

İslam Sanatında Zikzak Deseni ve Anlamları Üzerine Bir Okuma

T. M. P. Duggan *

ÖZET

Bu bildiri “zikzak” motifinin İslami bağlamda kullanıldığında bir seri dini anlam taşıdığını önermektedir. Motif “metin” olarak okunduğunda Arap rakamları olan 7 ve 8'in birleşiminden oluşur. Bu sayılar toplandığında $15=6$ sayısını verir ki Arapça 6 sayısını gösteren şekil aynı zamanda “ve” anlamına gelen “wav” harfinin de şeklidir. “Wav” “ve Allah” olarak okunabileceği gibi, aynı zamanda Kur'an'daki surelerin sayısının da toplamına da işaret eder ($1+1+4=6$). Allah'ın adının rakamsal ve görsel tekrarı olarak kabul edildiğinde zikzak motifi (wav Allah=66) zikir olarak okunabileceği gibi sayısal olarak tekrarı da Kur'an'ı oluşturan harflerin toplamını (6666) betimliyor olabilir. Öte yandan, zikzak motifinin su yüzeyinden ya da aynadan yansıyan ışığa benzerliğinden yola çıkarak ışıkla bağlantısı da kurulabilir, ki motif şamdanlarda sıklıkla kullanılmıştır. Güneş ile Allah'ın ışığı bağlantısından yola çıkarak, motifin nakkaşlar tarafından geçici dünyada Nur'u İllahi'yi sembolize etmek üzere tercih edildiği önerilebilir. Bu okuma ile desenin Kabe Örtüsünde, minarelerde, sancaklarda ve mezar örtüleri gibi dini bağlamlarda kullanılması açıklanabilir.

Anahtar Kelime: zigzag, mukarnas, ışık, meşruluk, Haramayn

On Reading The Meanings Carried By The Zigzag Design In Islamic Art

T. M. P. Duggan *

ABSTRACT

This presentation suggests that this design carried a series of religious meanings when employed within an Islamic context. That the “zigzag” design was “read” in the literal sense, in the combination of the written Arabic numbers 7 and 8 joined together. These, when added together total 15, with these two numbers summed, thereby a repeat design read as representing the repetition of the number 6. The number 6 representing the letter wav meaning “and”, as in “and Allah”; and, as also representing the sum of the total number of Sura in the Holy Quran, $1+1+4=6$. The repeat of the number 6 being read as both representing and repeating the numerical equivalent of the Name Allah, 66, visually read as zikr, wav=6 +Allah (66), as also reminding of the traditional total number of letters forming the Holy Quran, 6,666. Further, there is the association of this design with light, as it has been employed to represent the reflection of sunlight from the surface of water, as also employed to represent the reflection of light from a polished mirror, as also a design on candlesticks, thereby reminding of the relationship between sun and sunlight and The Light of the Almighty, employed by the designers-nakkaş as a sign, to remind in this temporal world of the nur illahi of the Light of the Almighty. Hence the use of this design on the Kaba kiswah, on minarets, as on flags and tombs as on tomb coverings etc.

Keywords: zigzag, muqarnas, Light, legitimacy, Haramayn

* Akdeniz Üniversitesi, Akdeniz Medeniyetleri Araştırma Enstitüsü (Mcrl), Antalya, tmpduggan@yahoo.com

* Akdeniz University, Mediterranean Civilisations Research Institute (MCRI), Antalya, tmpduggan@yahoo.com

A row of triangular shapes, usually without baselines, in a straight line, or in a circle, in which case it can be read as the rays of a sun or a star, the triangles, equilateral or otherwise, can be defined as forming a zigzag pattern in two, or in three dimensions - as with the triangular pendentives below a dome which can perhaps be best understood if looked at in plan or from below, as a zigzag of rays extending down from the circle of the dome, forming a sunburst, as is often likewise the case for muqarnas in dome or portal - forming a course or design marked by sharp turns in alternate directions. Consequently, the design that has been described by art historians as triangles¹, that join at two corners, two other triangles forming a line, or as chevrons², or joined chevrons, or a dentillated border³, from the Lat. dens for a tooth (although dentil today usually refers to a square rather than a pointed tooth), a herringbone pattern⁴ or a serrated⁵ or saw-tooth design (Burgoyne, 1987: 220; McWilliams-Roxburgh, 2007: 50), can all be understood as being forms of the zigzag design and are here understood as such.

For more than a century since Alois Riegl wrote concerning the zigzag design in *Stilfragen: Grundlegungen zu einer Geschichte der Ornamentik*, (Problems of style: foundations for a history of ornament) of 1893, where he related the use of this design to aesthetics rather than to basket-weaving⁶, there has been little attempt to attach any religious and context specific meaning to the zigzag design when employed in Islamic art. But a typology of a form alone, employing a freshly invented terminology, not the term current for the design at the time it was used, although adequate for identifying stylistic change, seems deficient in terms of contextually relevant content and meaning. Today the term “zigzag” is often used without it apparently carrying any meaning at all, no reason is indicated for its use in the places where it is found, the term “zigzag” is just the name of a design that occurs here and there, a named but culturally context-less identifier. Although the zigzag design and its variants such as the knotted zigzag design, have been noted by art historians from the 19th century onwards as found on many works of Islamic art: on textiles, flags and banners, on domes, in mosques, on mihrabs, minaret, manār and column, on turbé and tomb, painted on exterior and interior walls, incised and cast in relief on metal candlesticks, painted on a wide range of ceramics and displayed on other material surfaces from the 1st c. h./7th c. A.D. down to the present day, that is, over the course of more than 1,300 years and the method of production of Islamic designs including the zigzag has been investigated⁷, to-date this noteworthy marker design employed within an Islamic religious-cultural context, has not itself been read as carrying a specific set of contextually related meanings⁸.

¹ As on the Mshattā facade, see below fn. 22.

² E.g. Creswell used the term chevron border, not zigzag border, Creswell 1979, II, 178; likewise M. Ellis, 2001, http://jameel-centre.ashmolean.org/collection/7/1252/1253/all/per_page/100/offset/0/sort_by/seqn./object/10740.

³ In English, indenture from dentil, from 1300, “a deed between two parties torn or cut in a serrated line” and daggers waved, “indenture fashion”, serrated daggers, Shipley 2001, 59. Keser-Kayaalp-Wheatley-Irving 2017, 123, *dentillations*, employed on Tur Abdin churches, for Islamic examples idem. fn. 42; as likewise: “Interior: the rim is painted with a blue dentillated pattern.” <http://webapps.fitzmuseum.cam.ac.uk/explorer/index.php?qu=syria%20fritware&oid=72039>

⁴ E.g. Papadopoulo 1979, 499, describes the pattern carved in relief on the domes of the Sultan Barquq complex in Cairo as a herringbone pattern, rather than a zigzag.

⁵ As recorded by Muhammad ibn Mukarram ibn `Alī ibn Ahmad ibn Manzūr al-Ansārī al-Ifrīqī in his *Lisān al-Arab* of c. 1390 and by Ibn Fīrūzābādī (d. 1415) in his *Qāmūs al-muhīt*, muqarnas is defined, “as a form with stepped or serrated edges, such as fringed leather or a decorative awning.”, see Tabbaa 2008, 105.

⁶ Murray 2003, 212, citing from Riegl 1992.

⁷ For the latest work in this field, building on works such as Critchlow 1976, see, Bonner 2017. Idem, 163, 312, Figs. 181 and, 211 B, for examples in respect to the method of construction employing, and for the use of, the “zigzag-chevron” design in Seljuk 12th and 13th c. Anatolia. See also Özdural 2017 and Özdural 2000 for the working relationship between the geometric-theoretician-muhandis and the practical craftsman-artisan, as also Allen 2004; Saliba 1999.

⁸ For the explicitly religious context in which this design is often found, mentioned with examples, Duggan 2006, 204.

In terms of meaning it has been suggested that this zigzag design signified: “running water”⁹, or “lightning or the waves of the sea”¹⁰, that it was a development from, or a type of the “meander” pattern that has been employed for millennia¹¹ and therefore carried a general meaning amongst peoples, not that in an Islamic context this design carried a cultural-religious specific set of meanings and associations. It has also been noted that it was employed as a marker of 13th c. Rūm Seljuk state buildings (Redford, 1996: 454): “*The zigzag seems to indicate that it served a dynastic or state purpose akin to modern flags; perhaps this design constituted the Rūm Seljuk banner or sanjak*” (Redford, 2005: 293-294), linked with the suggestion that this design was borrowed by the Rūm Seljuks from the Byzantines in the 12th c.¹² However, examples of this design in Islamic art date from long before the 12th - 13th centuries. To date, any suggestion as to a specific set of Islamic meanings conveyed through the use of this design seems unrecorded in the literature.

Concerning the terminology, we know this design, today termed zigzag, employed in Islamic art, was described by an educated Greek at the start of the 13th c. (Walker, 2010: 82) with a word stemming from *odontos*, meaning tooth or, anything sharp or pointed. However, Nicholas Mesarites did not use the contemporary Arabic, Persian or Turkish term(s) for this design, but found a Greek word *ὄδοντουμένη* to describe the Islamic design. Likewise the Franks described this design with the word *chevron*, derived from joined rafters-gables, employed in Middle English from 1150 onwards (Brault, 1997: 142), or *joined chevrons or bars wavy or, bent bars or, in “indenture fashion,”* meaning serrated. Venetia Porter in 2012 in describing this design employed on *kiswa* textiles placed over the Ka’ba in Mecca and over the Prophet’s tomb in Medina used the Old French term *chevron* (Porter, 2012: 72, 73, 77, 78; Figs. 43, 44, 46, 47), rather than zigzag, a word said to be post-medieval in origin (S.O.D.3 s.v. zigzag), to be a word coined in imitation of a visible appearance, or derived from the 17th c. German description of military formations like lines of teeth, preventing the besieged enfiling the attackers approach¹³, *zickzak*¹⁴, or of an unknown etymology (S.O.D.3 s.v. zigzag). The modern Arabic zigzag, the Greek zickzak, as likewise the modern Turkish zickzak, all derived from the French word¹⁵.

