosque (864 CE), drawing of panel on mihrab (after Golvin).

The Mosque of al-Hakim also has, on the north minaret, two rectangular panels with an inscription on each side (Fig. 5), but here there are two differences: firstly, their orientation is clear since it has both a top and a bottom side that are to be read in the same orientation; and secondly, for the first time we see a common later device that eliminates the problem of the inscription turning the corners: each fills this space with a palmette. Here the inscription (Quran 24:35, the Light Verse, distributed over the two panels) starts vertically at the bottom right. This building also has a dome over the ante-mihrab bay with an inscription at the base of the zone of transition; here, unlike the Zaytuna, the inscription is Quranic, and only on one turn (the third) do we find a word (*li-yazdadu*) broken across the corners.

The mihrab of the Mashhad of al-Juyushi (478 AH/1058 CE) presented a new problem since the Quranic inscription is continued around not just the outer rectangular frame but continues on the frame that surrounds the mihrab arch (Fig. 6).


(Fig. 5) Cairo, mosque of al-Hakim (*c.* 1010), detail of square panel on north minaret.

Surprisingly, it is at the first turn where the greatest epigraphic awkwardness occurs, where the letters *ra'* and *alif* of the word *qusuran* are horizontally oriented, unlike the vertically oriented initial letters. In the Quranic verses that are placed on the four sides below the zone of transition of the same monument words are broken between the northeast and southwest turns.[19] The lack of detailed planning of the inscription for the allotted space is shown by the insertion of the last word, *al-anhar*, on a line above the main inscription in smaller letters, a common feature of Fatimid inscriptions.[20]

The gates of Bab al-Nasr and Bab al-Futuh of Cairo by the same patron, Badr al-Jamali Amir al-Juyushi, date from a little later (1087). At Bab al-

Futuh, the inscription on the adjacent north wall has one word continued around a corner; although its horizontal ligature provides a visual continuity, the extent of the elongation, being longer than the end of the word present around the corner, suggests that two craftsmen must have been working separately on each panel (Fig. 7).[21] At Bab al-Nasr, a craftsman hit upon an elegant solution of crowding at the end of a line: the final *alif* was placed exactly on the corner so that it was visible from each angle (Fig. 8).[22] This device continued later in Fatimid epigraphy on the Mosque of al-Aqmar (1125), where on the upper foundation at the first turn at end of the projecting portal the *alif* of *amin* is angled around the corner (Fig. 9, upper). It also occurs on the lower foundation inscription, on the second turn of the double recess on the left side, where the *alif* of *da'at* is similarly placed (Fig. 9, lower).

(Fig. 7) Cairo, Bab al-Futuh (1087), detail of foundation inscription.
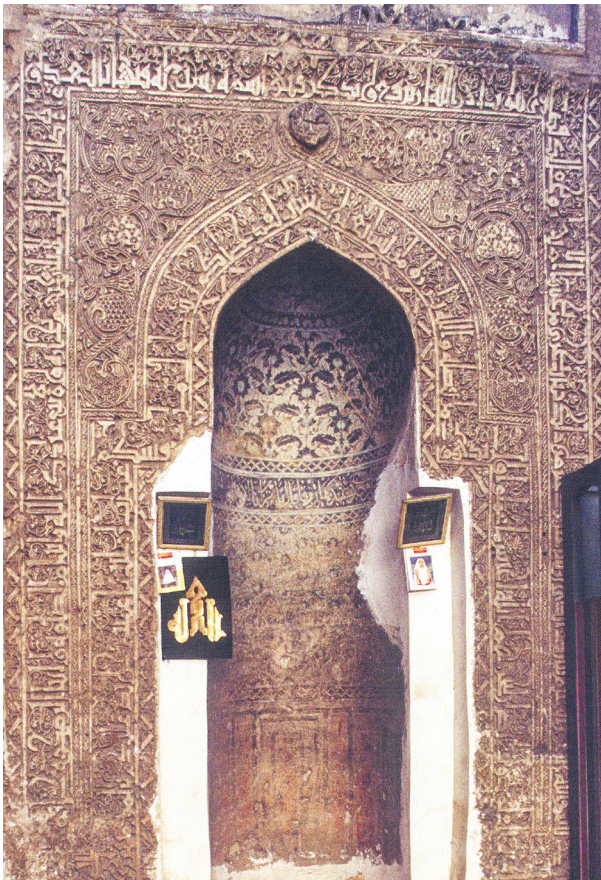
(Fig. 6) Cairo, *Mashhad* of al-Juyushi (1085), mihrab.

(Fig. 8) Cairo, Bab al-Nasr (1087), detail of foundation inscription.

(Fig. 9) Cairo, Mosque of al-Aqmar (1125), details of the upper (top) and lower (bottom) foundation inscriptions on the façade.

