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Mamluk metalwork fittings in their artistic and architectural context

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CHAPTER 3

Inspiration and Aftermath

INTRODUCTION

Metalwork fittings were certainly not unique to the Mamluk period. Fatimid, Zengid, and Ayyubid doors and doorknockers and later Ottoman metalwork fittings demonstrate the continuation of an existing tradition in Egypt and Syria. Besides being embedded into preceding traditions, Mamluk metalwork fittings were also linked to various other contemporary crafts, in which either identical techniques were used, such as the inlaying technique applied in a masterly fashion on portable metalwork objects, or overlapping designs and decorative motifs were found, such as the star patterns used not only on grilles in wood, marble, and stucco but also on woodwork *minbars*, Qurʾān frontispieces, and bookbindings. Given these diverse sources of inspiration, the question arises to what degree these existing traditions were copied and what adaptations and innovations in the development of fittings Mamluk metalworkers produced.

For each type of fitting, not only their predecessors in metal will be presented here but also contemporary versions executed in various materials, so as to distinguish the overlaps and differences between these different traditions. In addition, the legacy of each type of Mamluk door, window grille, and doorknocker in Ottoman times will be discussed. And finally, the question of the interchangeability of designs between craftsmen in the Mamluk period will be addressed to see how these patterns are interrelated.

3.1 DOORS

3.1.1 *Overall star pattern doors*

The metalworkers responsible for the manufacture of Mamluk overall star pattern doors might well have been inspired by pre-Mamluk metal overall star pattern doors installed in buildings in the region, the craft of metalwork portable objects, and the craft of woodworking. In what follows, attention will focus on the overlaps and differences in design and technique between the three aforementioned media and Mamluk metalwork overall star pattern doors.

There are six metalwork doors covered with overall star patterns extant in the region that precede the Mamluk specimens. They are found in a variety of buildings, among which are a mosque, a mausoleum, a palace and a *bīmāristān* that were built between 549/1154 and 657/1259 and which are variously located in Cairo, Damascus, and the Jazīra.¹ When these are compared among themselves and to the later tradition of

¹ These are: Damascus, the entrance door (cat. no. I/1: Plate 266) of the *bīmāristān* of Nūr al-Dīn b. Zengī (549/1154); Cairo, the entrance door (cat. no. II/1: Plate 271) of the mosque of al-Šāliḥ Ṭalāʾī (555/1160); Āmid (now Diyarbakr), the entrance door (cat. no. III/1: Plate 273) of the palace of Muḥammad b. Qarā Arslān (570–81/1174–85), the description of which is handed down by its maker al-Jazarī; Cairo, a door (cat. no. V/1: Plate 279) in the mausoleum of al-Imām al-Shāfiʿī (608/1211); Cizre (formerly Jazīrat b. ʿUmar), the entrance door (cat. no. VI/1: Plate 280) of the Ulu mosque (605–39/1208–42); Mosul, the entrance door (cat. no. VII/1: Plate 282) of the mausoleum of al-Imām ʿAwn al-Dīn (631–57/1233–59).

Mamluk doors, it becomes clear that the basic components that characterize Mamluk overall star pattern doors were already available in these pre-Mamluk examples. As will be shown below, however, the designing process had not yet been crystallized, leaving room for individual approaches and a further formalisation of the design by Mamluk metalworkers.

In the arrangement of the star patterns in the central field, Mamluk metalworkers used the same methods as their predecessors had done. The Mamluk designers, for example, employed identical systems for the creation of the star patterns as their precursors, namely by composing the design using only infill plaques, by doing the opposite through employing framing plaques only, or by using a combination of both.² Moreover, the two ways in which the star patterns were organised, either in a non-hierarchical mode made up of regular even-sized star units that were closely intertwined or units organized in a hierarchical mode, consisting of star units of different sizes had already been used in pre-Mamluk doors. In addition, even the alternation of flat plaques with embossed ones standing out in relief had already been part of the pre-Mamluk metalworker's repertoire, as described by al-Jazarī.³

The inclusion of inscriptions onto an overall star pattern door was also not typically Mamluk, as their presence is attested on a number of pre-Mamluk doors. However, the extant pre-Mamluk specimens show that there was not yet any degree of concord on the number of inscription bands, as they range from none whatsoever in the case of the Cairene doors (cat. nos. II/1 and V/1) to three on the door of Āmid (cat. no. III/1: Plate 273). Nor was a standardized location allocated to inscriptions: the metalworkers felt free to position them above the main field, as can be seen on the doors from Damascus (cat. no. I/1: Plate 266) and Cizre (cat. no. VI/1: Plate 280); right through the central star pattern as on the Mosul door (cat. no. VII/1: Plate 283); or encompassing the star field on three sides, as al-Jazarī's drawing of the door (cat. no. III/1: Plate 273) in Āmid shows. Mamluk metalworkers, after some initial experiments with single inscription bands, eventually hit on the aesthetic of symmetry by locating an oblong inscription band above and one below the main field.

The communalities between the content of the inscriptions used on pre-Mamluk and Mamluk doors suggest the existence of a repertoire deemed suitable for doors before Mamluk times, although it was more restricted than what is found on Mamluk doors. Already in the 12th and 13th century inscriptions recording the name and titles of the patron preceded by the introductory phrase 'glory to our lord' (*'izz li-mawlānā*) are common, as the writing on the doors from Damascus (cat. no. I/1), Āmid (cat. no. III/1) and Cizre (cat. no. VI/1) show. Sometimes religious phrases were added to the statement of patronage, one of which is, remarkably, found in a secular context on the palace door in Āmid. Its position above the main star pattern field, which is given predominance over the titles of the patron aligned on the lateral sides, gives the content an added value. It reads: 'Power belongs to God the One the [Almighty]' (*al-mulk li-llāh al-wāḥid al-[qahhār]*). Besides inscriptions telling of patronage and religion, the door (cat. no. VII/1) installed in the mausoleum of 'Awn al-Dīn in Mosul unusually cites the name of the maker, the only known example of a signature on extant pre-Mamluk and Mamluk overall star pattern doors. The maker's pride in his work is shown not only by the execution of his name in thick separate words cast in relief and its prominent position

² On the pre-Mamluk doors in Cairo the design was built up of openwork infill plaques only, a practice that continued to be used on a number of overall star pattern doors in Mamluk Cairo. In Damascus and Mosul the metalworkers restricted themselves to creating star patterns by outlining them with framing plaques, an arrangement that is also found on the only Mamluk star pattern door extant in Syria, the entrance door (cat. no. 22/1: Plate 46) of the *bīmāristān* of Arghūn al-Kāmilī in Aleppo. Finally a combination of both framing and infill plaques was used in both Āmid and Cizre, a solution that became the preferred method on Mamluk doors.

³ Jazarī (1990), 332.

right in the central field along an oblong line but also by virtue of the fact that it is the only inscription on the entire door. It does not come as a total surprise, however, that this single presence of a signature occurs in Mosul, the city-state renowned as a centre of metal inlay-work during the first half of the 13th century. The numerous extant metalwork vessels carrying the signatures of craftsmen working in or associating themselves with this centre by adding the *nisba* al-Mawṣilī to their names attest to the common practice of signing works of art relating to Mosul.⁴ This tradition might well have prompted ‘Umar b. al-Khiḍr, the artist of this door, to add his name to it. This practice, however, never became common among the metalworkers responsible for the overall star pattern doors in Cairo, irrespective of the fact that a number of craftsmen that refer to themselves with the *nisba* al-Mawṣilī came to work in both Cairo and Damascus.⁵

With respect to technique, the Mamluks continued the traditions already established in Cairo, Damascus and the Jazīra. The suitability of the casting technique for easily reproducing the large number of identical plaques required to compose a star pattern had already caused it to take root among the pre-Mamluk door-makers, and its practicality clearly made it favoured by the Mamluks too. Although the casting technique was also used for the inscription bands, the makers of the doors in Cizre (cat. no. VI/1: Plate 280) and Mosul (cat. no. VII/1: Plate 283) executed them rather differently from their Mamluk counterparts. The former cast thick separate words, which stood out in high relief, creating a sense of robustness.⁶ This aesthetic was not taken on by the Mamluks, who introduced flat openwork inscription bands instead. As for engraved inscription bands, they were already used before Mamluk times on the entrance door (cat. no. I/1: Plate 268) to the *bīmāristān* in Damascus.

To what extent could Mamluk metalworkers have really been directly influenced by their forerunners in Cairo, Damascus, and the Jazīra? In the case of the pre-Mamluk doors in Cairo, it is probable that their accessibility and visibility within the city did indeed exert an influence on Mamluk metalworkers. The Mamluk metalworker responsible for the entrance door (cat. no. 22/1) to the *bīmāristān* of Arghūn al-Kāmilī – the only extant Mamluk overall star pattern door in Aleppo – might also have been inspired by the older tradition known in Damascus, although the contemporary tradition as present in Cairo in Mamluk times might have been a source of inspiration as well. As for the doors in the Jazīra, only the door in Mosul offers a credible link between pre-Mamluk and Mamluk doors, given its date of manufacture between 631/1233 and 657/1259, and the evidence of metalworkers using the *nisba* al-Mawṣilī who came to work in Cairo in search of patronage, as has already been pointed out earlier. The ideas travelling with them might have inspired Mamluk door-makers.

⁴ One specimen, the famous Blacas ewer, explicitly mentions Mosul as its place of manufacture. A strong link to the city is attested on a few other pieces, whose inscriptions reveal both the name of the patron Badr al-Dīn Lu’lu’, the independent ruler residing at Mosul, and the craftsmen’s signatures, completing their name with the *nisba* al-Mawṣilī. On the majority of objects, the connection to Mosul is implied only by the use of the *nisba* al-Mawṣilī, leaving uncertainty about the place of manufacture. Rice (1953a), 231 lists 11 Mawṣilī craftsmen. In a later article, Rice (1957), 287 lists five craftsmen, three of whom he did not mention before. Wiet (1932), 18–22 lists eighteen objects with Mawṣilī signatures, 11 of which do not overlap with Rice’s two lists. They are nos. 15, 21, 22, 26, 27, 29, 30 or 31, 34, 35, 38, and 39.

⁵ Six extant objects have come to light combining the *nisba* al-Mawṣilī with the place of manufacture (Cairo or Damascus). They are: 1: A ewer, signed by Ḥusayn b. Muḥammad al-Mawṣilī, made in Damascus in 657/1259, Paris, Musée du Louvre, published in Wiet (1932), 179, no. 73; 2: A candlestick, signed by Muḥammad b. Ḥasan al-Mawṣilī, made in Cairo in 668/1270, Cairo, Museum of Islamic Art, inv. no. 1657, published by Wiet (1932), 47; 3: A ewer, signed by ‘Alī b. Ḥusayn b. Muḥammad al-Mawṣilī, made in Cairo in 674/1275, which at the time that it was published was part of the Gaupil collection, published in Wiet (1932), 20, no. 32; 4: A candlestick, signed by ‘Alī b. Ḥusayn b. Surkhak al-Mawṣilī, made in Cairo in 681/1282, formerly in the Harari Collection, no. 39, published in Wiet (1932), 9; 5: A candlestick, signed by ‘Alī b. Kasirat al-Mawṣilī made in Damascus in the year 697/1297, Cairo, Museum of Islamic Art, inv. no. 128, published by Allan (1986), 50; 6: A plate, signed by Ḥusayn b. Aḥmad b. Ḥusayn al-Mawṣilī, made in Cairo, no date but manufactured before 721/1321, the year in which its patron, the Rasulid Sultan al-Malik al-Mu’ayyad Dawūd, died, New York, Metropolitan Museum, published in Wiet (1932), 21, no. 39.

⁶ Inscriptions in identical fashion are found on two somewhat earlier panelled doors (cat. no. IV/1: Plate 276, dated 608/1211 and cat. no. IV/3: Plate 278, dated 606/1208–9) ordered by al-Malik al-Zāhir Ghāzī for the citadel in Aleppo. See Herzfeld (1954–56) I, 86–88 and II, pl. 36b.

Besides finding inspiration in older specimens, the makers of Mamluk fittings shared designs, decorative motifs, and techniques with their contemporary colleagues who manufactured portable metalwork objects. Were these two crafts closely linked or did each develop its own aesthetic? It is impossible to address this question in full within the current scope of this study, as the categories of portable objects are not only numerous but there is still no comprehensive study of the stylistic development of portable objects throughout the Mamluk period. Only some preliminary conclusions will be drawn here. Generally speaking, the layout of these two categories of objects is governed by a subdivision of the surface in multiple parts, in which a symmetrical arrangement is preferred. The recurring subdividers of the field are roundels and oblong bands of various size. This generic overlap in the use of symmetry and compartmentalisation is neither surprising nor unique, as these are common features in Islamic art on the whole.

There are, however, clear differences between the subdivision of the field on portable objects and on doors. Firstly, portable objects show a much more varied division of the surface into decorative zones than the standardized segments on doors. This is most probably linked to the fact that portable objects form a diverse group of items, all varying greatly in shape and function. That these different shapes bring about a greater variation in the division of the fields should therefore come as no surprise. Secondly, the different component parts of which portable objects are composed, such as the socket, neck, shoulder, and body in the case of a candlestick, is a natural stimulus for augmenting the number of decorative zones. And even when the bodies are physically one, as is the case with rosewater sprinklers, for example, the addition of decorative zones helps to articulate certain areas. Thirdly, one should not underestimate the difference in size and purpose of portable objects, on the one hand, and doors, on the other hand. Whereas the former are comparatively small and made to be admired from close quarters, with each part vying for attention, the purpose of star pattern doors is to attract attention from afar, something which is reflected in the choice of a large uninterrupted central field. And fourthly, the shape of an object directly affects the decoration of its surface. On portable objects of curvilinear shape from the 14th century onwards, the epigraphy is always interrupted by medallions, whereas on doors and on rectangular or square-shaped objects, such as pen-boxes or Qur'ān-boxes, they are presented without any interruption.⁷ Here, it is the bend of the surface that moves the craftsman to choose a certain design, whether the object is used as a private portable object or as a fitting fixed in a public space.

Metalworkers responsible for portable metalwork objects and fittings favoured identical patterns, as can be seen in the recurrent types of geometric, floral, and epigraphic patterns. There is, however, a clear distinction between these two categories of metalwork objects in the focus of these motifs: on overall star pattern doors, spatial priority is given to geometric and foliate motifs, with star patterns filling the dominating central field while vegetal elements fill the plaques of the main field and the border bands. Epigraphy is restricted to standardized oblong inscription bands. On portable objects a different priority can be sensed: in the early Baḥrī period figural imagery often recurs on portable objects, something that is quite uncommon on fittings given their installation in religious buildings. And, especially from the early 14th century onwards, inscriptions start to often dominate the field of portable objects while floral and geometric motifs play a subsidiary role, either in the background or filling minor spaces. The use of different script styles in different zones of an object underlines the creative response to the importance given to inscriptions

⁷ Some candlesticks manufactured at the end of the 13th century were, however, decorated with uninterrupted epigraphic bands. For their development, see Allan (1986), 50–51. For examples of pen-boxes with uninterrupted epigraphic bands, see Atıl (1981), 82–85, nos. 23 and 24; for a Qur'ān-box, see Atıl (1981), 86–87, no. 25.

on portable objects. This development, in which epigraphy came to play a dominant role in the decoration of portable objects did not affect the makers of overall star pattern doors. They remained close to their own aesthetic, a preference that might be linked to their desire to continue a tradition that was already established for doors in pre-Mamluk times. In addition, the impracticality of distributing inscriptions in roundels or oblong bands on the huge flat surface of a door while still maintaining a strong optical effect for the viewer from afar might have also impeded the introduction of this new fashion on doors.

There is, however, one category of metalwork objects that shares the dominance of geometric and foliate patterns with that of overall star pattern doors. This group consists of the vase-shaped lamps and the so-called *tannūrs*, lamps with faceted bodies that are multiple tiered, which were intended to be hung in public religious places.⁸ Star patterns and geometric designs based on entwined circles cover their openwork bodies while foliate motifs fill the star units. Three different reasons might be proposed to explain this predilection for such motifs on these lamps. Firstly, the Mamluks might just have continued the pre-Mamluk tradition of vase-shaped lamps, which shows a similar preference for geometry.⁹ Besides this, the strong lines of star patterns executed in openwork in order to allow the light to radiate might have been preferred to express a bold and robust image, even when looked upon from afar. And thirdly, it is not improbable that the *tannūrs* especially were made in the same workshops as the overall star pattern doors, for they share not only identical techniques as casting and piercing but both combine star patterns in the main field and a trefoil border crowning or surrounding the central zone.¹⁰

Sometimes decorative motifs common on portable objects were transferred to fittings. The door (cat. no. 24/6) in the *qibla* wall of the *madrasa* of Sultan al-Nāṣir Ḥasan is the best example showing the exchange between the crafts. Its layout has the features typical for an overall star pattern door, but in its choice for decorative patterns, the maker was influenced by motifs found on contemporary or slightly earlier inlaid portable objects. For the first time, besides the customary leafed stems, foliage such as the lotus flower and the gold-inlaid 5-petalled flower, which had become popular on metalwork portable objects in the time of Sultan al-Nāṣir Muḥammad and in the second half of the 14th century, respectively, are introduced on a fitting.¹¹ In addition, a playfulness in the distribution of inscriptions of the kind current on portable objects, is introduced here on a door, so that besides the usual oblong inscription bands located above and below the main star pattern field, inscriptions are set in the central tier of 3-tiered roundels (Plate 68) enclosed by stars or octagons, which are dispersed on the geometric field and on the border bands, in addition to which inscriptions in radiating design are placed on the doorknockers of the door. This playful approach to calligraphy had already appeared on portable objects from the time of Sultan al-Nāṣir Muḥammad and had become a standard feature of Mamluk metalwork portable objects.¹² It is not difficult to understand why these decorative motifs initially appeared on portable objects. Firstly the relatively small size of portable objects must have invited metalworkers to concentrate on the details of the decoration, the addition of innovative elements being a way for metalworkers to distinguish themselves from the rest. Moreover, their

⁸ For an overview of these two types, see Behrens-Abouseif (1995), 11–42.