The use of the zigzag in Islamic architecture (at Mshattā, as on the dome-bearing arches of the mid-9th century great mosque at Qairawan and in the Nilometer of Rawda of 861, etc.) seems to have passed, perhaps by pilgrims from Jerusalem, as also from Andalusia¹⁶, into the late 11th c. Romanesque architecture of Normandy. Rachel Moss writes concerning the Romanesque chevron ornament,

9 Mahjubah, Vol. 19, 2000, “*The designs have meanings: e.g., the zigzags symbolize water and by extension signify mercy; “the (water) channels are often denoted with a zigzag or herringbone pattern that is intended to look like flowing water.”* Lundbæk-Mortensen 1996, 229.

10 “*The zigzag may represent lightning or the waves of the sea.*” Aziz II, 2004, 682. Sometimes lightning does exhibit a zigzag path and the zigzag design is today related to lightning in the largely Muslim Sulu Archipelago in the Philippines, Fernando-Amilbansa 2005, 26.

11 Vandenbroeck 2016, 133, “*In some cases, the zigzag becomes a meander, similar to its Greek equivalent.*”

12 Redford 2000, 104. Robert Ousterhout wrote in 1987, “*The chevron or zigzag pattern was ubiquitous in Byzantine architectural decoration.*” in reference to the brick decoration of the 11th c. Kariye Church in Constantinople, Ousterhout 1987, 29; 134.

13 The Online Etymology Dictionary records the first use in English of “*zig-zag/zigzag in 1712, from French zigzag (1670s), perhaps from German Zickzack (though this is attested only from 1703), possibly a reduplication of Zacke “tooth, prong.” Earliest use in German is in reference to military siege approaches. Originally in English used to describe the layout of certain garden paths.*” Hence Krabbenhöft 2011, 71, fn. 201. Chamber’s Encyclopaedia, 1963, relates, Vol.12, 118, the earliest known form of the letter, w, may have originated from a zigzag representing teeth. Previously in English the term joined chevrons was used and in some later examples, from 1663 onwards (S.O.D.3 s.v. dentillated), dentillated replacing indented.

14 Fowler 1857, 253. He relates it to the play of vowels in Teutonic word formation in reduplication, in respect to motion, as in see-saw, from, to saw, but offers no meaning of, to zag, suggesting it is a word coined in imitation of a visible appearance.

15 The TDK Türkçe de Batı Kökenli Kelimeler Sözlüğü records the word “*zickzak*” as derived from the French.

16 As in the mosque extension of al-Hakim II at Córdoba in the 960’s with its zigzags with leaves; as also a line of double zigzags painted on a mihrab in an Andalusian ribāt of 944 (Guardamar, Valencia), Ruiz 2004, 279, etc

of “Islamic forms possibly being transmitted to Romanesque England through Islamic Spain.”¹⁷, and George Zarnecki stated the zigzag-chevron design was “adopted from Islamic art.” (Zarnecki, 1992: 27). So there would have been an 11th c. and earlier Arabic word for this design, a word replaced by the Old French word chevron in the Latin West. A design with a different name in the Islamic world a millennium before the word zigzag was coined in the 17th c. and this word may have been quite unrelated to the word tooth in Arabic *سِن* *sinn*, hence, *laho ‘asnān misl al minshār*= serrated. It was perhaps associated in some way from the Ar. *zāwiyat hāddah*, meaning acute angle, but would have been understood to convey some rather more substantive meaning in the Islamic world than simply describing a row of acute angles, given the significance of the places where this design was employed from the 1st/7th - 8th c. onwards; a design that conveyed quite different sets of associations from lines of German, French, Turkish or Greek teeth, or Ar. *zāwiyat hāddah*= acute angle, *zaqzāq-saqsaq* (Cannon-Kaye, 1994: 337), or the black V shaped design on the wings of the Egyptian Plover, *al zaqzaq al misri*; or of lines of Norman French gables.¹⁸ The Arabic word naming this design was presumably identified as such through its etymology, providing a context of associations and it seems possible that it may have been related in some way to the Ar. root *qrns*, as is also suggested for *muqarnas* (Tabbaa 2008: 105; fn. 17). Yasser Tabbaa relates *qurnisat* was used to describe the design in gold and lapis lazuli applied to a dome, recorded in an 11th c. Andalusian text, a design perhaps consisting of vertical or horizontal “zigzags” in two, rather than in three dimensions. It is also of note that *saqsaq* is recorded in 19th c. Egyptian Arabic as meaning, to shine, beam (of light) (s.v. “saqsaq” Spiro, 1895).

In traditional Islamic art the physical form of the work is often dressed, inside and out, like the *kiswa* over the Ka’ba, clothed¹⁹ in meaningful design, and the appearance of the dress of a building, structure or object within this religious-cultural context was most carefully composed, designed to be read and remembered for its citations; to be read like diplomatic correspondence compiled from books of protocol, of citations Qur’anic and Prophetic, for the titlature and for the designs employed on any particular example. Each element mattered for the comprehension of the meaning that was to be communicated, the materials and their quality, the designs and the texts and scripts employed; their relative size, visibility-legibility and position. These elements combined to form the visual appearance, with all the implicit and explicit references on a completed, that is, a completely dressed, a “veiled” structure or object, where the raw material - the temporal element was covered in meaningful design - as the *kiswa* is lowered over the bare stones of the Ka’ba; as likewise was the case in the production of a robe of honour, for an example of diplomatic correspondence, or in a presentation literary text, a *dīwān*, with its biographical introduction termed *dībāja*, literally, a silk embroidery or an ornament.

In the hierarchy of designs employed on an Islamic building, structure or object, this marker ‘zigzag’ design was most often employed in elevated positions on facade and portal, in the semi-domes of mihrab niches, on the exterior and interior of domes, on minarets, *manār*, columns and colonettes. It was also employed in *ablaq* work on the floors of mosques and mausoleums and in carpets and kilims. It marked particular places of pilgrimage, prayer and remembrance.

¹⁷ Moss 2009, 8. Decoration in zigzag bands is very characteristic of the Thagr architecture in Aragon. Perhaps the decline in the use of chevron ornament after 1240 in Europe would suggest its close association in Latin Catholic art with Jerusalem, although a structure at Jerusalem which exhibited this design in the 11th c. does not survive today, there seems to have been an Abbasid portal with a zigzag to the al-Aqsa Mosque in the 11th c., reflected in the Church of Le West in Bou-lonnias, see: Nicholas & Yeager 2012, 118. Further there is the possibility that the dome of the Dome of the Rock collapsed in 1016 and was rebuilt in 1022–23 and the dome of the al-Aqsa mosque, carried a carved zigzag pattern or were draped in a zigzag *kiswa* in the 11th c. seen by Norman pilgrims, who associated this design with the city? The zigzag on the main arch of the porch of the Al-Aqsa mosque is of 1217-1218. For further on the Norman use of the zigzag, Allen 1986, 75–82.

¹⁸ Zigzag No. 1350, Issa 1994, where the term is listed as the Arabic word derived from the European. No Arabic synonym is given.

¹⁹ *Kiswa*, literally meaning clothing, hence a structure is clothed or dressed and *kisa’*, honorary garments.

The most particular importance in religious terms of the locations where structures carrying examples of this design, those places where contrasting bands of zigzags are found, seems to stem from its use in early copies of the Qur'an and on the Ka'ba kiswa. The "zigzag" is a design that has been employed from the earliest days of Islamic art, in the strict sense of the word, as in some early copies of the Holy Qur'an dating from the 1st c. A.H./mid-7th c. A.D., onwards, there is, at times, a band of horizontal zigzag markers between sūrat, e.g. the three red zigzag lines across the parchment between sūrat Miriam and Tā'Hā in hijāzī script, in the "Birmingham Qur'an" fragment, c. 645 A.D.; in the Umayyad Damascus Codex TĪEM SE 321, of a band of three horizontal zigzags, green, red, green between sūrat al Rūm and sūrat Luqman, and a single gilt zigzag line at the end of sūrat al-Jathiyah (Déroche, 2013: 87); with several Umayyad examples from the Fustāt Codex with zigzag borders to sūrat headings in the National Library of Russia at Saint Petersburg; and a folio from Tyre dating from the 9th-10th c. A.D., today in Paris²⁰; and a gold knotted zigzag with stylised leaves follows the sūrat al-fātihah on a 9th A.D. Qur'an folio²¹. The palace facade at Mshattā carries a very prominent carved zigzag relief²², raised nearly two meters above ground level, of the same type as the border around the title of sūrat 14, İbrahim, in a 9th c. copy of the Qur'an (Marcel 128, fol. 2v.), a zigzag design with suns-rosettes-roundels. Much of the upper area of the carved design above the line of the zigzag on the Mshattā facade remained incomplete but, if completed, we would have today a rather different perception of this facade design, as perhaps representing a textile with a zigzag band and sun-like 'rosettes', to speculate, quite possibly representing a type of kiswa cover or hazim of c. 744 A.D., a textile design reworked in stone, dressing the facade. At Walid Ibn Yazid's Qusayr 'Amra completed before 743, in the hot room-caldarium, the transition from the interior dome, the cornice forming the border between worlds, as in the dome there is the painting of a cosmological scene, is marked by a band of zigzags (Creswell 1959, II, 170-172; Allen 1986, 76; Ettinghausen-Graber, 1994, Fig. 34).

By the mid-1st/8th c. A.D. it can be suggested the "zigzag" design had obtained a set of meanings and associations pertaining to and particular to Islam and was a design type already recognised as being an important distinguishing marker, a design intermediary employed at times around the sacred text, a design probably on and of the kiswa of the Ka'ba, a design on a palace facade. The "zigzag" design on the kiswa (Fig. 1) and sitarah of the Ka'ba in Mecca, from surviving textile examples and fragments, has been repeatedly employed since the 15th c., and, if the suggestion concerning the Mshattā facade is acceptable, it was a design on the kiswa of the Ka'ba in the I./8thc., if not earlier. In respect to the zigzag form, it can be noted that the Ka'ba kiswa consisting of textile pieces joined together, itself took on the form of a zigzag below the hazim when it first covered only the upper part of the Ka'ba in the period of *Uryanah* (naked) at the hajj, with, as Richard Burton remarked from observation in 1853, two tongues (two zigzags) extending down to a point on each face below the hazim, (Fig. 2) the remainder being wrapped around the suspension ropes tied to brazen rings.²³ This state was earlier recorded in an 1803 engraving by Carl Ponheimer of a bird's-eye view of Mecca.²⁴

²⁰ Bib. Nat. de France, Paris (Arabe 346), folio 13, Tyre. It resembles in its zigzag, St. Petersburg, Marcel 128, fol. 2v.