Even on an inscription that was placed on the outer sides of a rectangle, as on one of the wooden cenotaph surrounds the late Fatimid period (1154-60) in the Mausoleum of Yahya al-Shabihi, it was possible for a word to be broken between two panels, and this even though the panels are interrupted not just by the frame of the rectangle but also by the vertical post that marks each of the corners. An analysis of the three cenotaphs has shown, given the different spacing of the same text, how the craftsmen responsible (probably three, since no two cenotaphs were identically planned) were evidently not following any preparatory drawings.[23]

On the base of a dome, there are no corners there to be turned, so one might have thought for this reason that this location would have been preferred to the base of the zone of transition. However, this would only apply if the script was of sufficiently large size to be easily legible. The painted foundation inscription of the Shrine of Sayyida Ruqayya at Cairo (1133) hardly qualifies, although the earlier brick foundation inscription of the south dome of the Isfahan Jami' (1082-7)[24] was more successful in that regard.

From the late Ayyubid period onwards religious architecture in Cairo is distinguished by the elaborate fenestration often set within stepped recesses. Fortunately, the pitfalls of placing an inscription on the succession of narrow right-angled turns that these entail were already recognized in the late Ayyubid period on the facade of the Madrasa of al-Salih Najm al-Din Ayyub (1242) at Cairo. The foundation inscription runs along the most legible and important part of the facade, above the entrance under the centrally placed minaret, where al-Salih's name is placed in the middle of the inscription. Instead of trying to cram a few letters on the narrow setback to either side, as was seen on the al-Aqmar inscriptions, for instance, an arabesque occupies the side of the recess, and just to make it clear to the viewer that they are not missing anything, a half-palmette is placed on the plane of the inscription before and after the recess (Fig. 10). At the base of the zone of transition in the mausoleum that Shajarat al-Durr added in 1250, to the same building is another way of negotiating corners that quickly became popular: a medallion containing an arabesque; the adjacent inscriptions are also framed by semi-circles at each end, forming in other words a cartouche.

(Fig. 10) Cairo, Salihiyya Madrasa (1242), detail of inscription.

(Fig. 11) Cairo, Khanqah of Baybars (1309), detail of inscription.

Both of these Ayyubid innovations, palmettes and cartouches, quickly developed in Cairo in the early Mamluk period. The arabesque palmettes for instance figure on the multiple recesses of the exterior foundation inscription of the Qalawun complex (1283/4) and on that of the Khanqah of Baybars (1309) (Fig. 11).

Semi-circles are present at the beginning and end of the inscriptions on each face of the wall in the room adjacent to the *iwan* in the Ribat of Mustafa Pasha (second half of the thirteenth century). In the main *iwan*, they also occur on the main frieze at the back and sides of the *iwan*, as well as at the apex of its arch, where they flank a medallion with the

(Fig. 12) Cairo, Ribat of Mustafa Pasha (before 1274), detail of Qibla Iwan.

so-called "target" blazon of a cup with a crescent (Fig. 12). This blazon, only found in the earlier Mamluk period, is important as a dating criterion, showing that the stucco belongs to the period of the erection of the building in the second half of the thirteenth century, rather than to the restoration of Janibak in the fifteenth century.[25] More developed interstitial circular medallions and epigraphic cartouches can be found on the stucco inscriptions encircling the *iwans* and the right-angled turns of the *mihrab* of the nearby Shaikh Zayn al-Din Yusuf complex (1298-1335).[26]

The stucco decoration of the Ribat of Mustafa Pasha has been compared with Maghribi work, and it is indeed in the Maghrib and Andalusia in the same period, from the late thirteenth century onwards, that are very common use of cartouches for inscriptions. These cartouches are frequently, but not invariably, separated by medallions which can be decorative or also epigraphic. A few examples can be mentioned: at the Taza Great Mosque (1291), the Sidi Bel Hasan Mosque at Tlemcen and at the Sahrij Madrasa (1321-3) in Fez.[27] At the latter, not just words but also letters continue through right-angled turns; the fluidity of the stucco work, however, overcomes the awkwardness that might otherwise result. At the Alhambra inscribed cartouches alternating with decorative medallions are found in the north portico of the Comares courtyard[28] and with epigraphic medallions in the Hall of the Two Sisters; in the latter the band at the base of the octagon is angled across the corner.[29]

Both in the Maghrib and Cairo, at this period, the designers began to avoid placing inscriptions at the corners of vertical frames, putting decorative medallions or squares at the corners instead. At Cairo this can be seen, for instance, at the Mausoleums of Shajarat al-Durr (1250), the 'Abbasid Caliphs (1260s), and the Ribat of Mustafa Pasha (Fig. 13), on the *mihrab* of the Madrasa of Husam al-Din Turuntay al-Mansur (1290), at the Ribat of Sulayman al-Rifa'i (1291) on the *mihrab* of the prayer hall adjoining the tomb, and on the *mihrab* of the Khanqah of al-Bunduqdariyya (1283/4).[30] One of the most attractive uses of it is in the tomb of Salar at the complex of Salar and Sanjar (1303/4) (Fig. 14). The framing inscription here, unusually, is of wood, where boldly carved diagonally-oriented arabesques at the corners separate the horizontal and vertical planes.[31] Here again, this is a feature found in the same period in the Maghrib and Andalusia, at the Taza Great Mosque (1291), the Sidi Bel Hasan Mosque (1296) at Tlemcen,[32] and at many places in the Alhambra.[33]

Although most later Mamluk monuments continue to accommodate the viewer by the use of arabesques on the corners of exterior recesses, there is one major exception: the Mosque of Sultan

(Fig. 13) Cairo, Ribat of Mustafa Pasha (before 1274), *mihrab*.