⁹ Behrens-Abouseif (1995), 25–26, 31–33, pls. 12–14.

¹⁰ For trefoil border bands crowning the tiered bodies of several *tannūrs*, see Behrens-Abouseif (1995), 16–19, pls. 3–6.

¹¹ The lotus flower is found for example on the Qurʾān-box, in Cairo, the Museum of Islamic Art, inv. no. 183 and on a basin made for Sultan al-Nāṣir Muḥammad, London, the British Museum, inv. no. 51 1–41, both datable to circa 1330 AD and published by Atıl (1981), 86–91, nos. 25 and 26, respectively. Identical 5-petalled flowers are used on a lamp, datable to the second half of the 14th century, housed in Cairo, the Museum of Islamic Art, inv. no. 15123 and published by Atıl (1981), 98–99, no. 32.

¹² These are visible on the basin mentioned in the previous note and on the *kursī* made for the same sultan, now in Cairo, the Museum of Islamic Art, inv. no. 139, and published in Wiet (1932), 14–18, pls. I–II.

three-dimensionality stimulated the viewer to pick an object up and to turn it around and thereby necessitated this focus on detail. Secondly, it is not surprising to find new decorative elements on objects in the private sphere where the distance between the patron and the object was negligible. After such new elements had become fully integrated into the decorative repertoire, some of them were transferred to large fittings where they could be admired by the public.

The decision to cover the entire surface of the door with inlay also must have been inspired by the existing tradition in Mamluk portable objects. No expense was spared: silver and gold cover the entire surface of the door inclusive the framing elements and the infill plaques of the central field, the inscription bands, and the borders of the framework (Plates 69 to 71). By inlaying all plaques, the design was made subordinate to the decoration so that each plaque shimmers in its own right.¹³ It is not unlikely that a master craftsman of portable objects obtained the commission for the door and applied the technique he knew so well to an object for which he was not a specialist. If he was indeed unfamiliar with an object of such relatively vast measurements and with a huge flat surface, he might well have chosen to adhere closely to the already standardized layout of this type of door but to concentrate on that which was most familiar to him, namely the execution of the intricate details of the decoration.

Besides the inspiration derived from earlier and contemporary metalworking traditions, Mamluk metalworkers might have used the craft of woodwork as a source of inspiration, both in designing doors with a large field dominated by star designs and in the application of certain techniques. The idea of filling a large central field with uninterrupted star designs was, in all probability, borrowed from woodwork furnishings, especially of the kind applied on *minbars* and *mihrābs* in Fatimid and Ayyubid times, when a shift took place from geometric and floral designs enclosed in small rectangular panels to an uninterrupted field filled with continuous star patterns. It is precisely within the time frame of this development that the earliest overall star pattern doors (cat. nos. I/1 and II/1) were executed in metal. As this development is built upon evidence not from woodwork doors but from *minbars* and *mihrābs* only, this topic will be addressed in more detail in Section 3.5, where shared designs among a variety of crafts will be discussed.

Let us now turn to wooden doors with an overall star pattern design to see whether overlaps are discernible between doors executed in metalwork and woodwork. The tradition of wooden doors dominated by geometry was developed in Fatimid and Ayyubid times, as exemplified by a door in the *minbar* of the *mashhad* of Ascalon ordered by Badr al-Jamālī in 484/1091¹⁴ and a door in the mausoleum of al-Imām al-Shāfi‘ī in Cairo.¹⁵ Mamluk woodworkers, whether manufacturing doors for Islamic or Coptic buildings, followed the layout and decorative motifs already present on these doors.¹⁶ Each leaf is dominated by a large vertically placed rectangular field filled with star units that are composed of framing strips of wood with carved indentations that surround infill plaques decorated with intricately carved foliate motifs. An oblong plaque filled either with inscriptions or with geometric or floral patterns is positioned above each star pattern field.¹⁷ A plain border frame surrounds the star pattern on all four sides. This plain border separates the star

¹³ This differs clearly from the aesthetic on portable objects, where a more effective play of contrast is usually secured by the subdivision of the objects into fields of variable sizes. It should be kept in mind that their much smaller scale, which greatly reduced the surface to be inlaid, also facilitated this diversity. Moreover, sculptural three-dimensionality and the curvilinear nature of many objects perhaps invited the metalworker to exaggerate certain areas through inlay and also, it seems, encouraged him to take a playful attitude towards filling the surface.

¹⁴ Vincent (1923) I, 219–23, and II, pl. 26.

¹⁵ Creswell (1952–59) II, 67, pl. 24c.

¹⁶ For examples of this type of door, see Raymond (2002), 273, nos. 302–305; Piotrovski & Vrieze (1999), 154–55, no. 107; ‘Abd al-Wahhāb (1946) II, 93, pl. 139; 95, pl. 142; 96 pl. 140.

¹⁷ In doors intended for churches, a cross was often inserted in the centre of these foliate motifs, as is visible on a plaque, now in Cairo, Museum of Islamic Art, inv. no. 5620 and published in Atıl (1981), 207, no. 103.

pattern on the two leaves from each other when the doorleaves are closed. Mamluk woodworkers did greatly enhance the colour scheme of these wooden doors in that they successfully combined rosewood or acacia, used for the support and the framing strips, with ivory and ebony for the carved infill plaques.

Although these wooden overall star pattern doors share their basic components with those of their metalwork counterparts, there are clear differences between the two in layout and design. Firstly, the overall star pattern field is much less dominant and imposing on woodwork doors: their space is limited, as the rectangular star pattern fields are comparatively narrow and elongated and, more importantly, the non-decorated framing that surrounds the star pattern field on each side isolates the two sets of star units from one another, which weakens the impact of the geometric design. In the same manner the oblong epigraphic plaques at the top and the base of the door are separated from one another, and their size greatly reduced. In comparison to the elongated geometric fields these plaques are disproportionately small. In addition, the absence of decorated borders is striking. The combined effect of all these parameters is that the star design is neatly fitted into the designated space, but it does not transform the surface of the door, as is the case on metalwork doors. The woodworkers concentrated far more on the details of the intricately carved infill plaques than on giving prominence to the star design itself.

These two traditions of woodworking and metalworking probably lived side by side, each holding fast to its own aesthetic with respect to the layout. An overlap between the two traditions is, however, to be found in the technique that is used. Firstly, the introduction of flat openwork inscription bands on metalwork doors might have been spurred by woodworkers who, from Ayyubid times on, carved their inscription bands into the wood in an openwork mode. Secondly, the metalworker responsible for the entrance door (cat. no. 9/1: Plate 28) to the *khānqāh* of Baybars al-Jāshankīr exploited the effect of gouging out grooves in all the framing plaques just so that they could house the nails which would then be covered with copper strips, a technique that had already been common amongst woodworkers making doors. It simultaneously hid the nails from sight and added a different colour to the framework, which accentuated the linear effect of these framing plaques. This multicoloured effect was also employed on woodwork doors.¹⁸ In addition to this, the metalworker incised these copper strips with vegetal motifs, a method already applied earlier on the surround of the portable *mihrāb* of Sayyida Nafīsa, made between 532/1137 and 541/1147.¹⁹ And thirdly, an exchange of techniques between the two crafts is expressed by al-Jazarī explicitly mentions the application of techniques originally used for wood such as joinery (*kārzawān*), grooving (*ḥafīr*), and chiselling (*tanjīr*) as part of the making of his metal door.²⁰

Irrespective of this exchange of ideas, Mamluk metalworkers relied mostly on metalworking techniques that were already well established. The advantage inherent to sand-casting for the easy multiplication of identical plaques might have spurred artisans in the first place to create doors consisting of repetitive units, such as the overall star pattern door. It offered an economically sound alternative to wooden doors whose numerous openwork plaques needed to be carved out individually by hand.

Of the three possible sources of inspiration that were discussed for Mamluk metalwork overall star pattern doors, the existence of a strong relationship with the tradition of pre-Mamluk metalwork doors of the same type has become apparent. The correspondences in terms of technique, layout, and ornament show that Mamluk metalworkers were aware of – and indeed continued – this already established design for doors.

¹⁸ For a woodwork door with the same inlaying technique, see a door in Paris, the Louvre, published in Raymond (2002), 273 (no. 302).

¹⁹ Pauty (1931), 65–66 (no. 421), pls. 75–76; David-Weil (1931), 4–5 (no. 421).

²⁰ Jazarī (1990), 332.

They, however, developed this type further by looking for inspiration in the decorative motifs and techniques used on contemporary portable metalwork objects and woodwork doors. During the 14th century in particular, there seems to be a special relationship between overall star pattern doors and the monumental vase-shaped lamps and *tannūrs*, all of which make use of identical techniques and decorative motifs.

Now that three possible sources of inspiration that were available to the Mamluk metalworkers have been discussed, it is time to consider the Mamluk legacy. Despite the popularity of overall star pattern doors in Mamluk times, none of the extant entrance doors in Ottoman buildings in Egypt and Syria are of this type. This discontinuity might be explained by such causes as a lack of experienced metalworkers, a shortage of funds compelling builders to economize on laborious and time-consuming decoration, or a deliberate choice to move away from an aesthetic that was strongly connected to Mamluk architecture. Of these various suggestions, the latter seems the least probable, as builders in the 16th and 17th century still show a strong inclination to use typically Mamluk features within their new edifices.

The end of the 19th century shows, however, a renewed interest in Mamluk overall star pattern doors manifested, on the one hand, in the restoration efforts of the Comité and, on the other hand, in the revival of Mamluk-style artefacts. Certain Mamluk doors show that the Comité not only aspired to conservation but also often added considerable parts to various fittings in order to bring the objects back into a complete state. Sometimes the restorers clearly marked the renewed pieces by engraving the *hijrī* date of the restoration on them. On other doors they were even more explicit as texts were added, often positioned in one of the oblong inscription bands, telling of the Comité's efforts. In case these latter signs are missing, it is still often possible to differentiate between authentic and restored pieces by looking both at the execution of the technique and at the decoration. This is clearly exemplified by the entrance door (cat. no. 53/1) of the *madrasa* of Sultan al-Ghūrī (910/1504) on which the sharp, superficial engravings on the surface of the newly added elements combined with their sharp edges contrast clearly with the deeper grooved lines of the Mamluk parts that have a weathered look through the accumulation of dirt and the smoothing of the surface over time. Moreover, Mamluk metalworkers managed to sink the background consisting of curls and whirls slightly by applying deep engraving, which clearly differentiates the earlier work from the newly added pieces. These were not only incised much more superficially but their decoration consisted of a pattern of broad bifurcated leaves that was much more repetitive than the original Mamluk floral motifs.

Besides the interest in overall star pattern doors connected to restoration, a number of complete star pattern doors and some loose pieces give evidence of the late 19th-century interest of metalworkers to revive Mamluk models. This revival did not stand on its own but instead covered a much wider field, for it can be recognisable both in public religious buildings, such as the neo-Mamluk façades of the al-Rifā'ī mosque in Cairo, and in private commissions, often ordered by members of the foreign community such as the French Embassy in Gīza. In the latter, designs executed in marble, wood, and metal and based upon the repertoire customary in Mamluk times were combined with spolia taken from demolished Mamluk buildings, such as the two metalwork overall star pattern doors (cat. nos. 1/1 and 58) that are installed in the entrance and in the courtyard of the embassy, respectively. To complete the Mamluk feel, fittings such as glass and metal lamps in the Mamluk style were created.

The revival of metalwork overall star pattern doors is best illustrated by the door the inscription of which states it was made in 788/1386 in the name of Sultan al-Zāhir Barqūq and which closely resembles the

door still located in the *madrasa* and *khānqāh* of the said ruler.²¹ According to Herz, it was made in 1892 by the metalworker ‘Alī al-Shiyashī for the Cairo street in the Chicago World Fair, but as no agreement could be reached on its price the door remained in Cairo where it came into the hands of the then well-known dealer Hatoum.²² Today discussion about the door has been rekindled by Fehérvári who claims that the door is Mamluk and was indeed made in 788/1386 as the inscription records.²³ Four arguments, however, cast doubt upon his assertion. Firstly, it is problematic to accept the date, which terminates the inscription in the oblong band at the top, as genuine because of the order in which it is expressed, i.e. the unit – eight – is positioned between the hundred and the decade, while Mamluk dates usually follow an ascending or descending sequence.²⁴ To the best of my knowledge, the addition of the word *hijrīya* that follows the date is highly unusual, if not indeed entirely absent, in Mamluk dates.²⁵ Secondly, the almost perfect condition of the door speaks against its use in an entrance portal for more than 500 years, as wear and tear caused by the elements and its continuous use would have altered its appearance. Thirdly, the door’s size raises doubt as to its originality, as its height is 50 cm smaller than the entrance door (cat. no. 26/1) *in situ* in the *khānqāh* of Sultan Barqūq today.²⁶ It seems unlikely that the door under consideration would have been fixed in another location within the same building, for a clear hierarchy between the different types of metalwork doors is established in this *khānqāh*, a hierarchy that pushes the most lavishly decorated overall star pattern type to the entrance, as will be discussed in Section 4.1. And finally, the presence of silver-wire inlay, instead of the sheet inlay that was common in Mamluk times, also points to a later date. But this latter problem requires on-the-spot investigation before a satisfactory conclusion can be reached.

Loose stars, hexagons, and inscription bands, cast in all probability during the latter part of the 19th century, also give evidence of a renewed interest on the metalworker’s part in overall star pattern doors. Some of these might of course have been specifically ordered for the various restoration programs that were going on, something which has been recorded in the notes published by the Comité. At times these records not only yield insights into the costs of individual pieces but also record the names of the metalworkers who made them. Other pieces were perhaps manufactured to be made into revival Mamluk star pattern doors, of which at least two are recorded to have been made.²⁷ A third group might have been intended from the start to be sold as separate pieces on the market, either as authentic Mamluk pieces or as revival ones.²⁸

²¹ Gottheil (1909–10), 60; Rajab (1994), 152–54. The door is now in Kuwait, the Tareq Rajab Museum.

²² Gottheil (1909–10), 60.

²³ Rajab (1994), 152–54.

²⁴ In addition, the location of the entire inscription is curious, as the introductory phrase ‘glory to our lord’ and the titles of the patron start in the oblong band at the base of the right leaf, whereas its normal location would be that in an oblong band at the top of the right leaf. The date, which usually terminates the inscription in an oblong band at the base of the left leaf is now positioned in the oblong band at the top of the left leaf.

²⁵ These doubts with respect to the date were already put forward by Gottheil (1909–10), 60.

²⁶ The door’s dimensions as given in Rajab (1994), 153, are 380 x 230 cm whereas the door positioned in the entrance portal of the *khānqāh* today is 432 x 242 cm.

²⁷ RCEA (1991) 18, 87–88.

²⁸ A number of loose pieces, now in museum collections, closely imitate components of existing Mamluk doors. Among these are some plaques in the Victoria and Albert Museum in London that imitate those of the entrance door to the *madrasa* of Sultan Baybars (662/1262), but whose measurements differ: an embossed 12-pointed star with a lion on top, inv. no. 909part/49–1884; an embossed 9-pointed star, inv. no. 909part/25–1884; 20 openwork hexagons, inv. nos. 909part/27–1884 to 46–1884, all of which were acquired in 1884 from Comte de Saint Maurice. Others in the same museum resemble those of the entrance door of the mausoleum and *sabīl-kuttāb* (908–10/1503–4) and that of the *madrasa* (910/1504) of Sultan al-Ghūrī: a combination of 16 hexagons and kite-shaped figures, inv. nos. 489-1902 to 489L–1902.

3.1.2 Medallion doors

In contrast to the existence of metal forerunners of metal overall star pattern doors in Cairo, Damascus, and the Jazīra, there are no metal medallion doors extant preceding the Mamluk period. That is, if one does not include a single-leafed door from the 10th century, found in a Christian tomb in the Fayyūm, which has a central metal disk surrounded by four crosses set within a roundel.²⁹ The disk and the encircled crosses are distributed as to form the arms of a cross. A narrow band borders the wooden support on all four sides. This specific Christian layout and the small size of the central disk leave it unrelated to Mamluk medallion doors.

As evidence of metalwork forerunners is absent, Mamluk metalworkers should be credited with the application of this design on metalwork doors. In this they might have been inspired by two different traditions that made use of the medallion as the core ornament. Mamluk metalworkers satisfactorily applied it during the first half of the 14th century on other metalwork objects, in particular on metal lamps with a pyramidal shape.³⁰ And before that during the 13th century the design had already been used on Seljuq wooden doors. Their possible role of inspiration on the makers of metalwork doors will now be discussed.

Extant lamps of pyramidal shape show that the design was already well established from the third reign of Sultan al-Nāṣir Muḥammad (r. 709/1310 to 741/1341).³¹ These so-called pyramidal lamps are characterised by a 6-sided pyramidal base that tapers towards the top, and is surmounted by a dome-like shape. The six sides of the Mamluk specimens that are extant today all carry a pierced central field with medallions inclusive of trefoil finials, and have inscription bands above and below this. The correspondences between this type of lamp and medallion doors go beyond the adoption of an identical design. Both make use of decorative zones on a flat, rectangular elongated surface that is of openwork design. The latter is highly functional in the case of lamps as it allows the light to radiate, but its adoption on doors serves a decorative goal only. Moreover, the design on these two types of objects shows a strong centralised focus, established through juxtaposing contrasting patterns between the core of the medallion and the area that surrounds it. An overlap in the content of their inscriptions is also apparent, as these consist of the names and titles of the patrons. Furthermore, both evoke a monumental quality through their large size, which is not surprising given that they were manufactured to furnish monumental mosques whose large, often empty, space would easily dwarf objects of small size.³² These pyramidal lamps do differ, however, from the medallion doors in two respects: first, the lamps do not contain four corner-pieces that surround the central medallion, perhaps because of lack of space. Secondly, the space surrounding the medallion is filled entirely with pierced foliate motifs, in contrast to most medallion doors where this space is left void.³³

Given the many correspondences in design, decoration, size and context it is quite possible that such lamps and doors were executed by metalworkers who, if they did not share the same workplace, were at least in contact with one another and were well aware of each others' techniques and designs, something that has been argued also for overall star pattern doors, on the one hand, and vase-shaped lamps and *tanners*, on the

²⁹ Habīb (n.d.), pl. 4.