²¹ No. W.554 Walters collection, Baltimore, USA http://www.thedigitalwalters.org/Data/WaltersManuscripts/W554/data/W.554/sap/W554_000008_sap.jpg

²² Often perhaps somewhat unfortunately described as triangles, eg. Ettinghausen-Graber, 1994, 68: "on certain triangles", "On Mshatta triangles", caption to Figs. 45 and 46, "carved stone triangles" rather than a 'zigzag'.

²³ "The Ka'bah had been dressed in her new attire when we entered. The covering, however, instead of being secured at the bottom to the metal rings in the basement, was tucked up by ropes from the roof, and depended over each face in two long tongues." Burton 1893, 211-212, and illustrated somewhat inaccurately, idem 212 (see Fig. 2 below). As also on another view, entitled "Temple de la Mecque" (Mecca), a steel engraving published in 1847 in a volume of *L'Univers*, in Paris.

²⁴ <http://www.sothebys.com/en/auctions/ecatalogue/2012/travel-atlases-natural-history-112401/lot.155.html> <http://www.bhmf.org.uk/how-the-british-museum-brought-the-hajj-to-my-mum>

While the un-dressed state of the Ka'ba, but with more than two "tongues"-zigzags on each face, is likewise recorded in western engravings²⁵, and presumably, given the longstanding opposition to innovation-*bidat*, this way of redressing the Ka'ba may date from the earliest dressing of the Ka'ba in a *kiswa*. In consequence, even when the design on the *kiswa* itself did not carry zigzags, the zigzag form was still associated with the Ka'ba at the time of the hajj. At the time of John Lewis Burckhardt's visit in 1814, the period when it was dressed in this fashion extended over 15 days (Burton, 1893: 212).

The suggested association of the zigzag design with the Ka'ba from the first century of Islam onwards has been made for the above reasons; as also from the evidence provided by surviving examples of the use of this zigzag design on minaret, mosque and mihrab, dome, flag, city, palace and fortress wall etc. dating from well before the 14th c. Richard Burton in his *Personal Narrative of a Pilgrimage to Mecca and Medina* records the line by the poet Abd al-Rahim al-Bura'i²⁶ : "And Meccah's bride (the Kaabah) appeareth decked with (miraculous) signs." (Burton, 1893: 212), and it maybe the miraculous signs of the dressed or decked Ka'ba that are referred to were the "zigzag" designs on the *kiswa* rippling in the breeze from angels' wings. It was also the design employed on the *kiswat as-Sa'âda*²⁷, with surviving 14th c. examples (Kurtuluş 2017, Foto 4 (TSM 24/895), on the *shabaka as-Sa'âda*, as also on the *kiswat al-Sharifa*, the textile covering that was formerly secured over the *qubbat an-nūr*, the Dome of Light; as also in a band around the Raisiyah Mamlûke minaret of Al-Masjid an-Nabawî at *al-Madînatu 'l-Munawwarah*, Medina the illuminated, from the 15th c. onwards and was probably therefore, a design also employed on the earlier *manâr-minaret*²⁸. As also, for example in the Mamlûke marble floor of the Qubbat as-Silsila at al-Quds and as a design used in the textile covers - *pûşîde* over the tomb of Prophets and Shaykh, and in a band around the 16th c. minaret of the Shaykh al-Akbar, Ibn Arabi's mosque-turbé at Damascus.

The late 11th-12th c. Kalat El-Koubba in the medina of Sousse, Tunisia, has a vertical zigzag ribbed dome, while the Almoravid Qubbat al-Barudiyyin at Marrakech of A.H. 511/1117 A.D., has horizontal zigzags carved on the upper part of its dome around a 7 pointed sun-zigzag, and Yasser Tabbaa has suggested this Qubbat is based in part on the design of the domes erected by the Abbasids around the Haram at Mecca for commemorative purposes in the early 10th c. (Tabbaa, 2008: 144). Or perhaps the designs on these later domes was influenced by the designs on the *kiswa* over these 10th c. domes²⁹ : the Qubba above the Zamzam spring, the Qubba al-Abbasiya, the Qubba al-Yahudiyya and the Qubba at the Bab Ibrahim; or that these zigzag designs reflected the designs employed on the *qubbat an-nūr* of the Masjid al-Nabawi at Madina, or its *kiswa* textile covering, a

²⁵ https://etc.usf.edu/clipart/80000/80002/80002_kaaba.htm A print that was cut down and reworked and entitled, *The Kaaba or "Kissing Stone" Enclosure at Mecca*, published in Brown 1876, 64. As also entitled "*Temple de la Mecque*" (Mecca) steel engraved antique print with recent hand colouring, published in a volume of L'Univers, Paris, in 1847. Another 19th c. engraving at: <http://www.alamy.com/stock-photo-geography-travel-arabia-mecca-kaaba-pilgrim-centre-of-muslims-exterior-19377745.html>

²⁶ Presumably citing from the 11th c. Diwan al-Bura'i, of Abdar-Rahîm b. Ahmad b. 'Ali al-Bura'i al-Mahâgîrî (d. c. 1058). A copy is recorded, Cat. of Arabic Mss. No. 276, Biblioteca Ambrosiana <http://www.islamicmanuscripts.info/reference/catalogues/Loefgren-1975-Traini/Loefgren-1981-Traini-Cat-Milano-2-134-189.pdf>. Or possibly citing from Abd al-Rahim ibn Ahmad al-Bura'i (d.803/1400), Diwan al-Bura'i, republished, Dar Al Marefah, 2007, if these are not one and the same work and person.

²⁷ As in the depiction of the sanctuary at Medina in the late 17th-18th c. Mss. of al-Jazuli's *Dala'il al-Khayrat*, "the domed tomb of the Prophet with its covering of chevron patterned textiles", zigzags in green, black and yellow, see Porter 2012, 78, Fig. 47.

²⁸ The use of red for the zigzag may possibly reference the descendants of Mudhar the Red, including the Prophet of Islam. In the 992 Night of the 1001 Nights, the Caliph al Mamun said, "My line is the line of the Red Mudaris (Mudharides)." *The maiden knew that this qualification of colour came from the red leather tent which Mudhar, the father of those tribes which bear his name, had used in the desert;*" Madrus 1996, Vol. IV, 503.

²⁹ The covering of a dome in textile is mentioned in the 10th c. Tales of the Marvellous and News of the Strange, in, *The Story of the Third Quest, for the Crown*, supposedly set in the reign of the Omayyad Caliph 'Abd al-Malik, "and they decorated the dome (in the palace orchard-garden) beautifully... and we went to the dome in the orchard, which was draped with coverings of brocade..." Lyons 2015, 92, perhaps reminding of the Prophet's garden and *qubbat an-nūr* - Dome of Light at Medina, draped with coverings of brocade, a *kiswa*.

dome over the grave of the Prophet or over the dome reputedly first constructed by the Umayyad Caliph al-Walid I. in 707-9 in the mosque as recorded in Ibn 'Abd Rabbih's *al-Iqd* (Khoury, 1996: 89-91).

It was a design employed on some minarets from the 11th c. onwards, not only in their form in cross-section, as with the 8 zigzag flutes of the shaft of the minaret of the Ghaznavid sultan Mas'ud III (1099-1115) at Ghazni, but explicitly, in horizontal or vertical bands on the shaft³⁰, and also within rectangular panels in Maghrib and Andalusia examples³¹; as repeatedly in the semi-dome of mihrab niches, in muqarnas and on the facets of muqarnas and on the exterior and interior of domes, as also carved on columns and colonettes and is a design found over the entrance to mosques and turbé, as on a wide variety of textiles³² and ceramics.

It may be understood that this design was employed elsewhere in significant and elevated locations for the obvious reason: its importance as a noteworthy visual marker, associating the use of this design with its display in the Noble Sanctuaries. It was a religious statement and a reminder of meaning through this association, as, "*Whoso honours that which is declared sacred by Allah may be sure that it counts for good with his Lord*"³³. Firstly then, meaning was given to this design through its use on early Qur'an folios and through association with the zigzag design prominently displayed on and in the form of the *kiswa* in the *haramayn* from as early as the 8th c. A.D., if not earlier. The use of this zigzag design elsewhere, was therefore, in part, due to the attention and respect generated by its repeated use at the Noble Sanctuaries, suggesting it was elsewhere employed to express legitimacy through its association with the *haramayn*.

As a marker of the Light of the Almighty

There is also the association that can be made of this zigzag design with the depiction of the flash/rays of sun-light, as the zigzag is a design repeated in the outline of the circle of rays around the depiction of the face of the sun, as also in the shape of the "belt of triangles", Turkish triangles-pendentives below domes, as also in many *muqarnas* designs in domes and semi-domes, the zigzags-rays suggesting the out pouring and down-pouring of rays of sacred Light. The connection in the use of this zigzag design on the shaft and *petek* of minarets with the Light of the Almighty, through this analogy between the sun and rays of sunlight and the Almighty and the Light of the Almighty was in the past more explicit than it is today, as many of these minarets were formerly crowned with a tiled dome that reflected the sunlight³⁴. The zigzag design is found on

³⁰ E.g. on the 11th c. minaret of Arslan Jadhib, governor of Tus (1025–6) for the Ghaznavid Sultan Mahmud, Sangbast (Khusasan, Iran), a horizontal zigzag band with «roundels»; horizontal zigzags on the Great Seljuk Minaret, Firuzabad, Iran, 1040; two bands of horizontal zigzags on the 1107 Natanz minaret, Iran; horizontal zigzags on the Great Seljuk minaret, Termez, Uzbekistan, 1109; Kalyan minaret 1127, Bukhara, Uzbekistan, zigzag bands below the *şerefe*; horizontal zigzag bands below *şerefe* on minaret-kharanagh, Yazd, Iran 12th c.; vertical zigzags on the lower shaft of the Kizil Minare, 1221-37, Aksaray, and horizontal zigzags in the upper section of the brick shaft below the *şerefe* of the Cacabey medrese minaret, 1272, Kirşehir, Turkey; in vertical zigzags below the *şerefe* on the minaret of the al-Qadi al-Mehmendar Mosque, 13th c. Halep, Syria, etc.