(Fig. 14) Cairo, complex of Amir Salar and Amir Sanjar (1303/4), tomb of Salar, detail of wooden panel (non-extant).

al-Ghawri (1504) (Fig. 15). The foundation inscription continues without breaks in the window recesses, with a word sometimes bent around the corner. Perhaps the designer reckoned that the large size of the inscription, whose original paint would have made it even more legible,[34] exempted it from the precautions taken on earlier monuments.

Iran

As mentioned above, the foundation inscription of the Arab-Ata Mausoleum at Tim is missing its top, leaving us ignorant of the treatment of the turns. This also applies to some other earlier foundation inscriptions on *pishtaqs*, such as those of the Saljuq entrance to the Isfahan Friday Mosque and the Ghurid portal of the Herat Friday Mosque. In fact, the *pishtaq* frame was rarely used for foundation inscriptions, a horizontal band above the level of the doorway being preferred, presumably on account of greater legibility.

The most frequent early use of the framing inscription is on *mihrabs*, and here there is a different approach to the Arab examples discussed earlier. The designers often tend to avoid placing much epigraphy in the corners, and emphasize the diagonal axes there by means of purely decorative features. This is seen in what is possibly the earliest complete surviving frame inscription in the Iranian world, on the *mihrab* from the Friday Mosque at Iskodar (early 11th century) (Fig. 16).[35] The corners are taken up with a diagonal line from which branch, on each side, bifurcated leaves.[36]

In some Saljuq *mihrabs* the corners are given similar treatment. At the Haydariyya at Qazvin (early 12th century), for instance, there are three framing inscriptions, all in Kufic, and all to some extent use diagonal lines with decorative details to either side at the corners (Fig. 17). At the Mausoleum of Pir Hamza Sabz Push (12th century) at Abarquh, the outer *naskh* inscription uses *alifs* as diagonals at the corners, the inner one decoration, partially diagonal, to accommodate the turns.[37] At the Nayriz Jami' (1164) decorative diagonals are again placed on the corners.[38]

In stucco *mihrabs* of the Ilkhanid period the trend is even more marked. On the Kufic
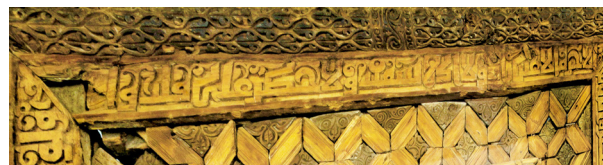
(Fig. 16) Mosque of Iskodar, detail of *mihrab* (early 11th century) (Dushanbe, National Kamoliddin Behzod Museum).

(Fig. 15) Cairo, Mosque of al-Ghawri (1504) (photo: Creswell archive, American University in Cairo).

(Fig. 17) Qazvin, Haydariyya Mosque (12th century), details of *mihrab*.

inscription on the *mihrab* adjacent to the tomb of the son of Uljaytu at the Shrine of Bastam the treatment is similar to earlier Saljuq ones, but on the *mihrab* within the mosque, adjacent to the main courtyard, the *Naskh* inscription is interrupted at the corners by diagonally placed teardrops within which are smaller Kufic inscriptions.[39] Large bulbous teardrop medallions without epigraphy are present in a recently discovered Ilkhanid *mihrab* at the Isfahan Jami' in the corridor leading to the courtyard from the eastern entrance (Fig. 18). At the Marand Jami' (1330) the approach is more radical, with words at the corners tilted at a forty-five degree angle so that their uprights emphasize the diagonal.[40] Surprisingly, the treatment on lustre *mihrabs* is quite different. All five from the thirteenth century use a post and lintel framework, where the horizontal line extends the full width of the frame to either side, but the fourteenth century example in contrast allows both vertical sides the full height.[41]

The Timurid (and Qara Qoyunlu) designers had no compunction about spreading words across the corners on horizontal inscriptions,[42] but in the tile mosaic *mihrabs* or smaller settings they continued the tradition of emphasizing the corners with diagonally arranged *alifs*, sometimes, if to a limited extent, also accompanied by words placed diagonally (Fig. 19).[43] In the more expansive setting

of an *iwan* arch, the post and lintel arrangement was the norm, even for foundation inscriptions, as in the case of the Gawhar Shad Mosque at Mashhad.[44]

For *iwans*, this continued to be the norm with Safavid inscriptions.[45] However, on occasions, they revelled in the chance to emphasize the diagonality of the corners in the framing inscription. This can be seen most effectively in the inscriptions on each side of the lower octagonal faces in the dome chamber of Allahvardi Khan at the Shrine of Imam Riza at Mashhad (1612) (Fig. 20).