³⁰ For an analysis of the development of pyramidal lamps, see Behrens-Abouseif (1995), 67–73.

³¹ Three specimens are extant from this sultan's reign: one now in Copenhagen, the David Collection inv. no. 37/1982, published in Folsach (1990), 204, no. 339; one in Jerusalem, the Dome of the Rock, published in Van Berchem (1925), 307–8; and one in Cairo, The Museum of Islamic Art, inv. no. 638, published in Wiet (1932), 42–45, pl. VIII. For later Mamluk examples, see Behrens-Abouseif (1995), pls. 70–73, and Museum (2002), 186–87.

³² For example, the aforementioned lamp made during the reign of Sultan al-Nāṣir Muḥammad that is now in the Museum of Islamic Art in Cairo, inv. no. 638, measures up to 75 cm in height. Two later ones, made for Sultan Qāitbāy in the same museum, inv. nos. 383 and 384, reach up to 130 cm in height. For the latter, see Wiet (1932), 33–37, pls. XVI and XVII.

³³ One of the exceptions is the medallion door (cat. no. 28/1) in the *madrasa* and mausoleum of Amir Maḥmūd al-Ustādār (797/1394–95).

other hand. The closeness of the two fields is underwritten by the fact that the piercing technique, which was most commonly used for metal lamps, was also employed on the six identical doors (cat. nos. 26/3–26/8) in the *madrassa* and *khānqāh* of Sultan Barqūq with which the tradition of medallion doors in Cairo really set off.³⁴

The use of medallions as decorative designs on metalwork is, however, not unique to these doors and pyramidal lamps. They are also found on other Mamluk metal objects where they often serve to divide the inscription bands up into multiple parts. In this context, however, they function as subsidiary decorative elements, instead of being the focus of the design as was the case on both pyramidal lamps and medallion doors.³⁵ Within the reign of Sultan al-Nāṣir Muḥammad this changes, as metalworkers started to give the medallion a more central role in the design, as two *kursīs* show, one dated to 728/1328 and the other datable to the same period on the basis of its style and execution.³⁶ On the dated *kursī* the size of the medallions in connection to their immediate surrounding is still small, although they are singled out not only by their position (which is central in each panel) but also because they are highlighted with silver inlay. The opposite is true for the other, undated *kursī*, in which the medallions are the main design as they take up a central position on each of the six sides and on the top.

The latter description makes clear that during the reign of Sultan al-Nāṣir Muḥammad metalworkers responsible for different kinds of objects were experimenting with the medallion as the focal point of the design and showed a remarkable maturity in the application of the design on flat surfaces. It is quite possible that the designers of doors were inspired by this, seeing possibilities of transferring this monumental design to the flat surface of doors. Given the growing popularity of the medallion during this sultan's reign, it seems probable that metalworkers had already experimented with applying this design on doors in the same period. Unfortunately, there is no evidence to sustain such a claim as no medallion doors are extant from this period. However, given the fact that so few metalwork fittings from the reign of Sultan al-Nāṣir Muḥammad are extant today anyway, one must take into consideration that an important phase in the development of Mamluk fittings might be lost to us today.

The metalworker responsible for the entrance door (cat. no. 28/1: Plate 102 to the *madrassa* and mausoleum of Amir Maḥmūd al-Uṣṭādār (797/1394–95) also connected characteristics drawn from the craft of fittings with those of portable objects, seeking inspiration in both. For the design he chose a central medallion and four corner-pieces, but the space between these elements was not left void but instead filled with an openwork maze of foliate scrolls, a background reminiscent of the pyramidal lamps described above. This metalworker was also the first to fill the medallion with a geometric pattern based on stars instead of foliate scrolls, which suggests that he had been inspired by doors of the overall star pattern type. He deviated from the latter, however, in the way he created the pattern: not by using cast framing elements and openwork filler plaques but instead by using only cast framing plaques that were nailed onto a flat metal sheet onto which the filler plaques were engraved (Plate 103). Both the intricacy of this latter decoration and the choice for geometric Y-patterns filling the stars and hexagons are strongly reminiscent of the way decoration was

³⁴ In addition, two wooden shutters with a medallion carved in their centre were located just above two of these metalwork doors. For another specimen that was transferred to the Museum of Islamic Art in Cairo, inv. no. 1624, see David-Weil (1936), 63–64, pl. 10.

³⁵ For example: 1: A pen-box, datable to the early 14th century, in Cairo, Museum of Islamic Art, inv. no. 15132/1–2 and published in Baer (1983), 71, pl. 51; 2: A box, made for Sultan al-Nāṣir Muḥammad, in a private collection and published in Baer (1983), 77, pl. 57; 3: A plate in the Keir Collection, published in Atıl (1985), 169; 4: A pen-box, dated 704/1304–5, in Paris, Musée du Louvre, inv. no. 3621 and published in Atıl (1981), 82–83; 5: A basin made for Amir Qushtimur, circa 1340 AD, Cairo, the Museum of Islamic Art, inv. no. 15038, published in Atıl (1981), 92.

³⁶ They are housed in Cairo, the Museum of Islamic Art, inv. nos. 138 and 139. While the former one is neither dated nor published, the latter is dated 728/1328; see Wiet (1932), 14–28, pls. I and II.

used on portable Mamluk metalwork objects. From the early Mamluk period onwards, medallions filled with fretwork or Y-patterns were a common sight on portable metalwork objects, and their popularity even increased in the 15th century.³⁷

Moreover, fittings also owed much to a special script style already prevalent on portable objects. Knotted pseudo-kufic, encountered in Mamluk fittings at the end of the 14th century, had appeared earlier on portable objects in the early Bahrī period.³⁸ The same doors also share the introduction of whirling scrolls serving as a background to these pseudo-kufic letters. Although not widespread on portable objects, similar scrolls serving as the background to an inscription occur on a basin in the name of Amir Tankiz.³⁹ All in all, some makers of medallion doors were inspired by motives already well-established on Mamluk metalwork portable objects.

Besides the use of medallions on portable objects, this design was also prevalent on Seljuq doors or shutters of carved wood, all of which are datable to the 13th century.⁴⁰ All of them have a central medallion filled with a central star unit surrounded by half star units. The infill plaques are filled with foliate leaves. On some of these doors, lions and addorsed griffins against a background of foliate scrolls are positioned where on Mamluk metalwork doors corner-pieces would be located.⁴¹ Above their central fields is an oblong inscription band; below is a band with carved polygons. The doors are edged by a foliate border band that tapers above the inscription band into an arch-shape. When these Seljuq doors are compared to the Mamluk ones that are executed in metalwork, there is no apparent correspondence between their respective design and decoration, except of course for the shared preference for a medallion that would suggest a direct influence. Moreover, the time-lapse between the Seljuq cultural heydays, i.e. between 1200 and 1280 AD, and the period in which the tradition of medallion doors in Cairo really set off, i.e. from the late 14th century onwards, speaks against a role in terms of inspiration for Seljuq doors. A revival of Seljuq ornament, something argued by Rogers for decorative elements in the *madrasa* of Sultan al-Nāṣir Ḥasan in Cairo during the second part of the 14th century, seems farfetched given the fact that the power and prestige in this period was concentrated in Cairo.⁴² These doors should, therefore, be considered as having developed separately from one another, each in their own area and time.

³⁷ The following four early Mamluk objects give evidence of the use of Y-patterns and fretwork either in medallions or serving as the background. 1: A candlestick made in Egypt in 668/1269, housed in Cairo, the Museum of Islamic Art, inv. no. 1657, published by Wiet (1932), 47–49, pl. XXVII; 2: A candlestick, Nuhad es-Said collection, datable to circa 670/1270 and published by Allan (1982), 80–81; 3: The upper part of a candlestick made for Amir Katbughā, dated 694/1295, housed in Cairo, the Museum of Islamic Art, inv. no. 4463 and published by Wiet (1932), 125–26, pl. XXIV; 4: A pen-box, early 14th century, Cairo, Museum of Islamic Art, inv. no. 15132/1–2 and published in Baer (1983), 71, pl. 51. Earlier specimens are also known as illustrated by the Blacas ewer made in Mosul in 1232 AD and now housed in London, the British Museum inv. no. OA 1866.12–29.61 and published in Ward (1993), 81.

³⁸ Pseudo-kufic occurs on the six doors (cat. nos. 26/3 to 26/8: Plate 88) in the *sahn* of the *madrasa* and *khānqāh* of Sultan Barqūq (786–88/1384–86) and on the entrance door (28/1: Plate 105) of the *madrasa* and mausoleum of Amir Maḥmūd al-Ustādār (797/1394–95). On portable Mamluk metalwork objects it is found for example on: the lower part of an undated candlestick in the name of Sunqur al-Takrītī who died in 697/1298, which is housed in Cairo, the Museum of Islamic Art inv. no. 7949 and published by Wiet (1932), 135, pl. XXVIII. Examples from the 14th century are a pen-box in the name of Sultan Muḥammad, datable to 764/1363 and housed in Cairo, the Museum of Islamic Art, inv. no. 4461 and published by Wiet (1932), 123–25 and a jug datable to the late 14th century housed in London, the British Museum, inv. no. OA 1887.6–12.1 and published by Ward (1993), 114, no. 90. This list is far from complete.

³⁹ For the basin housed in Cairo, the Museum of Islamic Art inv. no. 7852 with the *terminus ante quem* of 740/1340, see Wiet (1932), 133–34, pl. LXV.

⁴⁰ Among these doors are: 1: A door, formerly installed in the ‘Alā’ al-Dīn mosque in Ankara, 1197–98 AD, and now housed in Istanbul, the Museum of Turkish and Islamic Art, inv. no. 2681, published in Kühnel (1938), 17–18, pl. 12; Öney (1992), 149, pl. 99; 2: A door from the soup-kitchen (*Imāret*) of Ibrāhīm Bey in Karaman, 12th to 13th century, now in Istanbul, Museum of Turkish and Islamic Art, inv. no. 248, published in Museum (2002), 92–93; Kühnel (1938), 17, pl. 11; 3: A door from Ankara, now in Istanbul, Museum of Turkish and Islamic Art, inv. no. 2682, published in Kühnel (1938), 18, pl. 12; 4: A door with unknown provenance, now in Berlin, Museum für Islamische Kunst, published in Ettinghausen (2001), 255, pl. 424.

⁴¹ For example doors 2 and 4 referred to in the previous note.

⁴² Rogers (1970–71), 67–68.

There is, however, a much earlier metalwork medallion door (cat. no. 7/1), namely the one formerly installed in a building ordered by the Mamluk Amir Sunqur al-Ṭawīl and made before 1300 AD, in which a link with the Seljuq heritage is made feasible. In this special case, the Seljuq connection is suggested by the manner in which animals are part of the design (Plate 21).⁴³ On the latter object, the central medallion and four corner-pieces are all filled with a network of small scrolls interspersed with leaves and animals such as panthers, geese, dogs, donkeys, parrots, and harpies. Metalworkers had of course experimented before with the use of similar scrollwork, especially on inlaid brasses of the 13th century.⁴⁴ There, however, the scrollwork often acts as an infill device for restricted areas or is located in spaces of secondary importance. This contrasts with its use on the surface of the aforementioned door, where it serves as the main decorative component, filling all composite parts of the central field. This specific use of scrollwork filling an entire surface was, however, not unique, which is attested by two objects clearly related to the religious domain. Animal scrollwork covering the entire field is present on the inner cover binding of a Qurʾān, originating from Anatolia or the Jazīra, and datable between 1250 and 1350 AD.⁴⁵ A second object in which animals figure is a *raḥla* dated 678/1279–80, made in Konya, whose inner two panels on which the Qurʾān would rest are painted in lacquer decorated with a double-headed eagle surrounded by 14 lions.⁴⁶

This indication that animal and figural imagery, tucked away on the inner sides of two religious artifacts, was permitted on other objects of religious function in the same area can be complemented by the dragon-head doorknockers (cat. no. VI/2: Plate 281) on the door of the mosque at Cizre (604–38/1208–41) and by the presence of lions and griffins on the wooden medallion doors in the Seljuq era mentioned above. The presence of animals embedded in floral scrolls on the door made for Amir Sunqur al-Ṭawīl suggests an eastern provenance or at least an eastern connection by way of an itinerant metalworker. It remained a unique specimen within the tradition of Mamluk medallion doors, as later generations of Mamluk craftsmen never resorted to this specific use of animal scrollwork. Moreover, it did take almost a century for the medallion design to become popular on Mamluk doors.

Summarizing, it may be stated that while the Mamluk metalworkers are to be credited with applying the medallion design on metalwork doors for the first time, Seljuq woodworkers had already preceded them by using this layout on wooden doors. Except for the above-mentioned door of Sunqur al-Ṭawīl, a direct Seljuq influence in stimulating Mamluk metalworkers to apply the medallion design on doors seems, however, absent. Mamluk metalworkers only started to use the medallion design on a grand scale when the medallion had become popular on Mamluk metalwork portable objects during the 14th century. Of these objects, it is the techniques and decorative motifs applied on pyramidal lamps that provide the closest connection to medallion doors.

The rise and popularity of metal medallion doors in the Burjī period was not continued during the first two centuries of Ottoman rule in Egypt and Syria. But during the 18th century three medallion doors are again found in Cairo, one at the entrance of the mosque of ʿUthmān Katkhudā (1147/1734), one at the *sabīl*-

⁴³ The dedicatory inscription on this door (cat. no. 7/1) states that the commissioned building was ordered by Sunqur al-Ṭawīl, an amir of Sultan al-Manṣūr Qalāʾūn. At some stage this building was destroyed, and its door was transferred to serve as the entrance door of the mosque of Sultan Barsbāy, built in 1436, at the village of al-Khānqāh. Today, the door is part of the collection of the Museum of Islamic Art in Cairo, inv. no. 2389.

⁴⁴ Similar scrollwork also decorated, for example, the cusped roundels on the so called DʿArenberg basin, a basin made in Damascus for Sultan Najm al-Dīn Ayyūb, and datable between 1247 and 1249 AD, now in the Freer Gallery of Art in Washington. For a depiction, see Ward (1993), 85, pl. 64. A more sophisticated use of this type of scrollwork is found on a pen-box made in West Iran in 680/1281, the sides of which are covered with animal scrollwork, as depicted in Ward (1993), 90, 91, pls. 69–71.

⁴⁵ The binding covers part 2 or 13 of a 30 volume Qurʾān, currently in the Khalili Collection, Qur433 and Qur132. It is published in James (1992), 196–97. The scrollwork was interspersed with two types of human heads, alternating with elephants, foxes, leopards, dragons, and griffins.

⁴⁶ Roxburgh (2005), 132–33, 400, no. 88. The *raḥla* is in Konya, Müze Müdürlüğü, inv. no. 332.

kuttāb of Amir ‘Abd al-Raḥmān Katkhudā (1157/1744), and the latest on the mausoleum of al-Zaynī, ordered by the above-mentioned amir in 1174/1760–61.⁴⁷ The latter door is remarkable for two reasons. First, it is the earliest extant medallion door in Cairo that is covered with silver facings worked in relief metal instead of the ordinary base metals used on this type of door.⁴⁸ Although unique in its regional context, the use of silver for door facings was much more common on doors in Safavid Iran.⁴⁹ Secondly, the door bolt contains the signature of the maker, Yahūdah Aṣlān, who simply signed his work with his name only, omitting customary introductory phrases such as ‘the work of’ (*‘amal*). It is remarkable that the only signature present on medallion doors in Cairo provides us with some insight into a society which allowed a Jewish metalworker to manufacture and, more importantly, openly sign a door for an Islamic religious building.

The emergence of a number of medallion doors at the end of the 19th century should be understood as being part of a greater scheme to revive Arabic architecture in general, with clear reference to Mamluk art.⁵⁰ For the architects of that time the medallion door in the mausoleum of Tawfiq (1894), father of the khedive ‘Abbās Ḥilmī, must have represented, among other elements, the Mamluk spirit. The French Embassy in Gīza also accommodates a door of this type in its interior. Medallion doors also reappear in a number of buildings in the 20th century, in which the architects seem to imply a visual link with the glorious past. The occurrence of a medallion door in the Dār al-Ḥikma, built in 1941 in Cairo, should be understood as such. In addition, a number of Mamluk edifices restored during the 20th century carry totally new medallion doors, strongly reminiscent of a past era such as that evoked in the mosque of Qānibay al-Muḥammadī (816/1413) in Cairo. The medallion door at the entrance of the newly erected mosque of the former prime minister Rafiq al-Ḥarīrī in Sidon, shows the continuing strength of its design in the Muslim world.

3.1.3 *Panelled doors*

Now that models for the medallion door have been suggested, possible forerunners of the third type of Mamluk doors, the so-called panelled door, will be discussed. This type of door, though extant in the Mamluk period in the Umayyad mosque in Damascus only, had for centuries been a well-known phenomenon in Egypt and Syria where they were executed in wood only. In Byzantine churches and monasteries, panelled doors made of metalwork abound.