³¹ Two rectangular panels of horizontal zigzags below the Almoravid *şerefe* of today's bell tower to Nuestra Señora del Castillo, Aniñón by Zaragoza (Comunidad de Calatayud), 12th c.; Rectangular tiled zigzag panels below the *şerefe* on the Almohad Kasbah-Mosque minaret, Tunis, 1230.

³² It was repeatedly employed on textiles of this period as the textile finds from Fustat make clear, both woven/embroidered locally and on block print textiles imported from Gujarat, for examples: http://jameelcentre.ashmolean.org/collection/7/1252/1253/all/sort_by/seqn

³³ Nawawi 1989, 57.

³⁴ On the minaret, as the support for light and as a marker of The Light, Duggan 2013, 362-365.

candlesticks, including some Seljuk (Fig. 3)³⁵, Mamlūke and Safavid examples³⁶, often around the shaft or on the rim, a design that can be understood to have been employed to remind of the Divine Light, through the analogy drawn between sun and its light - and the Almighty and The Light of the Almighty³⁷. It was perhaps the reason for the use of this zigzag design in early Qur'an folios as are noted above. This association of the zigzag design with light was made explicit in the 12th and 13th centuries, recorded in the blue and white zigzags depicting the reflection of sunlight from the surface of water³⁸, as also employed to represent the reflection of sunlight from the surface of circular mirrors depicted on some Seljuk *haft rangi/mina'i* painted ceramics³⁹ (Fig. 4). A vertical zigzag design in blue and white also appears as the design on a glass mosque lamp depicted in under-glaze on a late 12th-13th c. Iran, frit-ware tile⁴⁰, thereby, it is suggested, indicating this design was employed because zigzags were understood to indicate-represent light (Fig. 5). It is a design found in depictions of the Archangels, themselves made of light⁴¹, as in numerous miniatures depicting Archangels illustrating Abu Yahya Zakariya' ibn Muhammad al-Qazwini's, *'Ajā'ib al-makhlūqāt wa gharā'ib al-mawjūdāt*, produced from the 13th into the 18th c. in Iran, Egypt and India (Fig. 6). It is also a design frequently carved in waterslides-cascades, in the floor of water channels, as on fountains, not only to generate sound, but to cause the flashes of reflected light from the motion of the water flowing over this design when carved in relief. It seems the zigzag design was deliberately employed by designers-*nakkaş* as a noteworthy marker, to remind in this temporal world of the illuminated, of the light of the enlightened, of the Light of the Almighty/*nūr-i ilāhi*.

This association of the zigzag design with the *nūr-i ilāhi* has at times been made explicit, not only on the *kiswa* coverings carrying this zigzag design with the Name Allah embroidered within it, but also, for example, by Mamlūke designers: through the red, white and black zigzags that flow out from the Name Allah carved in the semi-dome of the mihrab of the Sultan Hassan mausoleum completed in 1362; as by the red, white and black zigzags that flow out from the Name Allah carved in the semi-dome of the mihrab in the Khanqah of the al-Ashraf Barsbay complex of 1432-3 (Fig. 7), and by the black and white zigzags that flow out from the Name Allah carved in the semi-dome of the mihrab of the mosque-madrasa complex of Sultan Qansuh al-Ghuri of 1503-04 (Fig. 8). While the zigzag as the representation of the Divine Light was implicit, for example, in the band of horizontal zigzags in red across the folio dividing surat in the Birmingham Qur'an

³⁵ A brass candlestick, with zigzags indicating light and lions' heads, Khurasan, circa 1200, 40.6cm. by 43.7cm. max. diam. Sotheby's, London, Arts of the Islamic World, 18 April, 2007, Lot No. 96; 1200-1250, brass candlestick base; hammered, turned, engraved, incised, inlaid with silver and copper, with winged dragons within the zigzags indicating the Light, Metropolitan Museum of Art, N. York, Acc. No. 91.1.561 <https://www.metmuseum.org/art/collection/search/444561?sortBy=Relevance&ft=candlestick+base&offset=0&pp=50&pos=4>

³⁶ E.g. A Mamlūke silver and gold-inlaid candlestick base in the name of Sultan Shihab al-Dunya al-Dīn Ahmad bin al-Malik al-Nasir Muhammad, Egypt, of 1342 has a band of doubled zigzags on the moulding above the base at: Christie's, London, 5th October 2010, Sale 7871, Lot 27. <http://www.christies.com/lotfinder/furniture-lighting/a-fine-mamluk-silver-and-gold-inlaid-candlestick-5358623-details.aspx> Metropolitan Museum of Art, N. York, Rogers Fund, 1929 (29.53); Christie's Sale 6713 — Islamic Art and Manuscripts, 29th April, 2003 <http://www.christies.com/lotfinder/lot/a-safavid-engraved-brass-torch-stand-iran-4083165-details.aspx?intObjectID=4083165>

³⁷ See on this same matter, but in respect to the sun rather than the zigzag, Melikian-Chirvani 1994, 146-155.

³⁸ Examples of the zigzag design painted in blue and white to represent the reflection from the surface of a mirror include a *mina'i*-ware bowl, Iran c. 1200. Museum für Islamische Kunst, Berlin, (Forkl-Kalter-Leisten-Pavaloi 1993, Abb.72); Iran, 12th-13th c. *mina'i* painted frit-ware bowl, offered for sale at icollector.Com, withdrawn from sale 07-2002, where the two circular mirrors are within red circular pivot rings; the same pattern is on the upper winged mirror depicted on the *mina'i* painted bowl, Freer-Sackler FS-8346_04 Smithsonian Inst.; on a Kashan, Iran circa 1175 - circa 1220, *mina'i* frit-ware under-glaze bowl with applied gold over glaze. No. OC.158-1946, The Fitzwilliam Museum, University of Cambridge, where there are six circular mirrors carrying this design in an inscription band below the rim.

³⁹ Examples of the zigzag design painted in blue and white to represent the reflection from the surface of water include a *mina'i*-ware bowl, Iran c. 1200. Museum für Islamische Kunst, Berlin, (Forkl-Kalter-Leisten-Pavaloi 1993, Abb.72); Smithsonian Inst., Freer-Sackler No. F1909.75; as on another late 12th/early13th c. *mina'i* painted frit-ware bowl with a rider on horseback and attendants, <http://www.sothebys.com/en/auctions/ecatalogue/2013/arts-of-the-islamic-world-113220/lot.173.esthl.html#>

⁴⁰ Today, Met. Mus., New York, Acc. No. 20.120.106.

⁴¹ A hadith related by Aisha in Muslim, "The angels were created from light." *The light understood to mean they were created from the Light of the Almighty, from the nūr-i ilāhi.*

fragment, as by the band of red and white zigzags on the Raisiyah Minaret by Al-Masjid an-Nabawī at Medina the illuminated - in these examples this relationship between the Name Allah and the zigzag representing light extending out from it in three dimensions, is made visually explicit. This design can perhaps further be understood to represent and remind of the on-going course of creation in the world sustained by the Almighty, as articulated in Ash'arī occasionalism, as already noted by Yasser Tabbaa in respect to muqarnas (Tabbaa, 2002: 132-133), through this representation of the Divine Light as zigzags, as with these zigzags in mihrabs, in muqarnas and those zigzags cut in stone to form the often polychrome joggled voussoirs in the lintels over doorways.

It seems possible within an Islamic context to suggest a further meaning that can be read from the zigzag design, that it may be understood to be the reminder of the Almighty, of the Lord of the Two Points⁴², *Zū-l-Faqār*, following the interpretation of *faqār* as an unfamiliar plural of *fuqrah* - "notch, groove, indentation", in reference to a kind of decoration of regularly spaced notches or dents-teeth on the sword, and/or in reference to the "notch" formed by the sword of Ali ending in two points, forming a "chevron", *Dū-l-fiqār*, a corruption of *firāq* meaning "distinction, division", originally derived from the metaphorical sword of discernment distinguishing right from wrong, in terms of discrimination-separation (on this, Pendergrass 2015, 79-81), with its points resembling the basic form of a zigzag.

Marker of Partnership with the Caliph

It can be suggested from a Rūm Seljuk 13th c. under-glaze painted turquoise cross tile by 1236 from the Kubadabad Palace by Lake Beyşehir, Turkey, that has this zigzag design repeated within a square at the centre (Fig. 9), like the *kiswa* with zigzags over the Ka'ba, and with one of the Names of Allah, *al-Galib*, The Victorious, on each of the four arms (Arık-Arık, 2008: Fig. 312), that the zigzag design was understood to stand for, to be read as indicating both the Ka'ba and the Divine Name, Allah, as the zigzag bands on the *kiswa* over the Ka'ba carry both explicitly, and implicitly through reading the design, the Name Allah, being the source of both the Divine Radiance and of Victory. The use of this "zigzag" design increased at this time in Seljuk territory, as from 1228/9 the Seljuk Sultan Alaeddin Keykubat had obtained the highest *laqab*-title from the Abbasid Caliph, Abū Ja'far al-Mustansir (1226-1242), of *qasīm amīr al-mu'minīn*-Associate/Partner of the Caliph and was thereby associated with both the Caliph and the *haramayn*. This *laqab* was also used by Sultan Ghiyath al-Dīn Keyhusrev II and by Sultan Rukn al-Dīn Qilij Arslan IV (r.1248-1264) in his first reign. The *laqab*, *qasīm amīr al-mu'minīn*-Associate/Partner of the Caliph was a title that was primarily awarded to Turkish rulers by Abbasid Caliphs, a title previously given to Great Seljuk Sultans including, Toghril in 1058, Malikshah and Muhammad Tapar (1105-18), probably to the Ghaznavid Masud III b. Ibrahim (1099-1115), as later to Ghiyath al-Dīn 'Iwad of Bengal at the start of the 13th c. and to the Delhi Sultan Iltutmish (1211-36). It was later given by Abu'l Qasim al-Mustansir, the new Abbasid Caliph in Cairo, to Sultan Baybars from 1261, and was employed by other Mamlūke Sultans: Qalāwūn, Baraka Qān, Salāmish, Qalā'ūn, al-Ashraf Khalil, Kitbughā and by Baybars II. It seems most probable therefore that the widespread use of this "zigzag" design from the 11th c. onwards, in Ghaznavid, Great Seljuk, Rūm Seljuk and Mamlūke territories was, at least in part, for this reason, to visually clearly express a Turkish Sultan's partnership with the Abbasid Caliph and