(Fig. 19) Timurid tile mosaic:
Top left: Ziyaratgah, Masjid-i Chihil Sutun (1490-1500).
Top right: Samarqand, Shah-i Zinda Mosque (15th century).
Bottom left: Taybad, funerary complex of Zayn al-Din (1444).
Bottom right: Azadan, Shrine of Abu'l-Walid (1475-1500).

(Fig. 18) Isfahan, Friday Mosque, detail of Ilkhanid *mihrab*.

(Fig. 20) Mashhad, Shrine of Imam Riza, Allahvardi Khan dome chamber (1612) (photo: Pope, Asia Institute Archive, Shiraz University).

(Fig. 21) Konya, Alaeddin *Jami'* (12th century), detail of *mihrab*.

Anatolia

Although *iwans* were common in pre-Ottoman Anatolian architecture, they rarely featured framing inscriptions of any kind; foundation inscriptions were usually cited either within a rectangular panel above the entrance or on a horizontal band within the *iwan* above the level of the doorway.[46]

At the Alaeddin Mosque at Konya (1156-1235), the south wall has several foundation inscriptions of different dates on rectangular panels,[47] while the framing inscription of the *mihrab* is the earliest of a series which employs a medallion at the corners (Fig. 21);[48] a few other *mihrabs* include the post and lintel design.[49]

Panels for foundation inscriptions remained firm favorites in Ottoman architecture. Early awkwardness is revealed in the design of the panel of the Orhan Ghazi *Jami'* in the Citadel at Bursa. Its square panel has four larger horizontal lines containing Quran 112 *(Surat al-Ikhlas)* followed by the date (738 AH/1337-8 CE), surrounded by the foundation inscription that begins at the bottom right but continues so that the line on the bottom, which contains the name of the patron, is upside down.[50] The intramural Orhan *Jami'* in Bursa (1339/40) displays the typical porch of early Ottoman mosques preceding the entrance, precluding an *iwan* where a large foundation inscription could be displayed. One might have thought that the band above the arches of a portico would be an ideal place for a large eye-catching inscription, but surprisingly

(Fig. 22) Amasya, Beyazid *Jami'* (1414), detail of foundation inscription.

the much smaller area around the door into the mosque itself was always preferred. In the case of the Orhan *Jami'*, it has a more conventional inscription in five lines on a typanum above the entrance.[51]

The Eski *Jami* at Edirne (1414) has a conventionally designed foundation inscription in three lines on a rectangular panel, but at the Beyazid Pasha *Jami'* at Amasya (1414) another popular tendency in Ottoman foundation inscriptions exists, to divide them into three panels: right, center and left of the main door. In this case, there are three identical frames in the form of cartouches, each with two lines (Fig. 22).[52]

The Bursa Yeşil *Jami'* (1419) does feature a rectangular frame with a post and lintel inscription (largely Quranic),[53] but it was intended to be obscured by the (unbuilt) portico. Its foundation inscription is also in units to the right, center and left, above the main door, but exceptionally they are not split into separate units. Instead, its three lines are to be read continuously in each of the three registers, carelessly (or fearlessly) bending many words around the corners.[54] Some misgivings at

(Fig. 23) Karaman, Ibrahim Bey Imaret (1432), detail of *mihrab* (now in the Çinili Kiosk, Istanbul).

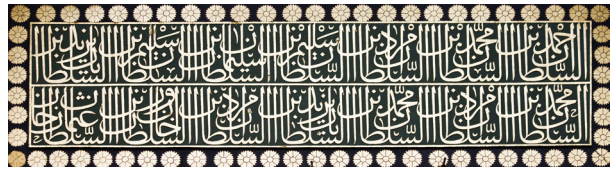(Fig. 24) Istanbul, Mosque of Sultan Ahmad (1617), detail of foundation inscription.

the wisdom of this may have resulted in the foundation inscription (849/1445) of the next major Ottoman mosque, the Uç Şerfeli at Edirne, being on one line on the central panel above the door, leaving the calligraphic innovation to the two vertical side panels which have religious inscriptions in a stunning mirror-image design.

In the meantime, the Karamanids had emulated the Timurid practice of emphasizing the corners with diagonally arranged words at the tiled *mihrab* of the Ibrahim Bey Imaret (1432) at Karaman (Fig. 23, now in the Çinili Kiosk at Istanbul).[55]

At the Fatih Jami' at Istanbul (1470) we also find three panels at the entrance door, arranged, like the Uç Şerfeli, as a central horizontal one (here in two lines) and two vertical side panels (each in seven lines), but here they form one continuous inscription. Interestingly, the last word of the central panel 'Uthman, is tilted 90 degrees, so that its *alif* could be extended horizontally through the whole length of the panel.[56]

The Persianate affiliations of the Çinili Kiosk (1472) are well-known; they include the material (tile mosaic) used for the foundation inscription, and its language, Persian. The inscription, in an elegant *Thuluth*, runs around the inside of the entrance *iwan*, and not surprisingly, like several contemporary Iranian examples, it does bend one word, *din*, at the second turn.[57]

It is very rare, in later Ottoman monuments, to find examples where a word is bent around a corner. A common trend in later foundation inscriptions, as

in the Selimiye at Edirne, for instance, is to frame them within cartouches. Surprisingly, this, arranged in eight cartouches on two lines, is located not over the main door to the prayer hall, but on the door to the courtyard.