The only pre-Mamluk panelled doors executed in metalwork that have been found so far in Egypt and Syria are three monumental doors in the citadel of Aleppo: one positioned in the entrance gate (cat. no. IV/1: Plate 275), one giving entrance to the citadel proper (cat. no. IV/2: Plate 277), and the third functioning as an internal door (cat. no. IV/3: Plate 278). Their thick iron leaves are divided up into 65 or 70 rectangular even-sized panels of small size, which are decorated internally with a horse-shoe design in which a pointed lance-form is placed. One horizontal row of panels houses a foundation inscription with the name of the patron and the date in thick cast letters. Their material and make, the fact that they were intended for

⁴⁷ The door made for the *sabīl-kuttāb* of Amir ‘Abd al-Raḥmān Katkhudā (1157/1744) is only known from drawings made by Prisse d’Avennes (1877) II, pl. 105 and Bourgoin (1873), pl. 75.

⁴⁸ The door is now in Cairo, Museum of Islamic Art, inv. no. 3737. See ‘Abd al-Wahhāb (1953–54), 558, pl. 19.

⁴⁹ Allan (1995).

⁵⁰ Raymond (2001), 400–1.

defensive purposes, and the rhythmic repetition of numerous small panels filled with a single and identical decorative motif all mean that they have little in common with the thin metal plaques and the varied decorative motifs found in the few panels of the 15th-century doors in the Umayyad mosque in Damascus. It therefore seems unlikely that they would have served as a model for the Mamluk doors in the Syrian capital.

Did the pre-Mamluk craft of woodworking influence the introduction of metalwork panelled doors in Damascus? Among woodworkers in Egypt and Syria, the idea of subdividing the surface of a door into decorated panels was already a well-established tradition. The designers of these doors either distributed even-sized panels regularly over the wooden support or realized a more playful design by accommodating panels of different shapes and size. The interior of the panels was then carved with designs consisting either of foliate or geometric motifs, of crosses, or figural designs, such as saints. The earliest extant wood-carved door with even-sized rectangular panels is a door from a synagogue in Fustāṭ, attributed to the second century.⁵¹ Each panel is carved with a pair of birds enclosed in a lobed roundel and surrounded by foliate motifs. Other doors with a comparable distribution are to be found in Coptic churches, such as the ones installed at the choir and at the *haykal* of the Church of the Holy Virgin in Dayr al-Suryān in the Wādī al-Naṭrūn, dated 913–14 AD and 926–27 AD, respectively.⁵² Here, a more varied set of decorative motifs are found; each horizontal row of panels holds a different motif, ranging from saints and crosses in various forms to geometric patterns of different make. Doors carrying sets of differently sized panels are also already known from the Coptic period, as shown by a wooden specimen that originally belonged to the Church of St. Barbara, datable to the 4th or 5th century.⁵³ There, a row of three vertically placed panels alternate with an oblong panel in the upper part; below, the vertically placed upper and lower arms of a cross are flanked by vertically placed panels. Here, depictions of Christ, the Holy Virgin and the 12 apostles fill the panels at the front, while those at the back are carved with foliate motifs. A less varied subdivision is found on the doors in Dayr Mār Elyān near the village of Qaryatayn in Syria, datable to the Umayyad period.⁵⁴ There, three sets of square panels alternate with two sets of rectangular ones, a distribution also found on some of the Mamluk metal doors (cat. no. 31/1: Plate 121 and cat. no. 31/3: Plate 127) in the Umayyad mosque in Damascus. Here, the panels as well as the woodwork surround are filled with vine scrolls and palmettes.

Woodwork doors made for Islamic buildings from the Fatimid period onwards show that the designers used both types of subdivision. An early example of a door with panels of different shapes and size is the door ordered by the caliph al-Ḥākim for the mosque of al-Azhar in 400/1010.⁵⁵ The two upper panels in this door carry an inscription, so far the earliest example extant of epigraphy positioned within a panel on this type of door. Other specimens are the entrance door installed at the al-Fakahānī mosque (543/1148) in Cairo,⁵⁶ the reverse of the metalwork entrance door (cat. no.II/1) of the mosque of al-Ṣāliḥ Ṭalāʿī (555/1160),⁵⁷ the reverse of the metalwork door (cat. no.V/1) of the mausoleum of al-Imam al-Shāfiʿī (608/1211), and the door of the mausoleum in the *madrasa* and mausoleum of Sultan Najm al-Dīn Ayyūb

⁵¹ This synagogue door, published in Raymond (2000), 131, pl. 136 and housed in Jerusalem, Israel Museum, inv. no. unknown, has two leaves, each of which carries two vertical rows of four panels each.

⁵² For an illustration of the door of the choir, see English Frazer (1973), pl. 9. In general, this type of distribution on wooden doors was favoured in the context of Coptic churches in the Fatimid and Ayyubid period in the Wādī al-Naṭrūn, as shown by doors in Dayr Anbā Bīshoy, by a door in the Church of the Holy Virgin at Dayr al-Bārāmūs, and by a door in the chapel of the Holy Virgin at Dayr Abū Maqār, described and reproduced in Evelyn White (1926–33) III, 153–54, pl. 47; 239, pl. 86; 92, pl. 21, respectively.

⁵³ Gabra (1993), 102–3; Russell (1962), pls. 5, 6. The door is now in Cairo, the Coptic Museum, inv. no. 738.

⁵⁴ Stern (1954), pl.1, fig. 2.

⁵⁵ For this door that is now housed in Cairo, the Museum of Islamic Art, inv. no. 551, see Pauty (1931), 30, pl. 23.

⁵⁶ Comité (1922) XXXII 1915–19, pl. 18.

⁵⁷ Creswell (1952–59) I, pl. 102.

(639–48/1241–50).⁵⁸ This type was also used in Syria, as exemplified by the reverse of the metalwork entrance door (cat. no. I/1) in the *bīmāristān* of Nūr al-Dīn b. Zengī (549/1154) in Damascus. Examples of doors with sets of identical rectangular panels, set in vertical mode, are two specimens made for the western Fatimid palace, later reused within the complex of Sultan al-Manṣūr Qalā'ūn, those in the mosque of al-Aqmar (519/1125), and the door in the mausoleum of Sayyida Nafīsa (502/1138).⁵⁹

It is remarkable that the popularity of these wooden panelled doors did not encourage metalworkers in Cairo to copy this type into metal, regardless of the numerous specimens readily available, especially in the capital city. This type of door continued to be executed in wood, however, for the reverse of Mamluk metalwork doors in Cairo, on the one hand, and as wooden fittings in the interior of Mamluk architecture, on the other hand: on these doors, oblong inscription bands often alternate with rectangular or square panels filled with geometric star patterns. An explanation for the absence of paneling on metalwork doors in Cairo might lie in the fact that the introduction of a new type of metalwork door, i.e. the overall star pattern type, in the late Fatimid period was eventually so successful that the panelled design was not considered a good alternative.⁶⁰

Although the metalworkers responsible for the panelled doors in the Umayyad mosque in Damascus could have been inspired by the panels that adorn the wooden reverse of the metalwork door in the *bīmāristān* of Nūr al-Dīn b. Zengī (549/1154) in Damascus, it is unlikely that it served as a direct source of inspiration. Neither the subdivision of the fields nor the decorative motifs present – geometric star patterns filling the entire surface of the panels in the *bīmāristān* as opposed to epigraphic and foliate motifs surrounded by open space on the panels in the Umayyad mosque – suggest a connection of any sort.

As a relationship between the existing woodwork tradition of panelled doors and the Mamluk metalwork specimens is absent, is there perhaps a link between the Byzantine tradition of metalwork church doors subdivided in panels and Mamluk metalwork panelled doors? Byzantine church doors were either cast in massive bronze or they had a wooden support with sunken panels onto which bronze or brass sheets were nailed. The earliest specimens extant are three doors still *in situ* in the Hagia Sophia in Istanbul.⁶¹ The style seems to have matured in Constantinople after which it spread to the West: Italian craftsmen started to imitate closely the Byzantine examples that were specifically ordered and manufactured in Constantinople so as to be installed in Italian churches.⁶² The layout of these doors in Istanbul and in the West is usually characterized by multiple rows of small panels of identical shape and size, all of them featuring a single

⁵⁸ Comité (1922) XXXII 1915–19, pls. 31, 32.

⁵⁹ Creswell (1952–59) I, pls. 39a–f; pls. 84e–h; pls. 92a–c, respectively. It is striking that towards the end of the Fatimid period in Cairo a marked change in the decorative focus within the panels can be observed: from predominantly foliate patterns usually growing from a central bud or palmette towards panels filled with a geometric subdivision. These latter are based mostly on star units or hexagons, in which foliate motifs serve as fillers of these geometric forms only. A similar geometric approach is also visible on the reverse of the door in the *bīmāristān* of Nūr al-Dīn b. Zengī (549/1154) in Damascus.

⁶⁰ This introduction coincided with the new approach in late Fatimid woodwork of covering entire surfaces with continuous geometric motifs, instead of confining these patterns to the traditionally restricted space of panels, as will be discussed in more detail in Section 3.5.

⁶¹ Two of these, datable to the sixth century, still adorn the Exonarthex and were formerly decorated with the cross in different stylizations. The latter were stripped of their explicit Christian connotations after 1453, but the outlines and imprints of the crosses are still visible. See English Frazer (1973), pls. 15–16. Much more elaborately decorated were the bronze doors of the Gate of the Horologium of the same complex, their plain recessed panels being decorated with monograms of the patrons surrounded by multiple borders of leafed scrolls and protruding bosses in a geometric setting.

⁶² For examples within an early Christian context in Italy, see Mende & Hirmer (1983), 18, 21. One such panelled door, installed in the mausoleum of the crusader Bohemund I in Canosa, which dates to between 1111 and 1118AD, is decorated with an amalgam of historical persons with Muslim elements, namely a roundel with floriated kufic surrounding this image. Identical circular inscriptions surround a protruding lion's head and a leaf, respectively. Other patterns clearly inspired by the Islamic repertoire are two medallions with geometric star patterns interspersed with affronted horses and birds, and flowers. The Islamic influence on the door's decorative repertoire can be understood in the light of the patron's links with the East, but it should also be remembered that the use of pseudo-kufic was not uncommon in South Italy during this time, as discussed by Meyer and Northover (2003), 60. For a description of this door, see Götz (1971), 348–55; Mende & Hirmer (1983), 139–41, pls. 40–43. For an overview and details of the door, see Matthiae (1971), pls. 136–39.

decorative theme such as the cross, or single depictions of the Virgin, an archangel, a saint, or an apostle standing out in high relief. Through these emblems the symbolic meaning of these doors as means of entering paradise was immediately evoked.⁶³

Before a comparison is made between the Byzantine doors and those in the Umayyad mosque in Damascus, it is important to note the absence of extant pre-Mamluk metalwork church doors modeled upon this Byzantine type in churches in Syria.⁶⁴ If this indeed presents the situation as it was, it will be difficult to argue for an easy exchange of ideas, given the wide geographical gap between Damascus and Istanbul. A scenario in which this type of door had also spread southwards from Istanbul should not be discarded, even if evidence of such an exchange is absent. Be that as it may, when these Byzantine doors are compared to those in the Umayyad mosque, overlaps in technique and meaning can be detected. So far as the technique is concerned, both traditions share the manufacturing mode of nailing cast bronze plaques onto a wooden support. Moreover, the widespread use of protruding bosses along the sides of the panels and ornamental rosettes within those panels is to be found on both.⁶⁵ In addition, a number of doors belonging to both traditions convey the symbolic message of Paradise gates, in the Byzantine context through the depiction of saints, archangels and crosses, and in the case of the mosque doors (cat. nos. 29/2 and 31/3) by the presence of Qurʾān 15:46, which refers to the repose of believers in Paradise. There did not exist a widespread tradition of adding verses referring to paradise to Mamluk metal doors in general as they are found only on a limited number of extant specimens.⁶⁶ It is quite possible that the craftsmen were not only acquainted with the formal and technical aspects of Byzantine church doors with paradisaal themes but were also inspired by the meaning which they conveyed to the public. At the same time it should also be remembered that, according to some scholars, the theme of paradise was already well developed within the Umayyad mosque proper in the form of the vegetal and architectural themes that were executed in mosaic on the porticoes, the court façade and the sanctuary of the mosque.⁶⁷ The latter, then, might also have inspired the designers of the doors to choose a verse relating to paradise. A Christian connection is also suggested by the cruciform design which dominates the interior layout of the rectangular panels on a number of the doors in the Umayyad mosque, in particular on doors (cat. nos. 29/2, 29/2; and, to a lesser extent, cat. nos. 31/3 and 31/4).

Of the three possible sources of inspiration that were discussed above, i.e. pre-Mamluk panelled doors found in Egypt and Syria executed either in metal or wood, and the Byzantine tradition found outside this geographical area, it is the tradition of Byzantine doors that seems most closely related to the doors in the Umayyad mosque. But even while overlaps exist between the Mamluk and Byzantine traditions, the aesthetic is different. Unlike Byzantine doors, Mamluk ones subdivide the panels into smaller decorative units alternating with flat undecorated plaques, instead of the single images that adorn the panels of

⁶³ For a comprehensive treatment of the symbolism of Byzantine church doors, see English Frazer (1973); Götz (1971), 9–30.

⁶⁴ According to Butler (1929), 211, only few remains of fixtures or church furniture were discovered in Syrian churches built between the 4th to the 7th centuries. He (idem, p. 218) only occasionally refers to a remaining wooden door used for cupboards in their interior, but remains silent on their design. Also Strube (1993) does not refer to the presence of metalwork or wooden doors at the exterior, so that a possible link between Mamluk metalwork panelled doors and doors in early churches cannot as yet be established.

⁶⁵ For protruding bosses on the Islamic doors, see all three doors (cat. nos. 31/1, 31/2, and 57/1) in the west wall of the Umayyad mosque and the two side doors in the east wall (cat. nos. 31/3 and 31/4). For those on the bronze doors installed at the Gate of the Horologium at Hagia Sophia, see Swift (1940), 248, and for the 11th-century door of the monastery of the Grand Lavra at Mount Athos, see English Frazer (1973), pl. 14. On the latter rosettes are present, comparable to those on all the metal doors of the Umayyad mosque.

⁶⁶ In Cairo, Qurʾānic inscriptions referring to paradise are found only on two Mamluk doors: Qurʾān 39:73 on the entrance door to the mosque of Amir Aṣlam al-Silāḥdār (745–46/1344–45) and Qurʾān 15:45–47 on the entrance door to the *madrasa* and mausoleum of Amir Maḥmūd al-Ustādār (797/1394–95).

⁶⁷ For an elaborate discussion of this topic, see the article by Finster (1970).

Byzantine doors. This combination of differently sized plaques with various patterns resulted in highly ornamental and playful panels. The use of a roundel at the centre of most panels offers a strong centralized focus. Moreover, they keep to the Islamic decorative repertoire by favouring geometric and epigraphic designs, instead of the figural images found on Byzantine doors. In addition, the Mamluk designers emphasized the monumentality of their metal doors by distributing the panels in two vertical rows only, while at the same time increasing their size. This greatly emphasized the robustness of the door. It is in these three characteristics that the unique character of Mamluk panelled metal doors lies.

How can one explain the rise of this third type of Mamluk metal door in the 15th century only, taking into consideration that two earlier types – the overall star pattern type and the medallion type – of Mamluk metal doors had already been developed successfully and that the Byzantine tradition had already been flourishing for centuries? It is possible that the designers of doors searched for an aesthetic different from the ones already available within the Islamic context, so as to underline the uniqueness of the Umayyad mosque. This then could perhaps also explain why this type of door remained exclusive to this particular building. It is also not inconceivable that the newly installed doors in the Umayyad mosque were modelled directly upon older specimens, manufactured for the mosque at an earlier time, but which needed replacement in the 15th century owing to their loss in fires and through decay. Unfortunately we have no means of proving this, as the Mamluk literary source that specifically refers to these doors remains silent on this subject.⁶⁸ The description of the geographer al-Muqaddasī in the late 10th century is also not detailed enough to form a comprehensive picture of the doors; he described the large central door and the two smaller doors in the west wall as having “double doors with plates of gilded brass”.⁶⁹

There is only one specimen extant that exemplifies the continuation of this type of metal door in an Islamic context into Ottoman times, which is the door (cat. no. 57/1: Plates 245 to 248) installed in 933/1527 in the centre of the west wall of the Umayyad mosque. The metalworker responsible for this door a century after the last panelled door for this mosque had been manufactured obviously wanted the door to blend in. He tried to ensure that it followed the models in its immediate context while at the same time creating a different aesthetic through the addition of multitudes of rosettes in high relief. There are no later specimens of this type extant in Ottoman religious buildings, which emphasizes once more the close connection of this type to the Umayyad mosque in Damascus. Panelled doors executed both in wood and metal, however, continue to be made up to the present time to be installed in churches, especially in Syria, as exemplified by the recently installed church doors in the Monastery of Saydnāyā in Saydnāyā. Moreover, in areas like Bāb Tūma and Bāb Sharqī in Damascus many entrances to the courtyard houses are adorned with this type of door. This prolongation of the type in a Christian context should be understood as a continuation of the long-standing Byzantine tradition.

3.1.4 *Doors with metal bands*

Metal bands attached to wooden supports were already part of the tradition of door-making before Mamluk times. Doors the support of which was entirely covered with oblong metal bands were especially appropriate

⁶⁸ Nu‘aymī (1951) II, 403–4; Sauvaire (1896), 219–20. Al-Nu‘aymī mentions the installation of the two side doors in the east and west wall in the years 820/417 and 819/1416, respectively, but refrains from giving any details as to the doors’ former formal appearance.