⁴² As in, "And to Allah belongs the east and the west." Surat Al-Baqarah 2:115, as likewise, "To Allah belongs the east and the west." Surat Al-Baqarah 2:142; "[He is] Lord of the two sunrises and Lord of the two sunsets." Surat Ar-Rahmān 55:17; "To Him belongs what is before us and what is behind us," Surat Maryam 19:64; "the two ends of the day" Surat Hūd 11: 114 and, likewise, Surat Jāhā 20:130; "made the night and day two signs" Surat Al-'Isrā' 17:12; "Lord of the east and the west and that between them," Surat Ash-Shu'arā' 26:28; "(He is) the Lord of the two easts (places of sunrise during early summer and early winter) and the Lord of the two wests (places of sunset during early summer and early winter)." Surat Ar-Rahmān 55:17; "[He is] the Lord of the East and the West; there is no deity except Him," Surat Al-Muzzammil 73:9

association with the *haramayn*, this design being employed therefore as a marker of legitimacy. In this context one can suggest for example the use on the north façade of the reconstructed May-yāfāriqīn Mosque (Silvan Ulu Cami) completed in 1157, of polygonal colonettes with carved zigzags, was to publicly signal the legitimacy finally conferred by the Caliph al-Muqtafī upon the Artuqid Najm al-Dīn Timurtash in 1152 (Keser-Kayaalp-Wheatley-Irving, 2017: 127).

On Mamlūke domes there is frequently a band of carved rings at the base of this zigzag design, quite clearly indicating that, like the brazen copper rings holding the *kiswa* of the Ka'ba to the ground⁴³, this zigzag design was to be “read” as being draped over the form of these domes, thereby dressing the dome in a stone carved *kiswa*, with these carved loops around the base of the dome, like the copper loops that secured the covering, the *kiswat al-Sharifa* over the *qubbat an-nūr* of the Masjid al-Nabawi at Medina, as likewise secured the *kiswa* over the Ka'ba in Mecca (Fig. 10). Consequently, domes carrying this zigzag design⁴⁴ can be read as a visual reminder and expression of the Mamlūke Sultan's title from 1263 of *Khādīm al-Haramayn al-Sharīfayn*⁴⁵, as also, reflected in the use by Sultan Malik al-Zahir Baybars from 1261 onwards, and by subsequent Mamlūke Sultans of the *laqab, qasīm amīr al-mu'minīn*-Associate/Equal Partner of the Caliph. Selin Ipek records, “A 15th - century Mamluk fabric in the Topkapı (24/1745) shows that this characteristic zig-zag pattern was an established woven textile design prior to the Ottoman period.” (Ipek, 2011: 60. See also Ipek, 2006: 289-316), and in terms of the use by the Mamlūkes of this zigzag design, it can be regarded in part as a legitimizing design reflecting the acknowledged Mamlūke position as *Khādīm al-Haramayn al-Sharīfayn and qasīm amīr al-mu'minīn*.

The increase from 1382 in the use by the Burji Mamlūke Sultans of this design, on domes, as well as on minarets and in mihrabs, was surely in part, for legitimizing purposes, in emphasising their association with the Noble Sanctuaries and the Caliph; this was in contrast to the emphasis on the ghazi-jihad legitimisation of Ottoman rule, which was emphasised in Sultan Barquq's message to Murad Han Gazi in 1386, as recorded by Neşri, “the jihad of the Ottomans was the defining characteristic of this fledgling power's identity in the diplomatic arena” (Muslu 2017, 76). It seems evident that the Mamlūke emphasis on this zigzag design in their art, from textiles to architecture, and on recording this and other *kiswa* designs “tied” to their domes through the depiction of the ring of loops, was a consequence of Mamlūke responsibilities in respect to these titles. Sultan al-Mansur Qalawun rebuilt the *qubbat an-nūr* of the Masjid al-Nabawi in A.H. 678/1279-80, and the design on it or on the *kiswa* draped over it was almost certainly a zigzag; as also subsequently in the work carried out by Sultan Ashraf Sayf al-Din Qa'itbay, 1468–1496, responsible for rebuilding work at the Ka'ba in Mecca, at the *Haram al-Sharīf* in Jerusalem and the rebuilding of the *qubbat an-nūr* of the Masjid al-Nabawi and the adjacent Raisiyah minaret from 1481-1483, and of the designs employed on the domes and the *kiswa* dressing these renovated structures, designs which for obvious reasons were echoed in subsequent Mamlūke arts and architecture, on domes and

⁴³ For examples in the Makkah Museum see:

<http://www.mamissionblackburn.co.uk/makkahmuseumpagetwo.html>; for the copper rings in the 18th and 19th c., see, Crichton, 1852, 517; Burton 1893, 211-212. These *kiswa* attachment rings carved on Mamlūke domes have been described as “carved loops” Behrens-Abouseif 1989, 143, or termed by Bernard O'Kane a “*mim*” as its form resembles the letter, Bernard O'Kane, The Design of Cairo's Masonry Domes, p. 5, fn. 12 at: http://www.sas.upenn.edu/ancient/masons/OKane_Domes.pdf

⁴⁴ On the exterior of the domes over the khanqah and the mausoleum of Sultan al-Zahir, Faraj ibn Barquq of 1384-86, and in this case there is also a ring of zigzags on the interior of both of these domes. It is also the design on the dome of Mahmud al-Kurdi (1394–95), on the dome of the mosque of Sultan al Mu'ayyad of 1415-20, on the dome over the madrasa of Emir Ganibak 1426-27 and on the dome over the tomb of the Emir Nasrallah of 1441, as on the dome over the Mausoleum of Barsbay al-Bajasi of 1456. In the 16th c., over the dome of the Mausoleum of Emir Tarabay al-Sharifi, over the dome of the Mausoleum of Emir Mahmud Janum, and is the main design on the dome of the Qurqumas complex of 1506-7, all in Cairo.

⁴⁵ In 1263 Baybars sent the *kiswa*, replacing the Rasūlid Yemeni *kiswa* and he adopted title of *Khādīm al-Haramayn al-Sharīfayn*, Servitor of the Two August Sanctuaries, but the Rasūlid ruler of Yemen may have dressed the interior of the Ka'ba until A.H. 761-1360, Steenbergen 2016, 99.

minarets⁴⁶ and mihrabs⁴⁷ and niches in Cairo, and elsewhere in Mamlûke territory. further point, concerning the expression of legitimacy made through the use of this design, is recorded in the horizontal and vertical bands of zigzag blue, green and red coloured tiles on the minaret of the 1391 Ottoman Yeşil Mosque, İznik, horizontal in a band on the shaft and vertical bands of zigzag blue, green and red coloured tiles on the minaret of the 1391 Ottoman Yeşil Mosque, İznik, horizontal in a band on the shaft and vertical above the *şerefe*, which may, in the context of Beyazıt I reportedly putting on the robe of honour of the Mamlûke Sultan Sayf al-Dîn Barqûq in 1392 (Muslu, 2014: 78-9), be “read” as a noteworthy visual expression at this time of Ottoman allegiance to the *Khâdim al-Haramayn al-Sharifayn*, to the Mamlûke Sultanate, and the Ottoman acceptance of Mamlûke suzerainty, within the context of the increasing threat presented to both rulers by Timur. The horizontal zigzag on the shaft and vertical above the *şerefe* of the minaret of the Yeşil Mosque, reverses the order of the zigzag designs carved in stone on the minaret of the early 14th c. Al-Nasir Muhammad citadel mosque in Cairo. In the same decade, the Ottoman Firuz Ağa Mosque in Milas of 1394 has a powerful zigzag relief carved on the central arch of the portico, reminding of that earlier carved over the N.W. archway into the mosque of Sultan Baybars in Cairo of 1269. It is also noteworthy that the zigzag design was worn by members of the Ottoman state from the 16th c. into the 19th c., including by *yenîçeri*, from 1517 onwards when the Ottoman sultan had the title *Hâdim’ul-Hameyn’uş-Şerifeyn*. The miniatures painted by A.H. 944/1537 contained in the *Beyan-ı Menazil-i Sefer-i Irakeyn-i Sultan Süleyman Han*⁴⁸, by Matrakçı Nasuh, depict at the shrine of Ali bin Abu Talib at Najaf what is described as “an unusual column” (Atasoy, 2015: 132), which, rather than a column is probably to be understood as a minaret-like, *manâr* marker structure, then situated inside the compound wall, to the left of the entrance into the outer courtyard. This *manâr* is covered in a pattern of blue, black and white zigzag bands, or in black and white zigzags (Atasoy, 2015: 58A, 64B), and it seems to have been tall, standing well above the height of the compound

⁴⁶ Both vertical and horizontal zigzag designs are on the early 14th c. minaret of the Al-Nasir Muhammad Citadel Mosque and the use of the zigzags on this minaret was probably based upon the designs employed in Sultan al-Mansur Qalawun’s rebuilding work at the Masjid al-Nabawi in A.H. 678/1279-80. There are horizontal zigzags on the stucco columns that frame the opening in the 14th c. minaret of the Mosque of Muhammad ibn Qalawaun, a band of horizontal zigzags on the minarets of the 1349 mosque of Amir Shaykhu, and, a horizontal zigzag design band above the *şerefe* on the minaret of the Madrasa of Umm al-Sultan Sha’ban of 1368/9. The Fatimid Al Aqmar Mosque in Cairo has a later minaret, built in the late 14th c. by Amir Yalbugha al-Salami which has a horizontal zigzag band below the *şerefe* and it is also in a band below the *şerefe* on the pair of Mamlûke minarets of the mosque of Sultan al Mu’ayyad of 1415-20 and is also the design on the pairs of attached columns on both of these minarets. It was also the design between the first and second *şerefe* on the octagonal minaret of the Turab al-Imam Mosque.