The advantages of the single panel were still apparent, nowhere more than at the Istanbul mosque of Sultan Ahmad (The Blue Mosque), where, despite the use of Turkish inscription, the central panel (Fig. 24) shows only the genealogy of the reigning sultan, a perfect visual embodiment of his royal descent from a long-lived dynasty, with the framing vertical panels at the sides used for the rest.

Conclusion

The continuing conflicts between ease of design (or perhaps in the case of craftsmen, ease of application) and legibility, were, sooner than was the case with Quranic manuscripts, eventually resolved in favor of legibility and the gradual curtailment of the common earlier practice of bending words through turns, right-angled and otherwise. There are a number of possible explanations for this. One is the importance, at least for foundation inscriptions, of them actually being read, given their legal status as conveying ownership of the building.[58] Another is an increased reliance on calligraphers who drew up the inscriptions more accurately beforehand, in turn helped by the greater availability and reduction in the cost of the paper used to plan them. With inscriptions where a calligrapher is

unlikely to have been involved, such as epitaphs, the increasing literacy of the craftsmen may have been a factor. In vertical framing inscriptions the designers, at least occasionally, expressed their ingenuity by emphasizing the diagonals at the corners, particularly in Iran from the fourteenth century onwards. There Arabic, rather than Persian, was still the language for foundation inscriptions, so the paired verticals common in Arabic could still be emphasized for this.[59] In the vast majority of framing inscriptions the post and lintel format was employed. What is surprising is how long it took for the custom of spreading words over turns to disappear; it was not until the sixteenth century that the practice almost completely disappeared.

Notes

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1 See B. O'Kane, 'Monumental Calligraphy in Fatimid Egypt: Epigraphy in Stone, Stucco, and Wood', in A.S. Melikian-Chirvani (ed.), *The World of the Fatimids*, exh. cat. (Toronto, 2018): 154.

2 The author thanks the anonymous reviewer for several constructive comments.

3 R. Hillenbrand, 'Islamic Monumental Inscriptions Contextualized: Location, Content, Legibility and Aesthetics', in L. Korn and A. Heidenreich (ed.), *Beiträge zur Islamischen Kunst und Archäologie*, vol. 3 (Wiesbaden, 2012): 17.

4 E. Whelan, 'Writing the Word of God: Some Early Qur'an Manuscripts and Their Milieux, Part I', *Ars Orientalis* 20 (1991): 114.

5 Whelan, *Ars Orientalis* 20, 113.

6 Although one could also write 'should have been valued', since there is a surprising number of early foundation inscriptions where legibility seems not to have been a strong factor.

7 M. van Berchem, *Matériaux pour un Corpus Inscriptionum Arabicarum. Deuxième partie: Syrie de sud. Tome deuxième. Jérusalem 'Haram'* (Cairo, 1927), 248-250. Partial reproduction in M. Milwright, *The Dome of the Rock and Its*

Umayyad Mosaic Inscriptions (Edinburgh, 2016), 51, Fig. 2.8.

8 H.M. El-Hawary, 'The Second Oldest Islamic Monument Known: Dated AH 71 (AD 691). From the Time of the Omayyad Calif 'Abd-el-Malik ibn Marwan', *Journal of the Royal Asiatic Society* 2 (1932), 289-293.

9 E. Combe, J. Sauvaget and G. Wiet (ed.), *Répertoire chronologique d'épigraphie arabe*, vol. 1 (Cairo, 1931–1991), 13, no. 14. Illustrated in S. Blair, 'What is the date of the Dome of the Rock', in J. Raby and J. Johns (ed.), *Bayt al-Mqadis: 'Abd al-Malik's Jerusalem, Part 1*, (Oxford, 1992), Fig. 8; S. Blair, *Islamic Inscriptions* (Edinburgh, 1998), Fig. 3.16.