⁶⁹ Muqaddasī (1963), 173.

for city gates, castles, and *khāns*, simply because of the image of strength that they projected and their defensive qualities. Wear and tear would surely have demanded replacement of some of the iron mountings over time, but basically the arrangement does not seem to have been altered. City gates constructed in Fatimid times, such as Bāb al-Naṣr, Bāb al-Futūḥ, and Bāb Zuwayla in Cairo retain their iron-faced doors to this day.⁷⁰ In Aleppo the Bāb al-Qinnisrīn, constructed in the 10th century, shows an identical design; as it was reconstructed twice during the Mamluk period, the last construction ordered by Sultan al-Ghūrī, its metal-faced doors might also stem from Mamluk times.⁷¹ The traveller Ibn Jubayr observed the similarity between the gates of citadels and *khāns* when he mentioned that the *khāns* in Damascus are “as tall as caravanserais and furnished with iron gates like those of a castle”.⁷²

Although the Mamluks clearly continued an already well-established tradition, it is only in the Mamluk period that this type of door is sometimes enlivened with a limited number of epigraphic plaques. This fits well into the Mamluk practice of adding marks of ownership to metalwork objects.

The arrangement of doors entirely mounted with oblong iron bands continued to be popular well into Ottoman times, especially in structures of a defensive and commercial nature. This is apparent in the citadel of Cairo where such doors as the Bāb al-‘Azab, rebuilt by Riḍwān Katkhudā (who died in 1168/1754–55), and the Middle Gate ordered by Muḥammad ‘Alī were added in the 18th and 19th centuries, respectively.⁷³ The same type is used for the doors of Ottoman houses, like that of Jamāl al-Dīn al-Dhahabī (1637 AD), whose main entrance shows metal bands with exceptionally large round-headed nails.⁷⁴ The type also reappears in the 19th-century castle of Bayt al-Dīn in the al-Shūf Mountains in Lebanon. Similar doors are found in Ottoman *khāns* like the Khān al-Wazīr in Aleppo and the Khān al-Jumruk in Damascus. There, a small wicket door with identical mountings set within one of the door leaves provides an entrance when the main leaves are closed. Remarkably, all these Ottoman doors are devoid of inscription plaques.

Wooden supports with a restricted number of metal bands were also already used in pre-Mamluk times. Six plain oblong bands enlivened with nails with rosette-shaped heads are nailed on the door (cat. no. I/3) leading to the courtyard of the *bīmāristān* of Nūr al-Dīn b. Zengī (549/1154). A description by Ibn Jubayr of the Ka‘ba door shows a totally different distribution of bands over the support: “These two noble doorleaves are enclosed by a thick band of silver gilt, excellently carved, which rises to the blessed lintel, passes over it and then goes round the sides of the two doorleaves. Between them, when they are closed together, is a broad strip of silver gilt which runs the entire length of the doors and is attached to the doorleaf which is to the left of him who enters the House.”⁷⁵ The same author tells of a different use of metal bands in the Ka‘ba when describing four large silver plaques nailed to the wall with silver nails. Each of them carried the name of the caliph of Egypt who sent it.⁷⁶

In Mamluk times, not only did the number and the location of the bands become somewhat standardized, as one was attached near the top and the second near the base of the door, but also decoration in the form of inscriptions referring to patronage became the norm. This standardization seems to be linked closely to the number, location, and use of oblong bands on overall star pattern doors and medallion doors.

⁷⁰ Creswell (1952–59) I, 171, pls. 53b–c, 66c, 75.

⁷¹ For a history of the door and the portal, see Herzfeld (1954–56) I/1, 60–65.

⁷² Ibn Jubayr (1852), 291.

⁷³ Creswell (1952–59) I, 171.

⁷⁴ Raymond (2002), 308.

⁷⁵ Ibn Jubayr (1852), 90.

⁷⁶ Nāṣer-e Khosraw (1986), 77.

The metal bands type might well have developed as an economically sound alternative to the two other, much more laborious, doors.

This type with the two oblong bands continued to be used in Ottoman times and beyond, predominantly because of its practicality rather than for aesthetic reasons: the costs of the metal were minimal, as only little was needed and its execution was simple. Mostly, the surface of the majority of these bands was left undecorated, although there are a few exceptions, such as the bands adorning the doors in the mosque al-ʿĀdiliya (964/1555) in Aleppo where a text is engraved in masterly fashion along the band. The content of the latter is unique to this type of door, as it is dominated by the signatures of two metalworkers, who specify their origins in Damascus and Aleppo, respectively, while one even adds his association to the craft of inlay-work (*taṭʿīm*).⁷⁷

3.2 WINDOW SHUTTERS

As has been discussed in Section 2.2, window shutters of the Mamluk period have a design identical to that of doors with metal bands discussed above. A discussion of possible forerunners and of their aftermath is hampered by the total dearth of shutters with embellished metalwork bands in pre-Mamluk and post-Mamluk buildings in Cairo and Damascus. It is quite possible that their popularity was specifically connected to the Mamluk period, with patrons wanting to show off their epithets as often as possible in an endowed building.

3.3 DOORKNOCKERS

The two main types of Mamluk doorknockers that were distinguished in Section 2.3, namely the holes-and-bosses type and the interlace type, were not newly developed during the Mamluk period. As will be discussed below, both of them have forerunners in Syria, the Jazīra, and Iraq. Moreover, also some specific decorative elements, such as the use of epigraphy or the presence of dragons and feline heads, was already a well-established practice in pre-Mamluk times. There is, however, one type of doorknocker that can be considered a Mamluk invention, namely the hanger in the shape of an embossed disk as described in Section 2.3.3.

3.3.1 *The holes-and-bosses type*

All Mamluk specimens belonging to the holes-and-bosses type that are still suspended in their original location are found in religious buildings in Cairo. This contrasts with the pre-Mamluk extant ones *in situ*, all of which are attached to the entrance doors of religious buildings in Damascus, Aleppo and Mosul, while

⁷⁷ The metalworkers are Muḥammad b. Muḥammad al-shahīd bi'l-shāmī and al-ḥājj Khalīl b. al-ḥājj Yūsuf al-Ḥalabī, the former associating himself with the technique of inlaying.

none are found suspended in Cairo.⁷⁸ It is of course plausible that this type of fitting was invented and made in Syria and the Jazīra and eventually transported from these regions to Cairo or that metalworkers seeking new patronage and means of livelihood moved westwards towards Cairo, introducing this type there. Epigraphic evidence sustains this hypothesis, as some metalworkers using the *nisba* al-Mawṣilī state that they manufactured their objects in Cairo or Damascus.⁷⁹ Moreover, an exchange of objects or ideas between the Jazīra and Cairo is actually established by the medallion door (cat. no. 7/1) of Sunqur al-Ṭawīl.⁸⁰ It is on the latter door that a pair of doorknockers of the holes-and-bosses type appears for the first time in Cairo. However, it could be that this type was already known and used in Ayyubid Cairo, although evidence to support this is missing owing to the absence of pre-Mamluk doorknockers on constructions in Cairo in general.

There is a close relation between this holes-and-bosses type and a round doorknocker (cat. no. 4/2: Plates 12, 13) made in early Mamluk times that consists of six paired dragon heads whose beaks, ears and necks are linked, forming openings and triangular protrusions.⁸¹ These latter characteristics also occur in the holes-and-bosses type, which appears to be a stylized version of this dragon-handle. Neither the ‘naturalistic’ dragon-handle nor the stylized version – the holes-and-bosses type – are Mamluk inventions. Stylized versions of the dragon-handle were, as stated above, already available in pre-Mamluk Damascus, Aleppo and Mosul. And a similar, but earlier, ‘naturalistic’ dragon-handle datable to the end of the 12th or the beginning of the 13th century has been found that is attributed to the Jazīra.⁸² The formal analogy between the two dragon-handles strongly suggests that they are related, but it is ill-advised to claim a direct link between these two objects given the time lapse of almost one century between the two occurrences.

The presence in the Jazīra of a handle composed of dragons is not at all surprising, given the fact that there was a different type of dragon door-handle popular in this area in the late 12th and the early 13th century. This consists of a pair of full-bodied dragons, either with facing or averted heads, whose bodies touch at the lower level where their tails intertwine.⁸³ Often the head of a lion or feline, crowning the suspension pin, is set between the dragon heads, as if, according to the description by the chronicler and metalworker al-Jazarī, they are devouring the lion’s head.⁸⁴ The tradition of easily recognizable dragon-handles was discontinued in the Mamluk period, but not totally lost, as two extant Mamluk specimens show.⁸⁵ The Mamluks clearly favoured the stylized version, although it is impossible to ascertain whether they were aware of its origin and its apotropaic connotation.

⁷⁸ Examples of these are the doorknockers (cat. nos. I/2: Plate 269 and I/4: Plate 270) on the entrance door and the interior door of the *bīmāristān* of Nūr al-Dīn b. Zengī and those on his mausoleum and *madrasa* in Damascus, the doorknockers on the entrance door of the *bīmāristān* of the same ruler in Aleppo, and those (cat. no. VII/2: Plate 284) on the entrance door of the mausoleum of al-Imam ‘Awn al-Dīn in Mosul.

⁷⁹ For an enumeration of objects with the *nisba* al-Mawṣilī and a reference to Cairo or Damascus, see Section 3.1.1, note 5.

⁸⁰ This was discussed in Section 3.1.2.

⁸¹ This was already referred to in Section 2.3.1.

⁸² This bronze doorknocker is housed in Paris, the Louvre, inv. no. MAO 97. It is published in Bernus-Taylor (2001), 232, no. 160. For a drawing of the hanger, see Fig. 10, Section 2.3.1.

⁸³ This type has already been discussed in Section 1.3. Examples of this type are a pair (cat. no. VI/2), formerly attached to the Ulu mosque at Cizre (the former Jazīrat b. ‘Umar), one of them now housed in Istanbul, the Museum of Turkish and Islamic Art, inv. no. 3749 and one in Copenhagen, The David Collection, inv. no. 38/1973; a single knocker, provenance unknown, now in Berlin, Museum für Islamische Kunst, inv. no. I.2242; a knocker (cat. no. III/2) on the door of the palace at Āmid and described and drawn by its maker al-Jazarī, see Jazarī (1990), 334–35; a pair in London, the Khalili Collection, inv. nos. MTW1407 and MTW1408, and published in Piotrovski & Vrieze (1999), 68–69.

⁸⁴ Jazarī (1990), 334.

⁸⁵ Besides the doorknocker (cat. no. 4/2: Plates 12, 13) made for the mausoleum of Ibrāhīm at Hebron, ordered by Sultan al-Manṣūr Qalā’ūn in the late 13th century, there is the late 15th century pair (cat. no. 47/2: Plates 199, 200) attached to the mosque of Amir Qajmās al-Ishāqī (884–86/1479–81). The combination of both dragons and lions is also found on portable Mamluk objects, exemplified by a brazier, made for the Rasulid Sultan of Yemen, al-Malik al-Muzaffar Shams al-Dīn Yūsuf on which four facing dragons heads with intertwined necks are topping the brazier’s upper edge while two pairs of lions heads are set on the object’s two longitudinal sides. This brazier, New York, Metropolitan Museum of Art, inv. no. 91.1540, was made during the sultan’s reign in between 1250 and 1295 and is published in Piotrovski & Vrieze (1999), 166–67, no. 121.

In the Jazīra the practice of crowning the suspension pins of doorknockers with lion or feline heads had also already been established by the late 12th century. There, they are not only often part of the dragon-handles described above but are also found in combination with the stylized holes-and-bosses type, as the pair of doorknockers (cat. no. VII/2: Plate 284) attached to the entrance door of the mausoleum of ‘Awn al-Dīn in Mosul shows. That the tradition of lion-headed doorknockers was far more widespread is shown by doorknockers from Antique and Byzantine times.⁸⁶ On the whole the latter consisted of cast lion heads in high relief acting as the suspension plaque, while a simple ring through their mouths was intended for knocking or pulling the door. Their function was apotropaic, guarding the door against strangers, their strength and power being symbolic for the impenetrability of the door. One such doorknocker – a magnificent lion-head suspension disk surrounded by a kufic inscription datable to the latter part of the 11th century and attributed to Sicily – combines stylistic features of Romanesque works in Apulia with Arabic epigraphy.⁸⁷ This Mediterranean tradition of suspension disks in the shape of a lion’s head did not exert an influence on the Mamluk doorknockers that are still extant, but it does give evidence of the widespread practice of combining lions with doorknockers.

All in all, the extant evidence in the Jazīra shows that the usage of dragons and lions for doorknockers had already been established before Mamluk times. Mamluk metalworkers were, in all probability, inspired by this Jazīran tradition, but evidence that bridges the gap between these two traditions in the form of dated objects is unfortunately missing. Besides this, the stylized version of the holes-and-bosses type was, too, already known in Syria and Mosul in the pre-Mamluk period. Mamluk metalworkers continued the tradition, but added new features that were embedded within the Mamluk decorative repertoire, such as the application of foliate motives on the surface of hangers and the use of radiating inscriptions on the suspension disks of doorknockers.

The holes-and-bosses type remained popular in the Ottoman period, in particular the sub-type that is characterized by a round shape perforated with holes. As was the case in Mamluk times, the specimens still *in situ* on Ottoman doors in both religious and profane buildings, especially Ottoman *khāns*, have no surface decoration.⁸⁸ This feature, in combination with the casting technique, greatly facilitated their production and could well explain their continuous popularity throughout the centuries. Specimens of this type are now and then also found on recently restored buildings, as on the entrance door of the mosque of Qānibāy al-Muḥammad (816/1413) in Cairo. Their unchanged appearance and technique, however, hamper the dating of specimens that have been taken from their original surroundings.

From the end of the 19th century the second sub-group of the holes-and-bosses type, which features holes that open up to the exterior and often carry surface decoration, became popular again, as part of the larger movement of the revival of Mamluk artifacts in general and metalwork in particular. As they are not found within the intervening period, their revival should be understood as being inspired by conscious admiration for the Mamluk period and its crafts. This revival was facilitated by the presence of Mamluk examples and the drawings of such artists as Prisse d’Avennes.⁸⁹ While a number of these doorknockers were made to be sold on the open market, some of them were custom-made, such as the ones adorning the interior doors of the French Embassy in Gīza, where they were part of a much larger concept to revive the

⁸⁶ Mende (1981), 32–40, 128–36; Mende & Hirmer (1983), 17.

⁸⁷ The doorknocker is in Copenhagen, the David Collection, inv. no. 50/2000, and is thoroughly analysed by Meyer and Northover (2003).

⁸⁸ For an overview of late Ottoman doorknockers in Syria, see Heidemann (2006).

⁸⁹ For a selection of doorknockers, see Prisse d’Avennes (1877) II, 107.

Mamluk style by combining Mamluk spolia with designs and objects that strongly adhered to the Mamluk style.

These revival Mamluk doorknockers are, as already mentioned, closely based on the Mamluk subgroup that is characterized by round or elongated hangers ending in trefoil finials with large holes that open up to the sides. The Mamluk revival doorknockers differ, however, in a number of ways from their Mamluk forerunners. To facilitate distinguishing Mamluk from revival Mamluk doorknockers in the future, a number of characteristics shared by Mamluk revival doorknockers will be presented.⁹⁰ Attention will be focused first upon the technique and then upon the decoration, specifically on the subdivision of the surface and its added ornament.

As was the case in the medieval period, the makers of revival doorknockers preferred the casting technique to produce the basic components. Also in congruence with their forerunners, they decorated the surface of both hangers and suspension disks, most commonly by using the engraving technique. This method was used not only to decorate the surface but also to outline specific areas when the inlaying technique was used. The metalworkers responsible for the revival doorknockers preferred to use silver wires instead of sheets.⁹¹ This particular application of inlay is not restricted to door hangers made in this period, as is testified by a description of the technique of metal inlaying in Cairo in 1906.⁹² According to the latter, the metalworkers wanting to achieve broad inlaid surfaces positioned the wires parallel to one another. If they were laid sufficiently close, they were perceived as a solid sheet of silver. This clearly contrasts with the Mamluk period in which metalworkers used silver sheets instead of wires to achieve the same goal.

Even more popular than wire inlay, however, was the application of silver dots scattered all over the surface of both hangers and suspension disks.⁹³ In contrast to the use of inlay on Mamluk objects, exemplified by the inlaying of entire guilloche bands or of complete vegetal ornaments such as foliate stems inclusive of rosettes or lotus flowers, the dots on revival Mamluk objects are used more sparingly and in a playful manner. With the dots the metalworkers accentuated the leaves of the stems or their swaying terminations instead of following the entire design. This accentuation of only part of the floral scrolls gives the impression that stems and leaves act independently of one another, something that will be addressed later. The presence of this specific use of silver dots is a clear indication that a knocker should be categorized as revival Mamluk, as they are totally absent on actual Mamluk wares.

Besides the use of specific techniques, some elements in the decoration on doorknockers also seem to point strongly to a Mamluk revival origin, both in the way the decoration is distributed over the field and in the ornamental motifs that make up the design. When the subdivision of the suspension disks is analyzed, the plaque is often seen to be divided up into three zones, comprising a broad central band edged by two narrower ones. Sometimes the decoration on the central zone is set into a number of medallions.⁹⁴ It is

⁹⁰ The group of objects that are studied here is by no means complete, but are sufficiently representative of this type of revival Mamluk doorknocker.

⁹¹ 1: A doorknocker in the Victoria and Albert Museum in London, inv. no. 108–1889; 2: A doorknocker in the Wartburg, published in Heidemann (2002); 3: A doorknocker sold in London, Sotheby's (2 May 1977), 28, pl. 32, lot 237.

⁹² Hildburgh (1906), 216. A later description of the inlaying technique used in a workshop in Damascus by Kalter (1992), 71 also only mentions the use of silver and copper wires.