⁴⁷ In addition to those recorded above, there is a horizontal zigzag ray pattern in black, red and white in the semi-dome of the mihrab of the Sultan al-Mu’ayyad mosque, horizontal zigzags in black and white in the mihrab of the Mosque of Mangak al-Yusufi of 1349; zigzags in the semi-domes of the mihrabs in the Mosque of al-Bakri built before 1374, and in the mihrab of the Madrasah of Mahmud al-Kurdi, built in 1395, as also in the semi-dome of the mihrab of the 15th c. Jamâl al-Dîn al-Ustadâr Mosque; in the sebil and in the mihrab of the funerary complex of Sultan Qansuh al-Ghuri, of black and white horizontal zigzags by 1505; as later in the Ottoman 16th c. mihrab of the Suleyman Pasha Mosque, Citadel, and in the reconstructed 1875 mihrab of the ‘Amr b. Al-‘As Mosque. There is a particular form of the zigzag design in red, white and green marble springing from and passing via the Name Allah repeated three times within the semi-dome of the mihrab of the Mosque of Sultan Hassan. All of these in Cairo. In Mamlûke Tripoli, the semi-dome of the 14th c. mihrab of the Madrasa al-Nuriyya is covered by a polychrome marble zigzag pattern springing from the middle of the arc, the zigzags widening towards the outer edge and there is a red, white and black marble horizontal zigzag in the niche over the inner portal of the Taynal Mosque, Tripoli, constructed in the 1330’s and the Tuwashî Madrasa also has a particular form of the zigzag design in the carved stone semi-dome, like that in ablaq in the mihrab of Sultan Hassan Mosque in Cairo, over the muqarnas niche over the entrance portal of 1471, as is also the case with the entrance niche of the 1315 Mausoleum of the Emir Sunqur Sâdî in Cairo.

⁴⁸ For example in various *nakkaşhane*-palace produced illustrated *Süleyman-name* the officials and *yenîçeri* are depicted with a gold band carrying this design around their head dress, as is also recorded in Peter Mundy’s Album, “A *briefe relation of the Turckes, their Kings, Emperors or Grand Signeurs, their conquests, religion, customes, habbits at Constantinople, etc., an illustrated manuscript*”, of Istanbul in 1618, in the British Museum ME OA 1974.6-17.013, depicts six Ottoman officials: *Aqa Larees* - the royal companion, the *Cavuşbaşı*, the *kapici* - gate-keeper, the *solak*, the *Yeniçeri* and the *Seferli*- a Janissary on campaign, all wearing a headdress carrying this design in a gold band around the wearer’s head.

http://www.britishmuseum.org/explore/highlights/highlight_objects/me/p/peter_mundy_manuscript.aspx It is also found on İznik ceramics, Musée national de la Renaissance, Château d’Ecouen Frédéric Hitzel, Mireille Jacotin, (M 238 239 m 240 352 Comptoir à décor sinisant E. Cl. 348 Hanap à décor de zigzag).

⁴⁹ Istanbul University T5964.

wall, and was constructed to serve as a marker for the shrine itself, this because Matrakçı includes it at the lower left corner in the detail which otherwise depicts only the inner shrine (Atasoy, 2015: 58A), clearly thereby indicating this *manār*'s considerable zigzag covered height. The same work records the shaft of a minaret of one mosque-mausoleum in Bagdad (probably representing that of Shaykh 'Abdu'l-Qādir-Gilānī d.1166) was then covered in turquoise green with blue zigzag bands (Atasoy, 2015: 102A). Mimar Sinan's door to the Süleymaniye Mosque, İstanbul, of 1558 carries an inlaid column of horizontal zigzags, and the arches supporting the main dome of Sinan's Mosque of Selim II at Edirne, of 1568–1575 carry alternating blocks of red and white zigzags, while the lower outer arches are without the zigzag, just of red and white blocks. The Ottoman 1574 Dervish Pasha Mosque in Damascus has zigzags carved on its west courtyard portal, while the semi-dome of its mihrab is, like some earlier Mamlūke mihrabs, decorated with a zigzag pattern in black, white and red marble⁵⁰. It is a design found on the domes of Ottoman inlaid Qur'an *Mahfazası* (Fig. 11), on particular tombs, as on tomb coverings etc., over the entrance to mosques and tombs and on other structures, objects and textiles. Doris Behrens-Abouseif writes that "*The dome of the Ribat al-Athar is adorned with a zigzag carving so shallow that it can only be seen at close range, unlike the pronounced carving on Mamluke domes.*" (Behrens-Abouseif, 1994: 266), but the reason why this design was chosen for the exterior design of this dome in the 1663-4 Ottoman restoration of this Mamlūke *ribat*, as a *takiyya* for the Khalwati Sufi order by Ibrahim Pasha al-Shaytan, one may think, is because beneath this Cairene dome there was "*preserved a piece of iron and wood which had belonged to the Prophet*" (EI1 1936, Vol. III, 359), and the use of this design on this dome thereby linked it to the same zigzag design employed at Medina. Likewise Qur'an *Kursi* often carry this zigzag design⁵¹, a tent of the Ottoman Sultan-Caliph carried this design in the 18th c. (Fig. 12)⁵² and, as late as 1902, the Ottoman minaret of the Adliye Mosque at the port of Bodrum, Muğla, Turkey, was constructed as a marker, with vertical zigzags in the brickwork of the shaft and on the *petek* above the *şerefe*. It is noteworthy that Abdül Aziz al-Saud's palace at Riyadh, Saudi Arabia carried a series of bands of horizontal zigzags on the exterior facades⁵³.

Literally Reading the Zigzag

It seems reasonable to suggest that this "zigzag" design may also have been "read" in a literal sense, read in its horizontal form as the combination of the written Arabic numbers 7 and 8 joined together, the design being read as repeating the number 7 and repeating the number 8. These two numbers, 7 and 8 when added together total 15, with the two numbers 1 + 5 summed = 6. The zigzag design could therefore be read as the repetition of the number 6. The number 6 representing the Arabic letter *wav* meaning "and", as in "*and Allah*"; as was recorded in the 12th c. by figures such as Shaykh Najm al-Dīn Kubrā (1145-1220), the *wav/vav* letter being regarded as, "*the letter of connection between man and God*" (Schimmel, 1984: 100), linking the believer with the Almighty.

⁵⁰ Op. cit. fn. 46. As also is the black and white horizontal zigzags in the semi-domes of the *mihhrabs* of the *son cemaat yeri* of the 1523 Çoban Mustafa Paşa, Gebze, Turkey, the zigzags descending from the sun's rays in the apex of each. Çoban Mustafa Paşa in the army of Sultan Selim that took Syria, Egypt and the Hijaz, and became the third Ottoman governor of Egypt.

⁵¹ It is also employed for example on a 19th c. Ottoman Çekmece, Mevlana Müze, Konya, Env. No: 358.

⁵² As in the miniatures by Levni in the 1720 Book of Festivals of Vehbi, of Ahmet III.

⁵³ For a 1935 photograph of this see, Mansel 1998, 140-141.

The repeat of the number 6 being read as both representing and repeating the numerical equivalent of the letters forming the Divine Name, Allah⁵⁴, 66, the zigzag design can be visually read as *dhikr/zikr*. This zigzag design can be read as a repeat of “*ve Allah*”, $wav=6 + wav=6 + wav=6$, read as 6 plus 66, and so formed a legible device on the flags or banners⁵⁵ of some Islamic states in the Middle Ages in addition to its other associations. This zigzag design repeats, like the mirrored doubled *wav* letter, the numerical equivalent of the Name Allah, 66, thereby serving in the man-made environment as a written/visual reminder of the Name of the Almighty. Those who used this design seem to have understood that, “*Nothing is greater than the remembrance of God,*” Surat Al-Ankabut 29:46, with the use of this zigzag design marking a structure or artefact with a reminder of the Almighty and, through this design’s resemblance to the rays around the sun, of the Light of the Almighty, reminding of The Light. It could be read as the number 6 repeated, twice to remind of the Name Allah, thrice as *dhikr/zikr*, “*ve Allah*”, and four times, as 6,666, a number traditionally understood to represent the totality of the *mushaf*⁵⁶, as signifying its total number of *ayet*; as likewise the number 6 can itself be read to imply and remind of the entire *mushaf* being divided into 60 *ahzāb*, and there being 114 Surat, which when added together, $1+1+4 = 6$; while the repeat of the letters representing the numbers 7 and 8 can be understood as signifying and reminding of the 78,000, that is, the total number of words traditionally understood to comprise the entire text of the Holy Qur’an (77,639).

The meanings conveyed and articulated through the use of the boldly contrasting “zigzag” design in an Islamic context can perhaps best be understood as representing through marking upon a physical form, dressing a structure or object, with a reminder of the Name Allah and a reminder of the presence of the Light of the Heavens and the Earth, as is recorded in the Surat Nūr 24:35: “*Allah is the Light of the heavens and the earth.*”, the *ayet* also found in a calligraphic band around the dome of qubbat an-nur at Medina. An-Nūr – The Light, being one of the Greatest Names of the Almighty. Abū Hāmid Muhammad ibn Muhammad al-Ghazālī wrote, “*Existence is a light streaming to all things from the light of His essence, for He is the light of the heavens and earth*” (Al Ghazali, 1992: 145). The use of the zigzag design within this temporal context serving to remind of the presence in this world of this Essential Light, as, through its associations with the Kaba, with the tomb of the Prophet⁵⁷ and with the Qubbat as-Silsila of al-Quds – of that which is not just lit up on the exterior, outwardly, but truly illuminated, *munawwar*, that is - within and through and through (e.g. Figs. 6, 7) – illuminated by the Light of the Light upon Light, the Light of the Almighty, *nūr-i ilāhi*.

⁵⁴ As is also the case for calligraphy and sculptures of the doubled *wav* letter, as also for sculptures and other depictions of the *hīlal*, the crescent moon, and its ceremonial reminder, the *hāfir/mahcha*, as also for the depictions of the tulip-*lale*, with its six petals, all of which can be understood as representing the numerical equivalent of the Name Allah, with the numerical value of 66, together with, for example, the hexagon surrounding a six pointed sun-star, that can also be “read” as 66. This meaning provides a reason for the frequent use of hexagonal tiles in Islamic contexts, serving like the zigzag design as a reminder of the number 6 repeated.