10 For instance, see the examples of division in epitaphs from Aswan in A.M. 'Abd al-Tawab, *Stèles islamiques de la nécropole d'Assouan*, 2 vols. (Cairo, 1977-82), Museum no. 34, Corpus no. 34, 1:35 (dated 236/851), Museum no. 235, Corpus no. 40, 1:41 (dated 240/855), Museum no. 128, Corpus no. 53, 1:54 (dated 242/857), Museum no. 227, no. 58, 1:59 (dated 243/857), Museum no. 267, Corpus no. 59, 1:60 (dated 243/857), Museum no. 212, Corpus no. 60, 1:61 (dated 243/858), Museum no. 88, Corpus no. 62, 1:63 (dated 243/858), Museum no. 47, Museum, no. 70, 1:71 (dated 244/858), Museum no. 293, Corpus no. 73, 1:74 (245/859), Museum no. 157, Corpus no. 79, 1:80 (246/861), Museum no. 10, Corpus no. 101, 1: 101 (dated 249/8640), Museum no. 258, Corpus no. 111, 1:112 (dated 250/865), Museum no. 15, Corpus no. 121, 1:122 (dated 253/867), Museum no. 109, Corpus no. 172, 2:23 (dated 262/876), Museum no. 171, Corpus no. 185, 2:36, dated 265/878), Museum no. 924, Corpus no. 299, 2:150 (dated 300/913); see others in G. Wiet, *Catalogue général du Musée Arabe du Caire: Stèles funéraires* vol. 9 (Cairo 1941), Museum no. 13447, Corpus no. 3599, 230 (dated 277/890), Museum no. 13529, Corpus no. 3600, 231 (dated 278/891), G. Wiet, *Catalogue général du Musée Arabe du Caire: Stèles funéraires* vol. 10 (Cairo 1942), Museum no. 1506/345, Corpus no. 3631, 29 (dated 358/969), Museum no. 2721/641, Corpus no. 3634, 31 (dated 36x/970-980), Corpus no. 3640, 37 (dated 547/1153), Museum no. 14587, Corpus no. 3645, 42 (dated 648/1251), Corpus no. 3657, Museum no. 10050, 53 (dated 727/1327). Occasionally, due to the exceptionally narrow format used, words could be broken more often, as in a foundation inscription of 294/906-7, 191 × 43 × 45 cm, which has six lines out of twenty-two

with broken words: S. Ory and D. Sourdel, 'Une inscription 'abbasside en Syrie du nord', *Bulletin d'Etudes Orientales* 18 (1963/1964), 225-226.

11 K.A.C. Creswell, *Early Muslim Architecture*, 2 vols. (Oxford, 1932-40), vol. 2, 298/9. Creswell noted that while the letter forms of the west and south sides were identical with those on the east and north sides, they were more carelessly executed. This in fact is seen most clearly in the impeccably straight horizontal baseline of the east and north sides, which becomes ragged on the west and south sides.

12 This ends one word short of the Quranic verse which is continued on the next panel.

13 S. Lamine, 'The Zaytuna: The Mosque of a Rebellious City', in G.D. Anderson, C. Fenwick and M. Rosser-Owen (ed.), *The Aghlabids and Their Neighbors: Art and Material Culture in Ninth-Century North Africa* (Leiden, 2017), 284-285.

14 Foundation Max van Berchem, *Thesaurus d'Épigraphie Islamique*, fiche 4381, citing Luṭfi 'Abd al-Jawwad, 'al-Naqa'ish al-mi'mariyya bi-kubra mudun ifriqiyya al-tunusiyya ila nihayat al-qarn al-khamis al-hijri/XIm.', *DREA, vol. I, Université de Tunis I* (Tunis, 1996), 162, no. 49. Good photographs of this are difficult to find, but the continuation of *al-Musta'in* around the corner is visible in A. Daoulatli, 'La Grande Mosquée Zitouna: un authentique monument aghlabide (milieu du ixᵉ siècle)', in G.D. Anderson, C. Fenwick and M. Rosser-Owen (ed.), *The Aghlabids and Their Neighbors* (see n. 12): 250.

15 T. Allen, *Five Essays on Islamic Art* (n. p., 1988), 83-4.

16 While portals in Iran continue to use the device regularly (but not exclusively), those in Turkey and the Arab world do so much less frequently; even where, as in Cairo, portals in the form of *pishtaq*s were a standard architectural feature. Also, even in Iran, foundation inscriptions, as in Turkey and Cairo, were usually placed within a frame that were horizontally around the inside of the portal.

17 *Répertoire Chronoligque d'Epigraphie Arabe* (Cairo, 1933), vol. 4, 196-7, no. 1581.

18 Daoulati, in Anderson, Fenwick and Rosser-Owen (ed.), *The Aghlabids and Their Neighbors*, 264, Figs. 13.5, 13.9; Lamine, in Anderson, Fenwick and Rosser-Owen (ed.), *The Aghlabids and*

Their Neighbors, 283, Fig. 14.4; L. Abdeljaouad, 'le Coufique des inscriptions monumentales et funéraires aghlabides', in G.D. Anderson, C. Fenwick and M. Rosser-Owen (ed.), *The Aghlabids and Their Neighbors*, 300, Fig. 15.5 (dated, by the author, 250/860).

19 *Taakhkhara* at the northeast (the first turn) and *junud* at the southeast (the third turn).

20 For several other examples, see O'Kane, in Melikian-Chirvani (ed.), *The World of the Fatimids*, 154.

21 Illustrated in O'Kane, in Melikian-Chirvani (ed.), *The World of the Fatimids*, 150.

22 O'Kane, in Melikian-Chirvani (ed.), *The World of the Fatimids*, 150.

23 B. O'Kane and B. Shehab, 'The Mausoleum of Yayha al-Shabih Revisited', in A. Ohta, M. Rogers and R.W. Haddon (ed.), *Art, Trade, and Culture in the Near East and India: From the Fatimids to the Mughals* (London, 2016), 53, Figs. 6-8.