⁹³ The following doorknockers exemplify this: 1: Sotheby's (London, 2 May 1977), 28, pl. 32, lot 237; 2: Sotheby's (London, 21 and 22 April 1988), 15, lot 44; 3: A doorknocker photographed *in situ* in Damascus, Bāb Tūma, see Wulzinger and Watzinger (1924), pl. 52b; 4: The Hague, Haags Gemeentemuseum, inv. no. OM 2–1937, published in Teske (1991), 46–47, there mistakenly attributed to the Near East, 15th–16th century; 5: London, Victoria and Albert Museum, inv. no. 108–1889; 6: Oxford, Ashmolean Museum, inv. no. 1976.124; 7: Paris, Musée du Louvre, inv. no. MAO 856 and published in Makariou (2002), 41 no. 11, where it is mistakenly attributed to the 15th century.

⁹⁴ Sotheby's (London, 21 and 22 April 1988), 15, lot 45.

difficult, however, to be sure whether this distribution is exclusive to Mamluk revival plaques, as the currently known group of Mamluk examples is small.

The three types of ornament found on revival doorknockers are epigraphy, geometry, and floral designs. Epigraphy is most commonly found on the central band of the suspension disk with the *hastae* of the consonants usually pointing inwards. Sometimes an inscription within a roundel is also placed on the trefoil finial of the hanger.⁹⁵ The content of the inscriptions found so far consists of titles, a characteristic of Mamluk metalwork objects in general. What is striking, though, is that the writing is often defective, which manifests itself in the occurrence of grammatical mistakes or in inconsistencies within the titles.⁹⁶ This suggests that the epigraphers were more concerned about the image of writing than about its content.

On those revival doorknockers where the suspension disk does not contain inscriptions, its widest and central band is filled with geometric designs, something not encountered so far on Mamluk specimens. These patterns consist of interlaced bands or half-circles that are intertwined. The smaller bands along the edges are also sometimes filled with guilloche bands. Although geometry is on the whole absent on the hangers, there is an exception: the trefoil finial at the base of the hanger in the Victoria & Albert Museum has a silver-inlaid 6-pointed star that surrounds a small inscription.⁹⁷ The 6-pointed star, the seal of Solomon, is common on Mamluk revival objects and on Ottoman buildings in the 19th century. They might be an indication of the Jewish background of the craftsman, reminding us of the activity of Jews in the craft of metalworking in Damascus.⁹⁸

Floral motifs serve two different roles, that on the suspension disks being subsidiary, for they are often cramped into narrow bands or serve as the background to the epigraphy. On the hangers, however, their role is much more outspoken as here they constitute the main decoration. Irrespective of their position, they can be characterised as strongly repetitive and lacking continuity. This is exemplified by the repetition of single elements, such as a 6-petalled rosette or a stemmed leaf. Moreover, there is a lack of fluidity, for the stems and leaves are often not linked, suggesting that the maker did not aspire towards creating an undulating design of leaves and stems. This clearly contrasts with the continuity and infinity of stemmed leaves found in many Mamluk metalwork objects and can as such be used as one of the criteria for establishing whether an object is of Mamluk revival type.

In conclusion, the features that distinguish Mamluk revival doorknockers from their Mamluk counterparts are of a technical and a decorative nature. On a technical level, the use of wire inlay or of silver dots scattered over the surface are clear indicators of a Mamluk revival origin, whereas sheet inlay was prevalent among Mamluk metalworkers. In addition, the presence of defective writing, the filling of suspension disks with geometric patterns, and the use of repetitive foliate motifs that lack fluidity point strongly, too, to a 19th or 20th-century date.

⁹⁵ Such an inscription is present on the doorknocker of the Wartburg, published in Heidemann (2002), 187, pl. 6.

⁹⁶ An example in which mistakes in the grammar, i.e. the absence of *alif* in the article preceding *‘izz* and the occurrence of an *alif maqṣūra* in *al-‘ālimā*, are combined with an inconsistency in the titles of the person that addresses both a sultan and an amir are the inscriptions on the Ashmolean doorknocker, inv. no. 1976.124a–d, which reads: ‘*l-‘izz li-mawlānā al-sultān al-malikī al-‘ālimā al-nāṣir al-janāb*’. The term *al-malikī* in this inscription implies that the person described is an amir; yet the earlier part of the inscription clearly refers to the sultan.

⁹⁷ On the hanger in the collection of the Victoria and Albert Museum, inv. no. 108–1889.

⁹⁸ Vernoit (1997), 238; Qāsimī (n.d) II, 486.

3.3.2 *The interlace type*

The type of doorknocker that features an interlace core is also not unique to Mamluk times.⁹⁹ There existed an earlier group of interlace hangers that were made in the Jazīra during the first half of the 13th century.¹⁰⁰ These hangers are characterised by an elongated lobed or cusped oval shape ending in a pointed finial below, while their interior design also features an openwork pattern of interlaced stems or arabesques. The aesthetic of these earlier hangers differs, however, from the Mamluks. In the Jazīran tradition, the focus is on the boldness of the curvy exterior lines and the fluidity of the interlaced stems in the interior. Attention is directed to the floral design by stressing the complexity and playfulness of the interlaced arabesques through the creation of different planes and the suggestion of infinity. In the Mamluk repertoire, the stems are more arrested, while the focus is shifted towards the decoration of the surface, which is often seen in Mamluk metalwork. It is only in the design of one knocker (cat. no. 26/2: Plate 83), in which that three-dimensionality is captured.

How these two traditions are related exactly remains unclear for the moment, especially when taking into account the time-lapse of more than one century between the surviving specimens of the two traditions. A link between the tradition in the Jazīra and the Mamluk practice is provided, however, by another category of objects, i.e. suspension brackets, which consist of similar intricately interlaced foliate designs manufactured in identical mode.¹⁰¹ It so happens that one of these brackets is known to have been produced in Damascus around 1240 AD by the craftsman Muḥammad b. Khutlukh who shows his affiliation to Mosul as he included the *nisba* al-Mawṣilī to his name. This introduces the type of design into the Mamluk heartland just before the Mamluk period.

The sub-group of knockers featuring a star at the core, from which emanate trefoils or leafed stems might well be a Mamluk invention, as possible forerunners are absent in Egypt or Syria. The more geometric approach in their design is related to the star patterns on overall star pattern doors and to the composition of medallions on medallion doors, which are often composed in the same way. A similar design was also used on round metalwork window grilles. The latter two examples show that the Mamluk metalworkers who designed this geometrically based doorknocker were well aware of an aesthetic that was shared among metalworkers and deemed appropriate for fittings.

This type of doorknocker was not continued in the Ottoman period in Syria or Egypt. A pair did, however, surface again in the 19th century as part of and attached to the revival Mamluk overall star pattern door discussed in Section 3.1.1. It closely resembles the door-hanger thought to have belonged to the entrance door of the *madrasa* and *khānqāh* of Sultan Barqūq (786–88/1384–86).¹⁰²

3.3.3 *Miscellaneous types*

The only doorknockers the shape of which seems to be entirely unrelated to former or contemporary traditions of doorknockers are those whose hangers have the form of a closed round embossed disk with a

⁹⁹ This has already been pointed out in Section 2.3.2.

¹⁰⁰ For a discussion of these objects, see Section 1.3.

¹⁰¹ Idem.

¹⁰² For this doorknocker (cat. no. 26/2) housed in Copenhagen, the David Collection, inv. no. 32/1997, see Folsach (2001), 323, no. 516.

protruding trefoil finial at their base. A clear connection does, however, exist between the technique, layout of the surface, and decorative motifs of the pair (cat. no. 24/9) attached to the *qibla* door in the *madrasa* of Sultan al-Nāṣir Ḥasan and the craft of portable metalwork objects. Their round shape and the distribution of their decoration in concentric bands interrupted by roundels is strongly reminiscent of the designs used on trays and dishes, although the bosses crowning the roundels are of course unique to this type of knocker.¹⁰³ Moreover, the lavish use of the inlay technique and decorative motifs such as radial inscriptions, foliate stems with peonies and lotus flowers are clearly related to portable objects made during and after the reign of Sultan al-Nāṣir Muḥammad, in congruence with what has been discussed in Section 3.1.1 for the inlaid overall star pattern door onto which this pair of doorknockers is attached. The maker responsible for this pair must have been entirely familiar with inlaid portable objects or might even have manufactured them himself.

3.4 WINDOW GRILLES

The properties of window grilles – fencing off an area while at the same time allowing both light and air to penetrate the space – explains their popularity in Islamic buildings in general. Metal was not the only material used, as witness for example the abundance of stucco grilles that were favoured because of the suitability of the material to be decorated in a wide range of motifs, angular or round. This is particularly well illustrated by a stucco window decorated with floriated kufic, which surrounds an arch-shape the core of which is filled with scrolls with bifurcated leaves.¹⁰⁴ To what extent, then, do the Mamluk grilles rely on the grilles made in a variety of materials by their forerunners? An answer to this question will now be attempted.

3.4.1 *The bosses-and-bars type*

It seems probable that metal grilles belonging to the bosses-and-bars type were already used in pre-Mamluk times. However, those that are found are all basic and devoid of surface decoration. Without such clear markers, it is impossible to date properly this type of grille, especially when keeping in mind that many of these buildings, such as the mosque of al-Azhar and that of al-Ṣāliḥ Ṭalāʾiʿ, not only underwent different degrees of restoration under the Mamluks but were even restored several times up to the present period.

Irrespective of the period in which this type of grille was invented, the metalworkers responsible for it might have looked for inspiration towards the one medium in which a comparable design was made, namely wood. Wooden turned and carved cylindrical bars and cubes of rectangular or square shape, directed in a diagonal mode, were an inherent part of the *mashrabīyas* that were set into window frames and of the wooden screens acting simultaneously to fence off and draw attention to a certain area, like the cenotaph or

¹⁰³ For example an inlaid tray in the name of the Rasūlid Sultan Yūsuf, datable before the sultan's death in 694/1295, and housed in Cairo, Museum of Islamic Art, inv. no. 4022. The tray is published in Wiet (1932), 103–4, pl. XLVII.

¹⁰⁴ For this grille that originally belonged to the mosque of al-Ṣāliḥ Ṭalāʾiʿ (555/1160) but which is now in Cairo, the Museum of Islamic Art, see Creswell (1952–59) I, 279, 285, pl. 100a.

the *sahn*.¹⁰⁵ Besides the layout, metalwork grilles show another overlap with wooden grilles: the indentations in the wooden bars, made through the turning of wood, were copied in metalwork, either by following these curves through casting or simply by indicating an indentation through engraving. The metalwork specimens might have proved a good alternative to wood, especially when positioned within the set of large rectangular windows in the lower part of the façade, which were a standard feature of Mamluk mosques. Given their location close to the ground, their material provided strength and robustness. The practicality of the manufacturing technique – easily multipliable components that were readily assembled into a grid – was an added asset.

The embellishment of the surface of especially the bosses in metalwork grilles might have been stimulated by the carved decoration on the surface of the bosses in the wooden screens and windows. In the latter, however, the decorative motif was mostly restricted to simple trefoils, whereas in the case of metal bosses not only was the repertoire wider, consisting of epigraphic, heraldic, and floral motifs, but also the colour scheme was enlarged through the use of different kinds of inlaid metals. Here, the familiarity with the contemporary craft of portable objects inlaid with gold and silver is again evident.

Mamluk metalworkers developed this type of grille further by adding three-dimensional elements such as openwork bosses and miniature grilles to the straightforward grid. The rigidity of such grilles was sometimes further reduced, and a certain playfulness added, by the addition of openwork trefoils and inscriptions set either within the grille or on top of it. This should be considered a typical Mamluk invention, given the wider picture of the Mamluks as busy innovators in the field of metalwork.

In the early Ottoman period, this Mamluk innovation of adding openwork designs between the squares formed by four adjacent bars was continued in Cairo. Single-word square-shaped openwork epigraphy featuring the word ‘Allāh’ was particularly favoured. To this, geometric forms were also added such as the repetition of swastikas filling the upper part of a grille of the *sabīl* of Khusraw Pasha in Cairo, dated 1535 AD, which included some of these epigraphic squares as well.¹⁰⁶ The bosses-and-bars type did survive into Ottoman times in all centres, mostly in a basic form only, which implies that its continuation was inspired by practical instead of aesthetic reasons.¹⁰⁷ Both time and costs were saved by omitting the surface decoration, while the grille’s function of fencing off areas still remained intact. Only at the early stage of the Ottoman era are a few grilles found with added engraved motifs, such as those in the mosque of Ṭawāshī in Aleppo, a reminder of the Mamluk legacy.

3.4.2 *The geometric type*

In window grilles with an overall geometric design the scope of possible sources of inspiration is wider, as not only do pre-Mamluk and contemporary grilles made of wood, stucco, and stone exist, but also, although on a smaller scale, identical designs in Mamluk metal lamps. This wider range of comparata is not altogether

¹⁰⁵ For the wooden screen surrounding the cenotaph in the complex of Sultan al-Manṣūr Qalāʾūn (683–84/1284–85), see Creswell (1952–59) II, pls. 69a–b. For the wooden elongated screen in the *sahn* of the mosque of Amir Altunbughā al-Māridānī (738–40/1338–40), see Raymond (2001), 189, pl. 206. For a carved and turned grille from the mosque of Aṣlam al-Silāḥdār (745–46/1344–45), now in Cairo, the Museum of Islamic Art, inv. no. 2726, see Atıl (1981), 202–3, no. 100.

¹⁰⁶ Raymond (2002), 322, no. 361.

¹⁰⁷ For this type of fitting in Jerusalem in the Ottoman period, see Natsheh (2000), 1092, 1107.

surprising given the fact that materials such as stone and stucco lent themselves much easier to the production of geometric patterns than to the rather rigid approach demanded by the bosses and bars design.

Of the two sub-types that were distinguished in Section 2.4.2, namely the grilles with star patterns and those with a scale design, the latter are the only type of which a pre-Mamluk metal specimen is still extant. This grille, consisting of horizontal rows either of large or small scales, is found in the façade of the *madrasa* and mausoleum of Najm al-Dīn Ayyūb (640–48/1242–50) in Cairo, and is distinguished from the later Mamluk specimens in that all its scales are round in contrast to the more diversified field of the Mamluk ones in which the larger round scales alternate with smaller ones which are crowned by trefoils.¹⁰⁸ As there is only this one specimen extant, it hardly seems probable that it was part of a well-established tradition in pre-Mamluk times. The plain fact is that, during the first decades of Mamluk rule, the builders of the religious buildings in the mausoleum's immediate neighbourhood do not seem to have been inspired by it, and installed the much more common stucco grilles instead. The design was, however, already used earlier in stone, exemplified by a window pierced with an overlapping scale design in the church of al-ʿAdrā in Dayr al-Suryān.¹⁰⁹

This scale design was also used on a large Mamluk metal lamp, a so-called *tannūr*, which has a large openwork faceted body that consists of five horizontal tiers composed of adjoined squares.¹¹⁰ The openwork body is crowned with a dome-shape with a crescent on top. On this *tannūr*, made for Amir Qawṣūn and dated 730/1329–30, the tiers consist either of squares with an openwork star unit or are decorated with an openwork scale design that is reminiscent of that used on grilles. The appearance of this particular design on a *tannūr* and grilles is not surprising, given the fact that a single metalwork shop could well have been responsible for the manufacture of both, keeping in mind that there are similarities with respect to their large size – the lamp's height was 260 cm, its width 107 cm,¹¹¹ – the need to use openwork for the radiation of light, and the architectural context in which they both functioned.

All in all, the limited set of grilles with a scale pattern that preceded the Mamluk metalwork examples suggests this design was not a popular one. This did not change in the Mamluk period, for Mamluk metalworkers continued to use the design sporadically only. The addition of surface decoration on one such Mamluk specimen shows the intention of the Mamluk craftsman to alter the optical effect of a fitting by embellishing its surface.

The 18th century saw the sudden reappearance of the scale design in Cairo, after it had fallen into disuse from the 15th century onwards. The revival, although short-lived, is connected to buildings that were ordered by one and the same patron, Amir ʿAbd al-Raḥmān Katkhudā.¹¹² This revival was part of his larger programme to install clear markers of Mamluk architecture in Ottoman religious buildings, as this same amir was also responsible for the addition of a medallion door in his *sabīl-kuttāb* (1157/1744) and for the installation of star pattern grilles as part of the restoration process in the Mamluk *madrasa* of Ṭaybars, as will be discussed below.

With respect to the other sub-group of geometric grilles, those with a star pattern design, there are no pre-Mamluk metal forerunners extant in Egypt or Syria. However, earlier and contemporary star pattern

¹⁰⁸ Adjacent to this scale grille is a bosses-and-bars type of grille, which is a modern addition.

¹⁰⁹ Evelyn White (1926–33) III, 185, pl. 54.

¹¹⁰ This *tannūr* is part of the collection of the Museum of Islamic Art in Cairo, inv. no. 509 and is published in Wiet (1932), 40–41, pl. 7.

¹¹¹ Wiet (1932), 40.

¹¹² For depictions of the *sabīl-kuttāb* of Amir ʿAbd al-Raḥmān Katkhudā (1157/1744), see Raymond (2001), 328, nos. 367–68. For the grilles belonging to the mosque and *sabīl-kuttāb* of Shaykh Muṭahhar (1157/1744), see idem, 358, no. 302.

grilles executed in stucco, wood, and stone give evidence that the type was widespread and well established. The earliest extant marble arch-shaped grilles with geometric patterns based on the circle, star and hexagon are located in the Umayyad mosque in Damascus and go back to the period of its construction.¹¹³ In Fatimid Cairo, other examples are found such as the marble star-shaped grille set in between columns in the façade of the mosque of al-Aqmar (519/1125)¹¹⁴ and a marble star patterned voussoir in the *mashhad* of al-Imām Ḥusayn (548/1153) in Cairo.¹¹⁵ An early 13th-century granite transom window was located in the Ayyubid mausoleum of Sayf b. Dhī Yazan (610/1223).¹¹⁶ Wooden examples go back to the 12th century, as a specimen originating from the al-Azhar mosque in Cairo shows.¹¹⁷ The wooden grilles in the façade of the *madrasa* of Sultan al-Nāṣir Ḥasan (757–61/1356–60) make clear that this material also continued to be used for small grilles in the Mamluk period.