⁵⁵ As for example depicted in red and white, black and white, and blue and white horizontal and blue and white vertical zigzags in miniatures depicting textiles, on horse caparisons, emblazoned shields and the design on some flags of Muslim forces in the Cantigas de Santa Maria codex, made at the behest of Alfonso X the Wise, King of Castile between 1252 and 1284; on the flag of the Karamanoğlu Emirate, of horizontal red and white zigzags and vertical, of blue and white zigzags on the Teke Emirate’s flag on Augusto Angelino Dulcert’s 1339 portulan; horizontal of purple and silver in the c. 1345, Book of the Knowledge of all the Kingdoms, Lands, and Lordships that are in the World, in vertical zigzags in silver and blue on Abraham and Jehuda Cresques’ Catalan Atlas of 1375, and vertical in blue and white on Guillem Soler’s c. 1380 portulan.

⁵⁶ As Eviya Çelebi records, Dankoff 2004, 156. Hence, the Nizam of Hyderabad’s donations to the British Imperial war effort in September 1914 included the sums of: £6,666 to the Prince of Wales Relief Fund, £6,666 to the Imperial Indian Relief Fund and £6,666 for the Day collection for the Red Cross, Das 2010, 346-7; although the actual number is somewhat less, 6000, 6214, 6219, 6226, 6236.

⁵⁷ See for example the four references to “Nur” in reference to the Prophet Muhammad in the 13th c. *Al-Kawakib Al-Durriyya Fi Madh Khayr Al-Bariyya (The Brilliant Stars in Praising the Best of Mankind)* termed *Qasīdat al-Burda*, or “*Poem of the Mantle,*” by Imam Sharaf al-Dīn Muhammad ibn Sa’īd al-Būshīrī al-Sanhājī.

It is suggested that this design indicated, signalled and reminded, as the zigzag in three dimensions displayed in *ablaq* work in the semi-domes of mihrabs and through the zigzags forming the multitudinous facets of *muqarnas* in three dimensions, of the realisation of “the permeation of the Divine Presence” (Burckhardt 2001, 6) through and throughout this temporal world, a design that was employed and understood to remind of the Divine Names, Allah and an-Nūr. As the hadith relates of one who remembers the Almighty, “The light of such a one is like the light of the sun. I shall preserve him by My Might, and My Angels will protect him. I shall provide him with light where there is darkness and forbearance where there is ignorance.⁵⁸”, as likewise, “I shall surround you in My Light.⁵⁹”, reflected in the analogy which has often been drawn between the polished mirror of the heart of the believer reflecting the Light of the Real, as the polished mirror in this temporal world, like the moon, reflects the light of the temporal sun, this zigzag design was used to signify and remind the believer of that Greater Light.

In terms of its references and of what it signifies, reading its meanings, the “zigzag” design within an Islamic context and culture⁶⁰, is perhaps the single most powerful visual non-calligraphic design to have been employed as an aid to the remembrance of the Almighty and of the Light of the Almighty. The zigzag design employed in this context can be read as an explicit visual marker, associating the place where it was employed with the *haramayn*, through reminding of the Noble Sanctuaries, of the Caliph and of the Guardian of the *haramayn*. It was at times displayed as a marker of legitimacy and, it is suggested, indicated through its use in territory ruled over by Turkish rulers from the 11th to the 16th c., from Afghanistan and India to Iran and Turkey, of the Association-Partnership of Turkish Sultans with the Abbasid Caliphs in Bagdad and Cairo. It remained a legitimising design, associated with the *haramayn*, employed by the Ottomans into the 20th c. It also signified the flash of reflected light, reminding of *An-Nūr*, as sunlight is reflected from water, as from the polished surface of mirror; as a visual reminder of The Light, and of reminding of this Name of the Almighty; as also a reminder of those recognised as lit by the reflection of His Light⁶¹, whose tomb covers and domes were often covered in this design and with zigzags on or over the associated structures, dome and minaret-*manār*. It is also a repeat pattern of the number 6 and therefore a design that can be read as *dhikr/zikr*-Allah; as also, as a design reminding of the Holy Qur’an and of the Almighty, the Lord of the two points. It was employed with care by designers and formed in consequence, a noteworthy, legible and powerful marker for the believer in terms of the meanings that it conveyed, employed to mark a model, an example, a prospect and reminder, indicating the potential inherent in the human state, an aperture, a window, both within and out of this temporal world, removed from all of that which is simply relative, it serves as a temporal reminder of the Light of the Real.

⁵⁸ From the collection of al-Bazzār, cited in the *Mishkāt al-Anwār* of Ibn ‘Arabī, Ibn ‘Arabī 2010, 72.

⁵⁹ A hadīth in the *Mawāqif* by al-Naqqāsh, cited in the *Mishkāt al-Anwār* of Ibn ‘Arabī, Ibn ‘Arabī 2010, 71.

⁶⁰ It may also perhaps be related, in its gematrical value as 7 = zay and 8 = ha’, to words such as *zahrata* (the) Splendour.

⁶¹ “According to Plato, a reflected image is situated somewhere between being and non-being, between truth and lie, between sameness and otherness; so that it is “another thing of the same kind, copied from the genuine thing,” (Plat. *Soph.* 240a) it is both a reflection and a virtual twin of the truth, because the truth represented by phenomena is not the truth itself, but only its reflection.” My thanks to Associate Prof. E. Gören for this quote concerning the nature of reflection and truth from his presentation concerning the Pseudo-Dionysian corpus entitled, *Talking about the unknown God*. As a hadith relates: “Man’s task in this world is to cleanse his heart, to polish it, and ultimately to make of it a perfect mirror reflecting God.”, Chittick 1983, 39. Al-Ghazali relates, “By the Science of the Path to the Afterlife (i.e. its practical part, the science of practice) we mean the science that teaches how to polish the mirror (of the heart) from these accretions.” Treiger 2011, 39, as in his *Ihyā Ulūm Al-dīn*, Book XX; as likewise Jelalad-Dīn Rumi relates, *Mathnawi* Book I, line 3154, “The Sufis polish their breasts with invocation and meditation so that the heart’s mirror may receive virgin images from the unseen world.”, Chittick 1983, 160; as is later recorded in Ibn ‘Atā Allāh’s sermons at the start of the 14th c., “Also, *dhikr* and seclusion (to) “polish the mirror of the heart” and make one ready for the encounter with God.” Shoshan 2002, 16.

BIBLIOGRAPHY

- S.O.D.3 *The Shorter Oxford Dictionary*. I, II, Ed. C. T. Onions, third ed., Oxford, Oxford University Press.
- Allen, T. (2004). *Islamic Art and the Argument from Academic Geometry*, CA, Solipsist Press.
- Allen, T. (1986). *A Classical Revival in Islamic Architecture*. Wiesbaden, Dr. Ludwig Reichert Verlag.
- 'Arabi, M. Ibn (2010). *Divine Sayings 101 Hadīth Qudsī, Mishkāt al-Anwār*. Trans. S. Hirtenstein & M. Notcurr, Oxford, Anqa Pub.
- Arik R., & O. Arik (2008). *Tiles, Treasures of Anatolian Soil: Tiles of the Seljuk and Beylik Periods*. İstanbul, Kale Group.
- Atasoy, N. (2015). *Swordsman, historian, mathematician, artist, calligrapher: Matrakçı Nasuh and his Menazilname*. İstanbul, Masa.
- Behrens-Abouseif, D. (1994). *Egypt's Adjustment to Ottoman Rule: Institutions, Waqf and Architecture in Cairo, 16th and 17th Centuries*. Leiden, Brill Academic Pub..
- Behrens-Abouseif, D. (1989). *Islamic Architecture in Cairo: An Introduction*. Leiden, Brill.
- Bonner, J. (2017). *Islamic Geometric Patterns: Their Historical Development and Traditional Methods of Construction*. New York, Springer.
- Burckhardt, T. (2001). *Mystical Astrology According to Ibn 'Arabi*. Louisville, KY, Fons Vitae.
- Burgoyne, M. H. (1987). *Mamluk Jerusalem: An Architectural Study*. London, World of Islam Festival Trust.
- Burton, R. (1893). *Personal Narrative of a Pilgrimage to Al-Madinah and Meccah*. Vol. 2, Dover reprint of 1893 Memorial edition, New York, Dover.
- Brown, R. (1876). *The Countries of the World*. London-Paris-New York, Cassell, Petter, Galpin & Co.
- Cannon, G. H. & Kaye, A. S. (1994). *The Arabic Contributions to the English Language: An Historical Dictionary*. Wiesbaden, Otto Harrassowitz Verlag.
- Chittick, W. C. (1983). *The Sufi Path of Love: The Spiritual Teachings of Rumi*. New York, SUNY Press.
- Creswell, K. A. C. (1979). *The Muslim Architecture of Egypt*. Vols. I, II, New York, Hacker Arts Books.
- Crichton, A. (1852). *History of Arabia and its Peoples*. London, Nelson.
- Critchlow, K. (1976). *Islamic Patterns: An Analytical and Cosmological Approach*. New York, Schocken Books.
- Dankoff, R. (2004). *An Ottoman Mentality: The World of Evliya Çelebi*. Leiden, Brill.
- Das, S. (2010). *Ardour and Anxiety in*, Ed. H. Liebau, K. Bromber, K. Lange, D. Hamzah & R. Ahuja, *The World in World Wars: Experiences, Perceptions and Perspectives from Africa and Asia*, Leiden, Brill.
- Déroche, F. (2013). *Qur'ans of the Umayyads: A First Overview*. Leiden, Brill.
- Duggan, T. M. P. (2013). "Review of, J. M. Bloom, *The Minaret*, *Edinburgh Studies in Islamic Art*, Edinburgh, 2013", *Mediterranean Journal of Humanities*, MJH, III/2, 2013, 357-365.
- Duggan, T. M. P. (2006). "The motifs employed on Rum Seljuk 13th century eight pointed star tiles from Antalya Province and elsewhere in Anatolia: an interpretation", *ADALYA IX*, 149-219.
- Ettinghausen, R. & Graber, O. (1994). *The Art and Architecture of Islam 650-1250*. Newhaven & London: Yale University Press.
- Fehvari, G. (2000). *Ceramics of the Islamic World*. London, I. B. Tauris.
- Fehvari, G. (1998). *Pottery of the Islamic world in the Tareq Rajab Museum*. Kuwait, Tareq Rajab Museum.
- Fernando-Amilbansa, L. (2005). *Ukkil: Visual Arts of the Sulu Archipelago*. Manila, Ateneo University Press.