24 For the date range see B. O'Kane, *The Appearance of Persian on Islamic Art* (New York, 2009), 27, n.1. I wrote there that Malikshah's visit to Damascus during 1086 might have inspired the patron to construct a large dome chamber in the Isfahan Mosque, but that was before the publication of Lorenz Korn's article showing that Malikshah had, contrary to previous interpretations, almost certainly not visited Damascus: 'The Sultan stopped at Halab. Artistic exchange between Syria and Iran in the late 5ᵗʰ/11ᵗʰ Century', in L. Korn, E. Orthmann and F. Schwarz (ed.), *Die Grenzen der Welt: Arabic et Iranica ad honorem Heinz Gaube* (Wiesbaden, 2008), 105-17. Korn gives a date of 479/1086-7 for the south dome chamber in this article, and 479/80 (1086/7) in his 'Saljuk Dome Chambers in Iran. A multi-faceted phenomenon of Islamic Art', *Archäologische Mitteilungen aus Iran und Turan* 39 (2007), 248, without specifying the reasons for this choice.

25 The fifteenth century date was suggested in Doris Behrens-Abouseif, *Cairo of the Mamluks* (London, 2007), 145-7. The presence of the blazon was first noted in Michael Meinecke, 'Zur mamlukischen Heraldik', *Mitteilungen des Deutschen Archdologischen Instituts, Abteilung Kairo* 28 (1972 [1973]): 227, pl. LIVg.

26 B. O'Kane, *The Mosques of Egypt* (Cairo, 2016), 74-5.

27 L. Golvin and R. Hillenbrand, *Islamic Architecture in North Africa* (London, 1976), Figs. 374, 213 and 331 respectively.

28 J.M.P. Vílchez, *Leer la Alhambra: Guía visual del Monumento a través de sus inscripiones* (Granada, 2010), 100-1.

29 Vílchez, *Leer la Alhambra*, 214-7.

30 Creswell, *The Muslim Architecture of Egypt* (Oxford, 1959), vol. 2, pls. 107a, 106b, 107b, 109a-b and 108a respectively.

31 A virtually identical design, also in wood, is found in the Mausoleum of the *Khanqah* of Baybar al-Jashinkir (1309), and in stucco on the *mihrab* of the Mosque of Almalik al-Jukandar (1319): Creswell, *The Muslim Architecture of Egypt*, vol. 2, pls. 113a, 114b.

32 Golvin and Hillenbrand, *Islamic Architecture*, Figs. 374 and 213 respectively.

33 Vílchez, *Leer le Alhambra*, 119 (entrance arch of the Hall of the Ambassadors), 115 (hot room in the bath), 214 (Hall of the Two Sisters), 322-3 (Torre de las Infantas).

34 It was the norm for monumental stone (as well as wood and stucco) inscriptions to be painted: see B. O'Kane, 'Medium and Message in the Monumental Epigraphy of Medieval Cairo', in M. Gharipour and I.C. Schick (ed.), *Calligraphy and Architecture in the Muslim World* (Edinburgh University Press, 2013), 416-7.

35 Following the dating of S. Blair, *The Monumental Inscriptions from Early Islamic Iran and Transoxiana* (Leiden, 1992), 78.

36 That on the left side is partially broken. As the inscription of this *mihrab* has never been published in its entirety, it is provided here, in the reading most kindly supplied by the Director of the Museum Abduvali Sharipov:

بسم الله الرحمن الرحیم قال النبي عليه السلام من حافظ على الصف المقدم والتكبيرة الأولى أعطاه الله من الأجر ما لا عين رأت و لا أذن سمعت ولا خطر على قلب واحد و لو صارت بحار السموات والأرض كلها مدادًا و لو أشجار أقلاما والملئكة كتابا لم يقدروا ان يكتبوا ثوابها

Basmala. The Prophet, peace be upon him, said: "Whoever takes the first row (in communal prayer) and the first recitation of '*Allahu Akbar*' God will grant him as a reward what the eye has not seen, what the ear has not heard and what no heart has conceived of, and if the seas of the heavens and earth became ink and the trees pens and the angels scribes, they would not be able to write your reward".

The incomplete text published in Blair, *Monumental Inscriptions*, 78, gave the impression that it was concerned with the front line of the Dar al-Islam, but with the complete version now available it is observed that it was selected for its appropriateness to those praying in a mosque.

37 A.U. Pope and P. Ackerman (ed.), *A Survey of Persian Art*, 6 vols. (London and New York, 1938/9), pl. 391.

38 Pope and Ackerman (ed.), *A Survey of Persian Art*, 6 vols., pl. 399.

39 Pope and Ackerman (ed.), *A Survey of Persian Art*, 6 vols., pls. 392-3.

40 Pope and Ackerman (ed.), *A Survey of Persian Art*, 6 vols., pl. 398 (the caption incorrectly mentions a mausoleum).

41 The most complete source of illustrations is S. Blair, 'Art as Text: The Luster Mihrab in the Doris Duke Foundation for Islamic Art', in A. Korangy and D.J. Sheffield (ed.), *No Tapping around Philology: A Festschrift in Honor of Wheeler McIntosh Thackston Jr.'s 70th Birthday* (Wiesbaden, 2014), 407-35.