Pre-Mamluk stucco examples are even more numerous, and they were often used in multiple numbers within the same complex. This is exemplified in the mosque of Ibn Ṭūlūn (263–65/876–79), which housed multiple star pattern grilles in the façade and inner arcade.¹¹⁸ The variety in designs is apparent also in the mosque of al-Azhar (359–61/970–72) where variations on the theme of the 6-pointed star are found.¹¹⁹ Star pattern grilles made in stucco are found as well in Coptic churches, like those in Dayr al-Baramūs.¹²⁰ Within the Mamluk period, this variation in star grilles made in stucco set in the façade, in the entrance portal to the mausoleum, and in the arcades of the mausoleum in the complex of Sultan al-Manṣūr Qalāʾūn in Cairo is astounding.¹²¹ Windows in the shape of roundels, and pointed or round arches in double or single mode abound, all filled with designs ranging from simple to complicated geometric designs. This variety is further enhanced by the presence of a Frankish iron hammered grille located above the entrance and installed as a trophy. This fashion continued in the ensuing Bahārī period, as shown for example by the grilles in the *madrasa* (695–703/1295–1304) and the mosque (718/1318) of Sultan al-Nāṣir Muḥammad in the citadel.¹²²

It is precisely during the reign of this sultan, al-Nāṣir Muḥammad, that the earliest extant metalwork grilles (cat. no. 10/1: Plate 29 and cat. no. 10/2: Plate 30) with a star pattern are found, i.e. in the *madrasa* of Ṭaybars al-Wazīrī (709/1309–10) in the mosque of al-Azhar. It seems probable that the popularity of stucco star pattern windows in general and the presence of this type of grille in the *sahn* of the latter mosque in particular, as already referred to above, served as a source of inspiration to the metalworker who was responsible for the manufacture of grilles for this *madrasa*. The reason why metal was preferred above stucco might lie in its strength, as these grilles, contrary to the stucco specimens mentioned above, had to be located in the lower region of the building within the easy reach of the hand.

Mamluk metalworkers also used openwork star patterns on the multi-storey lamps called *tannūrs*, whose multiple facets were filled with identical star patterns, as can be seen on the *tannūr* made for Sultan

¹¹³ Creswell & Allan (1989), 54–55, 70–71, pls. 32, 33, 43, 46.

¹¹⁴ Creswell (1952–59) I, pl. 83a.

¹¹⁵ Idem, pls. 96c–d.

¹¹⁶ For the granite *claires-voies* now located in Cairo, the Museum of Islamic Art, inv. nos. 2650 and 4331, see Delpont (2001), 203, nos. 212–13.

¹¹⁷ For the square wooden star pattern grilles, see Pauty (1931), 75, pl. 97.

¹¹⁸ Creswell & Allan (1989), 402–4, pl. 265, fig. 266.

¹¹⁹ Creswell (1952–59) I, pl. 7a, pl. 9b.

¹²⁰ Evelyn White (1926–33) III, 236, fig. 18, pl. 87b; 239, pl. 89.

¹²¹ For an overview of the façade, see Creswell (1952–59) II, pls. 65a–b, 66b–c; for the grilles in the entrance portal to the mausoleum, idem, pl. 68, and for the grilles in the interior arcades, idem, pls. 75a–b.

¹²² For the grilles in the minaret of the *madrasa* (695–703/1295–1304) of Sultan al-Nāṣir Muḥammad, see Raymond (2001), 209, pl. 224. For those of the same sultan in his mosque (718/1318) at the citadel, see Creswell (1949) I, pls. 238c–d, 239b–c. The popularity of stucco grilles can be accounted for by the flexibility of the material, which could be transformed into a diverse spectrum of motifs, and by the addition of colours, either painted on its surface or inserted by way of coloured glass. For the effect of multi-coloured stucco windows in the palace of Amir Bashtāk (736–40/1335–39), see Raymond (2001), 231.

al-Nāṣir Ḥasan.¹²³ Sometimes these stars even contained a blazon at their centre¹²⁴, a design encountered as well on the small grilles (cat. no. 26/10: Plate 94, and cat. no. 26/11) in the *sahn* of the *madrassa* and *khānqāh* of Sultan Barqūq (786–88/1384–86). Again, this overlap in design might have been caused by the physical closeness of the crafts of metalwork fittings and large-sized metalwork mosque furnishings.

The abundance of star pattern grilles in various materials in pre-Mamluk and Mamluk constructions provided the Mamluk metalworker with numerous models. Given the wide variety of star designs that were executed in stucco, it is surprising to observe a less varied picture for grilles worked in metal. This can partly be accounted for by the suitability of stucco to take on a wide variety of forms, on the one hand, and the longstanding tradition of stucco grilles that would have encouraged stucco-workers to come up with new patterns, on the other hand. The seemingly retrograde designs of star pattern grilles executed in metalwork might indicate that these grilles were not intended to replace the highly diversified craft of stucco grilles, but that they were merely perceived as a welcome alternative, valued for their strength and their protective qualities in the lower zones of buildings especially.

Although grilles with an openwork star design fell into disuse for one reason or another during the 15th century, the Ottomans were responsible for a short-lived revival of this type in Cairo. As already alluded to above, the installation of two star pattern grilles was part of the restoration process of the Mamluk *madrassa* of Ṭaybars al-Wazīrī (709/1309–10) initiated in 1167/1753 by Amir ‘Abd al-Raḥmān Katkhudā. The choice for this type of metalwork grille in the building’s façade must have been motivated by the presence of two other, but Mamluk, star grilles (cat. nos. 10/1 and 10/2) in the same building. That the Ottoman grille makers were not simply copying the old design is shown by the presence of a rectangular line of an openwork Qur’ānic inscription crowning the grille.¹²⁵ This addition is not only unique within the star pattern type but also within the range of Ottoman window grilles, which on the whole are devoid of oblong epigraphic bands, but which sometimes do include square epigraphic plaques.¹²⁶

Again, during the 19th century, there was a renewed interest in overall star pattern grilles in Cairo. The latter should be understood in the broader frame of the Mamluk revival, in which the builders chose typical Mamluk designs in order to establish a link with the past. Clear examples of this are the grilles in the mosque of al-Ḥusayn and those in the al-Rifā‘ī mosque (1896–1911 AD), the latter located opposite the Mamluk mosque of Sultan al-Nāṣir Ḥasan.

Over the centuries, however, the Ottomans developed an aesthetic for grilles which was very different from that of the Mamluks. The most characteristic features of these grilles, which on the whole are composed of repetitions of floral and geometric designs, are the denseness and the concentration of the patterns. The presence of two or three of these grilles in close proximity, as was common on the building type favoured most by the Ottomans in Cairo, the *sabīl-kuttābs*, immediately evokes to the onlooker the function of the building as a provider of water for the thirsty. The grilles not only allowed people to reach the water through the openings made in the lower side of the grille for this purpose, but their density also preserved the coolness of the place and thus the water. The popularity of this type of building in Ottoman times is not surprising given that the costs of building were relatively low owing to the comparatively modest size of many *sabīl-kuttābs*. And yet the type was held in high esteem as it combined two important

¹²³ For this *tannūr*, now housed in Cairo, the Museum of Islamic Art, inv. no. 92, see Wiet (1932), 1–4, pl. XII.

¹²⁴ For this undated Mamluk lamp, see Behrens-Abouseif (1995), 18, pl. 5.

¹²⁵ The inscription consists of part of Qur’ān 9:18.

¹²⁶ This is shown for example by the grille in the *sabīl-kuttāb* of Muḥammad Katkhudā Mustahfizān (1088/1677), into which plaques with the inscription ‘Allāh’ are inserted.

religious tasks: providing both water and education to the needy and the poor. The importance of the grilles in this popular building-type in Ottoman times might explain why Ottoman metalworkers focused on developing the designs of window grilles instead of metalwork doors, the latter being of much more importance during the Mamluk period.

3.5 LINKED MEDIA IN THE MAMLUK PERIOD

So far many examples have been produced that give evidence of an overlap in or an exchange of techniques and decorative motifs between metalwork fittings and metalwork portable objects, on the one hand, and between metal fittings and comparable fittings executed in other materials such as wood, stucco or marble, on the other hand. The types of designs and decorative motifs present on these artefacts are not exclusive to these materials and uses. On the contrary, when one roams through Mamluk buildings in Cairo, Damascus, Aleppo, and Tripoli, the eye feasts on star patterns, zigzag motifs, medallions, arabesques, and inscriptions in a wide range of colours and variety of styles. They do not only cover the interior of buildings such as wood-painted ceilings, the marble-mosaic floors, *mihrābs* and wall-coverings, but also their exterior, as in the stone domes of Cairo, so characteristically decorated with geometric designs. In addition, furnishings like wooden *minbars*, *dikkas*, and *rahlās* are almost hidden under a blanket of patterns, while these designs and ornament recur also on Qurʾān frontispieces, covers of Gospel books and Qurʾāns, glass lamps, carpets, textiles, all produced in the Mamluk period. This raises the question if there existed a connection between the different Mamluk crafts that make use of identical designs or decorative motifs? Let us now focus more closely on a selected number of these objects with comparable designs to try to grasp their visual impact and to see to what extent they are identical to and perhaps even linked to metalwork fittings. As the different categories of objects with features parallel to Mamluk metalwork fittings are simply too extensive to be tackled *in toto*, attention will be devoted to a limited group of objects, all of which are rectangular in shape with a two-dimensional surface that was decorated. They are frontispieces and bookbindings, wooden furnishings like *minbars*, and marble panels. Of each of those, the characteristics of their respective designs and decorative motifs will be discussed, after which these features will be compared to those that characterise metalwork fittings in order to establish relationships between the crafts.

Mamluk Qurʾān illuminators clearly favoured a star pattern design for their frontispieces and finispieces as the makers of overall star pattern doors had done. The number of star units filling the central field of the page varied from a single star unit to two star units, one positioned above the other, and multiple star units surrounding a central polygon, the last being quite exceptional.¹²⁷ Especially during the late 14th century, the preferred type was clearly the one with the single star unit, favoured perhaps for its centralized focus and its restricted number of component parts, the size of which could therefore be increased to allow for the inclusion of extensive details in the decoration. On the whole these illuminated pages include inscriptions in kufic, either single ones within the central star or two inscriptions set in an oblong band above and below the star field, something that is absent for example on contemporary Qurʾāns made in Baghdad.¹²⁸ Border bands are always present, and they usually consist of a narrow band filled with geometric fretwork or

¹²⁷ For a frontispiece with multiple star units, in volume six of a Qurʾān of Baybars al-Jāshankīr, 704–5/1304–6, see James (1988), 43, pl. 21.

¹²⁸ Among the frontispieces that are devoid of inscriptions are those of the Anonymous Baghdad Qurʾān, 701–7/1302–8, published in James (1988), 84–85 and that of the Uljaytu Baghdad Qurʾān, 705–12/1307–13, *idem*, 88.

interlace that borders the star pattern field and the inscription bands (if present) on all four sides, and a much wider border filled with broad foliate motifs that is present on all sides but for the inner side of the page. All in all, the illuminators always strove for a symmetrical arrangement of the page.

In the composition of the star pattern, the illuminators clearly differentiated between the framing and the infill 'plaques'. For the framework of the entire design, they used either black outlines or white ones decorated with black interlace ornament. The different component parts of the star unit were further distinguished from one another by deliberately juxtaposing units of different colour and decorative motifs. The juxtaposition of gold and blue backgrounds for adjacent plaques – such as a blue coloured star surrounded by gold kite-shaped figures which were in their turn encompassed by blue hexagons – was a favoured choice, as was the use of a larger colour palette for those floral designs that were deemed more important. And during the early 14th century especially, the illuminators showed a playful approach by alternating hatched with plain backgrounds. The elusive quality of such star designs was further enhanced by a wide variety of foliate motifs used on parallel parts, and in cleverly augmenting or reducing the size of motifs and juxtaposing intricate patterns with simple ones. In this variation, however, they worked towards a unity of colour and motifs for identical plaques, so that the star itself is clearly differentiated from the hexagons and the kite-shaped figures that surround it. It is important to note here that this was not exclusive to Qur'ān frontispieces, as comparable results are encountered in Gospel books.¹²⁹

Although the illuminators made different choices with respect to the proportion of the design on the page, the central star pattern is usually set in a square-like shape. The space filled by the inscription bands located above and below this field and especially the wide floral outer border band add height and momentum to these frontispieces.

Star patterns were also a popular decorative device on bookbindings. Again, they are found as a single star unit, as double star units located one above the other, and they were rendered in multiples. In the latter case, these multiple star units were distributed along the lines of an X-shape.¹³⁰ On the whole, the star pattern really dominates the bindings as only few contain inscriptions¹³¹ and the predominantly geometric border bands are usually narrow. The binding-makers differentiated between the different components of the star unit in juxtaposing densely decorated plaques with almost void ones, and by varying the type of ornament chosen. To this, they also added colour, the preferred colour being gold. Again, forms of identical shape and function, such as the kite-shaped figures or the hexagons that surround the central star, are decorated identically so as to establish rhythm and order within the design.

If now the aesthetic of frontispieces and bookbindings is compared to that of metalwork doors of the overall star pattern type, there are clear correspondences in the symmetry of the layout, the arrangement of the central field with star patterns and parallel decorative motifs, and the creation of a sense of order in the star design by the differentiation of the decorative filling of the different components. In the choice for script styles, the craftsmen differ: while metalworkers chose the readability of *naskh*, illuminators favoured the

¹²⁹ This can be illustrated by the frontispiece of a Gospel in Cairo, the Coptic Museum, inv. no. 90, made in Damascus and dated 1340 AD, published in Gabra (1993), 74. In layout and colour-scheme this illuminated page resembles a frontispiece of a Qur'ān, dated 741/1341, which is attributed to the same city and published in James (1988), 143, fig. 95 and 227, cat. no. 21. The pages show the close connection in illumination across the Muslim and the Christian faith.

¹³⁰ Examples of Qur'āns that carry this type of distribution are a binding of a Qur'ān in Oxford, the Oriental Institute, inv. no. A12170, datable to the 14th or 15th century and made in Egypt, published in Bosch [*et al.*] (1981), 115–16, no. 21 and a 14th-century Qur'ān in Berlin, Museum für Islamische Kunst, inv. no. I 839, published in eadem, 112–13, no. 19 and in Sarre (1923), 12–13, pl. 2.

¹³¹ An exception is the 14th-century Qur'ān now in Berlin mentioned in the previous note, whose star pattern field is surrounded by a border band consisting of lobed cartouches with Qur'ānic texts alternating with quadrilobes.

angularity of kufic. With respect to scale and distribution of patterns, overall star pattern doors are more closely related to bookbindings than to frontispieces. On doors and bookbindings, the star pattern is not only the dominant decoration spatially, but they make use of star patterns of greater complexity than those found on frontispieces as well.¹³² In addition, these two mediums have to cope with the limitations of a restricted colour palette. The aesthetic sought after by the metalworker and the leather-tooler is different from that of the illuminator. They concentrated more on the geometric design proper and on its geometric lines. These had to speak out more than the individual details. Although the effect was similar, the reasons for it were not. While the material and instruments used by the tooler restricted him somewhat in the rendering of refined motifs, in the case of doors it was the distance from which the object was perceived that regulated this concentration on the design. The effect created by the illuminator of frontispieces was an entirely different one. The merits of the extensive colour palette used on the colourful frontispieces and finispieces in addition to the use of precision tools enabled the illuminator to concentrate more on the details of the decoration of each component part. Besides this, he focused principally on the visual effects brought about by the contrasting of colours.

Although the comparison between these three mediums has shown different degrees of overlaps, in the end each of them transforms the star pattern in its own unique way, in which the techniques, the fineness of the material and tools, and the use of colour play a dominant role. From this adherence to their own formal and technical peculiarities one may conclude that these crafts used and transfigured the designs quite independently from one another, none of them acting as the principal source of inspiration for the other. One Qurʾān, however, presents a curious overlap with doors that almost suggests that a specific order was given to the illuminator and the metalworker to synchronise the designs. In a multi-volume Qurʾān made for Sultan Barqūq and presented as *waqf* to his *khānqāh*, one binding carries an overall star pattern design, while another is decorated with a medallion.¹³³ It is exactly in the *khānqāh* of this sultan that a door of the star pattern type (cat. no. 26/1) and those of the medallion type (cat. nos. 26/3 to 26/8) are combined in one and the same building for the first time in Mamluk buildings. Moreover, the layout of the medallion on the door and that of the binding are quite close, as on both of them the central medallion, inclusive of its trefoil finials, is expanded and dominates the centre spatially. This overlap seems to be more than just coincidental, even more so as their use – both giving entrance to a religious sphere – is identical.

Having now discussed links between frontispieces, bookbindings, and metalwork doors, let us divert our attention to another medium, i.e. woodwork, on which star patterns are a dominant feature. In the Fatimid period a profound new development takes place in woodwork that directly affects the development of metalwork overall star pattern doors. Besides the customary subdivision of a wooden surface into decorated panels common on doors as discussed in Section 3.1.3, a new distribution of patterns is developed, that of an uninterrupted and continuous design that covers the entire surface. Linked to this is the preference

¹³² It is remarkable that some of the frontispieces of Qurʾāns made in Iraq in the early 14th century are decorated with rather more complicated star designs, comparable to those encountered on Mamluk metalwork doors. An example is the left-hand frontispiece of the second volume of the Uljaytu Qurʾān made in Mosul between 1306 and 1311 AD. See James (1988), 102, pl. 66, and p. 237.