42 To give just two Timurid examples, the foundation inscriptions of the Ulugh Beg Madrasa at Samarkand (1418) (Pope, *Survey*, pl. 421) (incorrectly identified) and the Funerary Mosque at Taybad (1444). A Qara Qoyunlu example is the Darb-i Imam at Isfahan (1453), where, most surprisingly, the name of the patron is not centered but angled around the first corner.

43 At the Mosque of Gawhar Shad at Mashhad (1418) (the best reproduction is in Mahdi Sahargard, *Masterpieces of Astan-e Quds-e Razavi: Inscriptions of Goharshad Mosque* [Mashhad, 2013], 77), the Funerary Mosque at Taybad (1444); the Mosque of the Shah-i Zinda (mid-15th century), the Mazar of Abu'l-Walid at Azadan (*c*. 1475-1500) and the Chihil Sutun Mosque at Ziyaratgah (*c*. 1490-1500).

44 Survey, pls. 430-1. The Mosque was built adjacent to the bazaar from where the main entrances seem to have been, which precluded a tall entrance *ayvan*, the usual place for a foundation inscription.

45 Such framing inscriptions are not all that common in Mughal architecture, but the best known ones,

on the four faces of the Taj Mahal, by calligrapher Amanat Khan, are all of post-and-lintel format: E. Koch, *The Complete Taj Mahal and the Riverfront Gardens of Agra* (London, 2006), 157.

46   Here too there are occasional instances where words are continued around corners, such as at the Great Mosque of Divriği (1228), where *ta'ala* spans the first turn.

47   S. Redford, 'The Alaeddin Mosque in Konya Reconsidered', *Artibus Asiae* 51 (1991), 54-74.

48   Konya, Sirçali Madrasa (1242); Sivas, Gök Madrasa (1271); Konya, Beyhakim Mosque (1270-80); Beyşehir, Eşrefoğlu Mosque (1296), illustrated respectively in M. Meinecke, *Fayencedekorationen seldschukischer Sakralbauten in Kleinasien*, *Deutsches Archäologisches Institut Istanbuler Mitteilungen* 13 (Tübingen, 1976), pls. 26/1, 50/3, 35/2 and 10/1.

49   At the Kayseri Külük *Jami'* (1280-90), Meinecke, *Fayencedekorationen seldschukischer Sakralbauten in Kleinasien*, pl. 20/1, and the Ankara Arslanhane Mosque (1290): https://upload.wikimedia.org/wikipedia/commons/c/c7/Arslanhane Mosque Mihrab 01.jpg.

50   E.H. Ayverdi, *Osmanli mi'marisinin ilk devri Vol. 1: Ertuğrul, Osman, Orhan Gaziler, Hüdâvendigâr ve Yıldırım Bayezid. 630-805 (1230-1402)* (Istanbul, 1989), 59, Fig. 72.

51   Ayverdi, *Osmanli mi'marisinin ilk devri Vol. 1: Ertuğrul, Osman, Orhan Gaziler, Hüdâvendigâr ve Yıldırım Bayezid. 630-805 (1230-1402)*, 80-81, Fig. 103. The current inscription at this point is a later restoration.

52   Ayverdi, *Osmanli mi'marisinin Çelebi ve II. Sultan Murat Devri*, 19-22, Fig. 29.

53   Ayverdi, *Osmanli mi'marisinin Çelebi ve II. Sultan Murat Devri*, 88-91, Figs. 139-148.

54   Ayverdi, *Osmanli mi'marisinin Çelebi ve II. Sultan Murat Devri*, 94, Fig. 152.

55   Meinecke, *Fayencedekorationen seldschukischer Sakralbauten*, cat. 48, vol. 2, pl. 19/1.

56   E.H. Ayverdi, *Osmanli mi'marisinin Fatih devri 855-886 (1451-1481)* (Istanbul, 1989), vol. 3, 385-6, Figs. 601-3.

57   The word is not in the larger lower foundation inscription, but on the upper smaller verse inscription: E.H. Ayverdi, *Osmanli mi'marisinin Fatih devri 855-886 (1451-1481)* (Istanbul, 1989), vol. 4, 747, Fig. 1056, 754-5.

58   Perhaps best exemplified by al-Nasir Muhammad's reluctance to remove the name of his usurper, Baybars al-Jashinkir, from the facade of the latter's *Khanqah* in Cairo: O'Kane, in Gharipour and Schick (ed.), *Calligraphy and Architecture in the Muslim World*, 416, Fig. 23.1.

59   It was not until the nineteenth century in Iran that Persian generally supplanted Arabic for foundation inscriptions. In Ottoman territory, Turkish began to replace Arabic in foundation inscriptions more often from the late sixteenth century onwards, but its still Arabic-laden vocabulary would have entailed little difference in strategies of visual layout. For the background to these changes see O'Kane, *The Appearance of Persian*.