¹³³ The volumes are in France, Bibliothèque Nationale Ms. arabe 5845 and 5846, published in Guesdon & Vernay-Nouri (2001), 142–45, nos. 103 and 105. Another example of the combination of these two designs, but in one and the same binding, the cover being decorated with an overall star pattern while its doublure carries a medallion design, is a 14th-century Qurʾān in Oxford, The Oriental Institute, inv. no. A12172, published in Bosch (1981), 106–8, cat. no. 106.

for geometric patterns, more specifically star patterns, which had already been used to fill the rectangular panels, but on a much more limited scale.¹³⁴

The earliest example of such a continuous geometric pattern is the *minbar* originally ordered by Badr al-Jamālī in 484/1091 for the *mashhad* of Ascalon, which was later relocated to the mausoleum of Ibrāhīm in Hebron.¹³⁵ The pattern is composed of large stars and hexagons the inside of which is carved with foliate stems. In Cairo, this distribution is visible for the first time on the portable *mihrāb* made for the mausoleum of Sayyida Nafisa (532–41/1137–47).¹³⁶ There, a continuous design, made up of hexagons and stars and composed of broad framework strips and narrow infill plaques, covers the entire surround of the recessed niche. A decade later, this geometric style also dominated both the carved wooden *minbar* (550/1155) at the mosque of Amr at Qus and the portable *mihrāb* (549–55/1154–60) at the mausoleum of Sayyida Ruqayya.¹³⁷

The star designs on these wooden furnishings have in common that they are composed of comparatively even-sized component parts, which lends the pattern a non-hierarchical feel. Secondly, two different methods – each with its separate aesthetic – of distributing the patterns onto the wood are found. One consists of moulded framing plaques and infill plaques with which clearly defined star units or hexagon units were created. The other method, and this is found on the recessed niche of the *mihrāb* of Sayyida Ruqayya, is the distribution of filler plaques only. This latter star pattern is closely intertwined, as the stars share the adjoining hexagons among each other.

It is the latter aesthetic, featuring a non-hierarchical and intertwined star design, that provides a link between Fatimid woodwork and metalwork. The introduction of a comparable pattern consisting of openwork plaques, and restricted to the metal facing of the entrance door (cat. no. II/1) in the mosque of al-Ṣāliḥ Ṭalāʿī (555/1160), puts it right in the middle of the period in which the main developments in geometry in woodwork took place. As the intermediate stages towards a large uninterrupted geometric field are extant only in woodwork, it is tempting to conclude that Fatimid metalworkers did not go through similar stages but satisfactorily translated the mature geometric style of Fatimid woodwork into metal. However, a possible loss of artefacts, and with it the disappearance of experimental phases in metalwork, should be taken into account as a possibility.

The aesthetic of even-sized star units as described above was also continued on metalwork doors in the early Mamluk period, as can be seen on the entrance door (cat. no. 3/1: Plate 7) of the complex of Sultan al-Manṣūr Qalāʾūn and a door (cat. no. 5/1: Plate 14) in the name of Amir Mankūtāmūr. However, a more hierarchical approach, with star units of different size and a clear differentiation between the components parts of a star unit, such as a large star surrounded by much smaller hexagons, is also apparent on metalwork doors in the early Baḥrī period. This latter approach appears simultaneously on woodwork *minbars*, such as the *minbar* made for the mosque of al-Ṣāliḥ Ṭalāʿī on the order of Amir Baktīmūr in 699/1299.¹³⁸

¹³⁴ For the early use of geometric patterns in wood, see for example the tenth-century doors leading to both the choir and the *haykal* in the church of the Holy Virgin at the Monastery of the Syrians (Dayr al-Suryān) in the Wādī al-Naṭrūn, published in Evelyn White (1926–33) III, pls. 64–65 and pls. 58–60 for the doors of the *haykal* and those of the choir, respectively.

¹³⁵ Vincent (1923) I, 219–25 and II, pls. 25–28.

¹³⁶ Pauty (1931), 65–66, no. 421, pls. 75–76; David-Weil (1931), 4–5, no. 421. The portable *mihrāb* was ordered by the caliph al-Ḥāfiẓ, during whose reign the mausoleum was restored twice, once in 532/1138 and the second time in 541/1146.

¹³⁷ The dedicatory inscription on the *mihrāb*, as recorded in David-Weil (1931), 12, refers to a hitherto unknown amir. As the latter's relative pronouns indicate he served under both the caliph al-Fāʿiz and his vizier al-Ṣāliḥ Ṭalāʿī, the furnishing is datable between 549/1154 and 555/1160. For this *mihrāb* of Sayyida Ruqayya, see Pauty (1931), 67–70, pls. 80–87; David Weil (1931), 11–14, pls. 16–17. The *minbar* adorning the Fatimid mosque at Qus, which was founded in 500/1106, is dated 550/1155. For an overview and details of the design of the *minbar* at Qus, see Pauty (1940), 41–48, pls. 1–3, 5; Lamm (1935–36), pl. 11; Kühnel (1950), 56–58, pls. 3–4.

¹³⁸ ʿAbd al-Wahhāb (1946) II, 38. For the development of wooden and marble *minbars* in the Baḥrī period, see Karnouk (1981).

When this mature style had established itself on *minbars* and on overall star pattern metalwork doors, they seem to have developed independently from one another. In some ways they even differed considerably. The effect of the star patterns on rectangular metalwork doors in which symmetry, and an alternation between flat and embossed plaques, created a strong linear design is totally different from that on *minbars* where the patterns are fitted within the triangular surfaces of the side-panels, something which curtails the effect of the star pattern. In addition, Mamluk metalworkers experimented with decorating the surface of the framing plaques, a feature which is not found on Mamluk woodwork *minbars*. The enlivenment of the surface with different materials – and thus colours – was more widely used on woodwork, where first ivory and ebony, and later pieces of bone were used. There is however, one connection: the use of embossed stars as on the *minbar* in the mausoleum and *sabīl-kuttāb* of Sultan al-Ghūrī was in all probability copied from its predecessors in metalwork.¹³⁹

As has been shown, the first overall star pattern doors executed in metal reveal a clear dependence on the development of star patterns in Fatimid woodwork. It was in the latter craft that an uninterrupted and continuous star pattern design on large wooden surfaces took place. The first metalwork doors are clearly modelled upon this principle. Once the style had, however, matured, each seems to follow its own development. Occasionally, however, there is an exchange of features going in two directions, such as the implementation of embossed stars in woodwork, something long established in metalwork, or the technique of grooving and inlaying in metalwork.¹⁴⁰

Besides the correspondences and differences between fittings and the art of the book and wooden furnishings discussed so far, the third material to be considered is marble, specifically marble panels into which medallion designs are carved. They predate the extant medallion metalwork doors somewhat, as the earliest extant marble panels with a medallion design in Cairo are found in the mosque of Amir Alṭunbughā al-Māridānī (738–40/1338–40) and in the *madrasa* of Amir Ṣarghatmish (756–57/1356–57).¹⁴¹ That the tradition was already established at an earlier date is shown by the presence of four slabs in buildings in Damascus, Hebron and Jerusalem that were cut between 727/1328 and 732/1332. They were manufactured in an itinerant workshop that was originally hired by the then governor of Damascus, Tankiz, for the restoration of the Umayyad mosque.¹⁴²

The scale of the medallions vis-à-vis the rectangular field is visually close to that used on metalwork medallion doors. On both, the medallion is not only central to the panel but dominates it spatially. As on medallion doors, the medallion as well as the corner-pieces have trefoil finials that give a sense of direction. There are, however, clear differences as well: whereas the maze of foliate stems that fills most medallions of metalwork doors point outwards, the marble panels are decorated with a number of large spiral scrolls that draw attention towards its interior. In addition, the absence of inscription bands on all the marble slabs and the omission of border bands on the ones made outside Cairo show that the marble cutters and the metalworkers each followed their own path. However, the two slabs from buildings in Cairo are framed by a

¹³⁹ For an example of the application of embossed stars in woodwork on the *minbar* in the mausoleum and *sabīl-kuttāb* of Sultan al-Ghūrī, see ‘Abd al-Wahhāb (1946) II, 145, no. 224.

¹⁴⁰ For the technique of grooving and inlaying on metalwork doors, see the entrance door (cat. no. 9/1) of the *khānqāh* of Baybars al-Jāshankīr.

¹⁴¹ For a reproduction of the former slab, see Meinecke (1992) I, pl. 60e. The latter panel, encompassed by a floral border band, is on display in Cairo, the Museum of Islamic Art, inv. no. 2785.

¹⁴² For a discussion of this marble workshop and for photographs of all surviving specimens, see Meinecke (1992) I, 96–98, pls. 60a–d. Its members were responsible for the marble plates of the vestibule of the east portal of the Umayyad mosque at Damascus, as part of the restoration work (727–30/1326–30); for the marble panels at the *dār al-dhahab*, the residence of Tankiz (728/1328); for the marble panels at the *madrasa* of Tankiz in Jerusalem (728–29/1328–29); and finally for the marble panels for the interior of the *Ḥaram* at Hebron (732/1331–32).

floral border band, which brings them somewhat closer to their counterparts in metal. All in all, the differences in the actual elaboration of the design between the two media makes clear that they developed independently from one another.

The comparison between the media discussed above makes it clear that their practitioners make use of overlapping and intrinsically closely related themes, while simultaneously the effect of these patterns on these different categories of objects varied in accordance with their size, technical complexity, colour schemes, and other such parameters.¹⁴³ This variation implies that Mamluk metalwork fittings were not directly linked to – and even developed quite autonomous from – marble panels, Qurʾān frontispieces and bookbindings, although all these media do share common designs. The question arises whether the connection between these media should be understood as being just coincidental or whether there was a more concerted effort aimed at stimulating this overlap. As yet no relevant references in the Mamluk literary sources have been found that give evidence of royal design ateliers. Nor has material evidence such as pricked or preparatory drawings or stencils yet come to light. There is therefore no direct evidence to suggest the existence of a kind of *kitābkhāna* from which ideas and designs were disseminated from a design studio across several media, along the lines argued by Lentz and Lowry for Timurid Iran.¹⁴⁴ If there was no institution encouraging this interchangeability of designs, one may perhaps think in terms of a less formal exchange of ideas and aesthetics among designers, such as patterns captured on paper sheets or in pattern books.¹⁴⁵ The presence of designers (*al-rassāmūn*) in the markets of Cairo is indeed recorded twice by al-Maqrīzī.¹⁴⁶ The text is, however, unclear about their specific task. There seems to be a close connection to textile production as one reference places them among weavers (*al-ḥabbākūn*), darners (*al-raffāʾūn*), and tailors (*al-khayyāṭūn*).¹⁴⁷ A possible exchange of designs could be facilitated by the use of paper, as this could act as an intermediary between different media, thus making it possible that a design applied on one medium was copied on another medium without the craftsman having seen the original.¹⁴⁸

In the discussion of the dispersion of designs, it is important to note the specific nature of cities such as Cairo and Damascus in the Mamluk period. Firstly, the population of Cairo was huge, with estimates ranging from 500,000 to 600,000 under the reign of Sultan al-Nāṣir Muḥammad in circa 1340 AD.¹⁴⁹ This size has implications for the network of patronage; more networks and patrons simply meaning more activity and production among craftsmen. A diversified field of patrons in combination with the building boom – Meinecke lists a total of 913 new and restored mostly public buildings during the Mamluk period for Cairo alone¹⁵⁰ – must have led to a close familiarity with and an active use of patterns to keep up with the demand.

¹⁴³ This is exemplified by the occurrence of an interwoven 8-pointed star pattern used on doors, a Gospel, and a metal box in a Muslim, a Christian, and a secular context in the late 13th century. Differences are apparent in the shape (round versus rectangular), the size of the surface (varying from a diameter of 15 cm to a height of more than 4,5 meters), the composition and decoration of the design (varying from framing lines only versus the use of framework combined with infill plaques in different degrees of decoration). They are found on the entrance door (cat. no. 3/1) to the complex of Sultan al-Manṣūr Qalāʾūn (683–84/1284–85), the door (cat. no. 5/1) ordered by Amir Mankūtāmūr (698/1296), a late 13th century cylindrical box, now in the Cleveland Museum of Art, no. 44.822a and published by Baer (1983), 133, and a Gospel, copied in 1272 AD for the church of al-Muʾallaqa in Cairo, now in the Coptic Museum, Cairo, bibli. 92, published in Leroy (1974), 64–65, pl. 1.

¹⁴⁴ Lentz and Lowry (1989), 159–237.

¹⁴⁵ According to Grabar, (1992), 144, 264, note 19, the earliest known model book of geometric forms that was of practical use to the craftsman, instead of being a mathematical study intended for scholarly use, was the book entitled *Miftāḥ al-Ḥisāb* by al-Kāshī which dates from the 15th century.

¹⁴⁶ Maqrīzī (1853) II, 101, 105.

¹⁴⁷ Maqrīzī (1853) II, 101. Qāsimī (n.d.) I, 154–55, too, identifies the craft of the *rassām* with that of textiles.

¹⁴⁸ Bloom (2001), 189–92.

¹⁴⁹ Raymond (1984), 22. In 1348 AD when the plague had taken its toll, the same author, p. 30, estimates the number of inhabitants in Cairo between 200,000 and 250,000. Although this number seems low compared to that during the reign of Sultan al-Nāṣir Muḥammad, it even then exceeded the number of inhabitants in 1328 in Paris four times.

¹⁵⁰ Meinecke (1992) II, p. VI.

Secondly, the concentration of markets – and workplaces – within a fairly limited space, as described by al-Maqrīzī for Cairo, makes it clear that the court did not need to assemble the artists in design ateliers, as they were already working in close proximity to one another.¹⁵¹ It enabled the craftsmen to become easily acquainted with the designs in media different from theirs. And thirdly, the religious buildings for which objects were produced were public, accessible to all, and in the major cities of the Mamluk realm were concentrated within a limited space. Therefore, the craftsmen did not only have access to each other's work but also to that of their forerunners. With this abundance of public buildings, patronage, and the concentration of craftsmen within a limited geographical scope the interchangeability of designs among different media seems an entirely natural phenomenon.

CONCLUSION

With respect to designs and techniques, Mamluk metalwork fittings demonstrate a continuation of past traditions of metalwork fittings. Inspiration could be found close at home for pre-Mamluk fittings were installed in public buildings in Cairo and Damascus but new ideas might also have arrived by way of itinerant craftsmen, in particular metalworkers formerly affiliated to Mosul, a centre renowned for its metalwork production during the first half of the 13th century. Although the Mamluk metalworkers strongly relied upon the designs of their forerunners, they did not resort to literal copying. They distributed the basic components of a design in new ways, in which harmony and symmetry, and a love for surface decoration – in particular the written word – were principal points of departure. These designs were deemed so successful, that already in the early stages of Mamluk rule layouts were standardized and reused for long stretches of time. In addition, Mamluk metalworkers widened the scope of the craft by introducing novel designs, such as the medallion door and the star pattern grille.

The makers of metalwork fittings developed their field further by using techniques and decorative motifs that had been developed in the craft of portable metalwork objects. The inlaying technique that was used on objects such as *kursīs* and rosewater sprinklers, was transferred to the huge surfaces of doors, facilitating experiments with colour. In addition to this, the introduction of ornament borrowed from portable objects such as radial inscriptions, lotus flowers, zigzag patterns, and knotting widened the decorative repertoire of fittings. It is in lamps that the strongest connection with metalwork fittings is found, their comparable techniques, decorative motifs, size, and monumentality suggesting they were made in the same workshops.

In a wider context, Mamluk metalwork fittings share patterns and decorative motifs with a wide variety of Mamluk media. Designs that were already well-established in stucco or wooden fittings, such as star patterns, came to be manufactured in metal as well. Moreover, these motifs are shared with media in which a direct relationship with metalwork fittings seems more farfetched, such as frontispieces and bookbindings. In each of those various materials, the used designs were transformed differently, dependent upon parameters such as the fineness of the tools and the technique, the use of colour, and the optical effect sought after. As yet no evidence has come to light to suggest the existence of a royal design studio, but the spread of comparable designs among different media could well have been stimulated by designs drawn on

¹⁵¹ Maqrīzī (1853) II, 94–108.

paper that were exchanged among craftsmen. In addition, the interchangeability of patterns might also be linked to the specific layout of the markets and the proximity of craftsmen, and therefore a familiarity with popular designs, within centres such as Cairo and Damascus.

Although the Ottomans continued part of the Mamluk tradition of metal fittings by installing some metalwork medallion doors in their buildings, they chose a new direction. While the Mamluks had placed most emphasis on entrance doors, the Ottomans clearly preferred the development of window grilles. The latter trend is not surprising given that the favoured type of building endowed by the Ottomans in Cairo was the *sabīl-kuttāb*, the façade of which was dominated by at least three large grilles. These grilles consisted of dense floral patterns and gradually attained a baroque-like quality far removed from the more geometric approach developed by the Mamluks. When Mamluk designs did sprout up occasionally, this must be understood as the individual choice of a patron who admired that particular style.

At the end of the 19th and the beginning of the 20th century, an appreciation of the Mamluk heritage, at first stimulated by Europeans with a distinctive love for Arabic art, triggered the revival of former styles of architecture and the arts. The earliest building in the revival Mamluk style was the Jazīra palace in Cairo built for Khedive Ismā'īl. It was begun in 1863 and designed by the Austrian architect Julius Franz. In the same period an awareness of the conservation of the cultural heritage materialises in the foundation of the Comité that became responsible for the preservation of Arabic buildings in Cairo. It is in the context of this Zeitgeist that the revival of doorknockers (especially Mamluk ones) takes place. These were mass produced to meet a growing demand, either by the designers of Mamluk style interiors who combined Mamluk spolia with Mamluk revival artefacts, or on the open market.