- Forkl- Kalter-Leisten-Pavaloi 1993 Die Garten Des Islam. Hrs. H. Forkl, J. Kalter, T. Leisten, M. Pavaloi, Hansjörg Mayer, Stuttgart, London, 1993
- Fowler, W. C. (1857). The English language, in its elements and forms. London, William Kent and Co.
- Al Ghazali, M. (1992). The Ninety-Nine Beautiful Names of God: al-Maqsad al-asna fi sharh asma'Allah al husna. Trans. D. B. Burrell & N. Daher. Cambridge, The Islamic Texts Society.
- Ipek, S. (2011). "Dressing the Prophet: textiles from the Haramayn", Hali 168: 59-61.
- Ipek, S. (2006). "Ottoman Ravza-i Mutahhara Covers Sent From Istanbul To Medina With The Surre Processions", Muqarnas 23, 289-316.
- Issa, A. M. (1994). Islamic art terms: (lexicon: explained and illustrated). İstanbul, Research Centre for Islamic History, Art and Culture (IRCICA).
- Keser-Kayaalp, E. & Wheatley-Irving, L. (2017). Late Antique Architectural Sculpture at the Mayyāfāriqīn Mosque (Silvan Ulu Cami) 125-152, Central Periphery? Art, Culture and History of the Medieval Jazira (Northern Mesopotamia, 8th–15th centuries) Papers of the Conference held at the University of Bamberg, 31 October–2 November, 2012. Ed. L. Korn– M. Müller-Wiener, Wiesbaden, Reichert Verlag.
- Nawawi Imam (1989). Gardens of the Righteous-Riyadh as-Salihin. Trans. Khan, M. Z., London, Curzon Press.
- Khoury, N. N. N. (1996). The Meaning of the Great Mosque of Cordoba in the Tenth Century. Muqarnas 13, 80-98.
- Krabbenhöft, N. (2011). A Veneer of Power: Thirteenth-Century Seljuk Frescoes on the Walls of Alanya and Some Recommendations for their Preservation, School of Social Sciences, Koç University, Istanbul, Turkey, unpublished thesis
- Kurtuluş, T. (2017). Topkapı Sarayı Müzesi'nde Korunan Memluk Dönemi Tekstil Örnekleri 421-439, XVIII Ortaçağ ve Türk Dönemi Kazıları ve Sanat Tarih Araştırmaları Sempozyumu 22-25 Ekim 2014, Bilderiler, Aydın.
- Lyons, M. C. (2015). Tales of the Marvellous and News of the Strange. Trans. M. C. Lyons, London, Penguin Random House.
- Madrus, J. C. (1996). The Book of the Thousand Nights and One Night rendered into English from the literal and complete French translation of Dr. J. C. Madrus by P. Mathers. IV, London, Routledge.
- Mansel, P. (1998). Sultanların İhtişamı, 1869-1945 Orta Doğu Hükümdarları. İstanbul, İnkılâp.
- McWilliams, M. & Roxburgh, D. J. (2007). Traces of the Calligrapher: Islamic Calligraphy in Practice, c. 1600-1900. Boston, Museum of Fine Arts.
- Melikian-Chirvani, A. S. (1994). The Light of the World, 146-155, Ed. R. Hillenbrand, The Art of the Saljuks in Iran and Anatolia. CA, Mazda.
- Murray, C. (2003). Key Writers on Art: From antiquity to the nineteenth century. Oxford, Psychology Press.
- Muslu, C. Y. (2014). The Ottomans and the Mamluks: Imperial diplomacy and warfare in the Islamic world. London, I.B. Tauris.
- Nicholas, P., Yeager, S. (2012) Remembering the Crusades: Myth, Image and Identity. Baltimore, The Johns Hopkins University Press.
- Özdural, A. (2017) Preliminaries, in Ed. G. Necipoğlu, The Arts of Ornamental Geometry: A Persian Compendium on Similar and Complementary Interlocking Figures. Leiden, Brill, 163-178.
- Özdural, A. (2000) Mathematics and Arts: Connections between Theory and Practice in the Medieval Islamic World, Historia Mathematica 27, 171-201.
- Papadopoulo, A. (1979). Islam and Muslim Art. New York, H. N. Abrams.
- Pendergrass, R. (2015). Mythological Swords. Lulu.com

- Porter, V. (2012). *The Art of Hajj*. London, British Museum Press.
- Redford, S. (2005). "A Grammar of Rum Seljuk Ornament," 283-310 in, *Mésogeios*.
- Redford, S. (2000). *Landscape and the State in Medieval Anatolia*. Oxford, BAR 893.
- Redford, S. (1996). "Seljuk pavilions and enclosures in and around Alanya"; *AST XIV. I* (1996) 453-464.
- Riegl, A. (1992). *Problems of Style: Foundations for a History of Ornament*. David Castriota Translation, Princeton, New Jersey, Princeton University Press.
- Ruiz, R. A. (2004). *El Ribat Califal: excavaciones y estudios (1984-1992)*. Alicante, Casa de Velázquez.
- Rumi, J. (1982). *The Mathnawi of Jalalud'din Rumi. Book III*. Trans. R. A. Nicholson. Cambridge, Gibb Memorial Trust.
- Saliba, G. (1999). "Artisans and Mathematicians in Medieval Islam." Review of the *Topkapı Scroll: Geometry and Ornament in Islamic Architecture* by Gülru Necipoğlu, *JAOS* 119, no. 4: 637-645.
- Schimmel, A. (1984). *Calligraphy and Islamic Culture*. London & New York, New York University Press.
- Shipley, J. T. (2001). *The Origins of English Words: A Discursive Dictionary of Indo-European Roots*. Baltimore, Maryland, John Hopkins University Press.
- Shoshan, B. (2002). *Popular Culture in Medieval Cairo*. Cambridge, Cambridge University Press.
- Spiro, S. (1895). *An Arabic-English Vocabulary of the Colloquial Arabic of Egypt: Containing the Vernacular Idioms and Expressions, Slang Phrases, Etc., Etc., Used by the Native Egyptians*. Cairo, Al-Mokattam printing office.
- Steenbergen J. van (2016). *Caliphate and Kingship in a Fifteenth-Century Literary History of Muslim Leadership and Pilgrimage: al-Dahab al-Masbūk al-Dahab al-Masbūk fī Dikr man Hağğa min al-Hulafā' wa-l-Mulūk*, Leiden, Brill.
- Tabbaa, Y. (2008). "Andalusian Roots and Abbasid Homage in the Qubbat al-Barudiyyin in Marra-kech", 133-146 in *Muqarnas: Frontiers of Islamic Art and Architecture: Essays in Celebration of Oleg Grabar's Eightieth Birthday; the Aga Khan Program for Islamic Architecture Thirtieth Anniversary Special Volume*, Leiden, Brill.
- Tabbaa, Y. (2002). *The Transformation of Islamic Art during the Sunni Revival*. London & New Yourk, I. B. Tauris.
- Treiger, A. (2011). *Inspired knowledge in Islamic Thought: Al-Ghazali's Theory of Mystical Cognition and its Avicennian Foundation*. London & New York, Routledge.
- Vandenbroeck, P. (2016). *Antwerp Royal Museum Annual 2013-14*.
- Walker, A. (2010). "Middle Byzantine Aesthetics and the Incomparability of Islamic Art: The Architectural Ekphraseis of Nikolaos Mesarites," *Muqarnas* 27 (2010): 79-101. http://repository.brynmaur.edu/cgi/viewcontent.cgi?article=1053&context=hart_pubs
- Zarnecki, G. (1992). *Further Studies in Romanesque Sculpture*, London, Pindar Press.

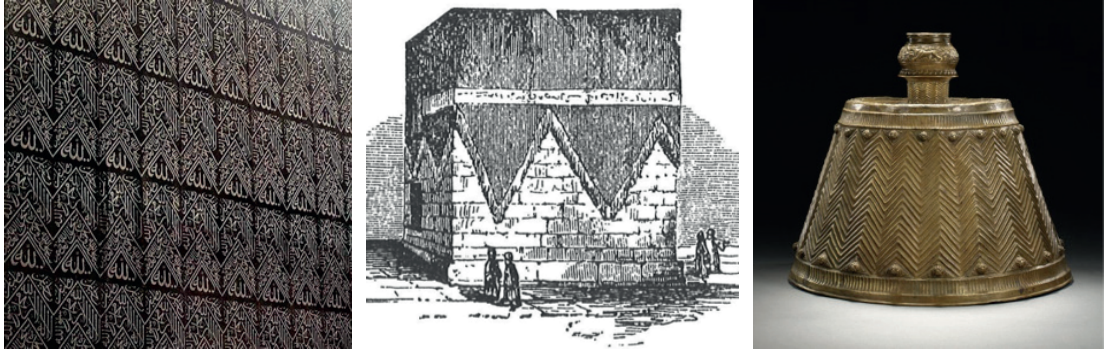


Fig. 1. The bands of horizontal zigzags on a 15th c. A.H./21st c. A.D. Ka'ba kiswa.

Fig. 2. Engraving of the Ka'ba in the mid-19th c. in its "naked" state at the time of the hajj, with the kiswa below the hazim in the form of a horizontal zigzag. It is slightly inaccurate, as the kiswa was folded around the suspension ropes to form this zigzag pattern, as Burton records. The zigzag design on the Ottoman textile itself was not depicted in this engraving. (From Burton 1893, 212).

Fig. 3. Horizontal zigzags on the neck and body of a brass candlestick, indicating the down pouring of rays of light, with lions' heads, Khurasan, circa 1200, 40.6cm. by 43.7cm. max. diam. Sotheby's, London, Arts of the Islamic World, 18 April, 2007, Lot No. 96. <http://www.sothebys.com/en/auctions/ecatalogue/2007/arts-of-the-islamic-world-107220/lot.96.html>



Fig. 4. The zigzag design in blue and white, used to represent both the reflection from the surface of both circular mirrors and the reflection of light from the pool of water, on a mina'i-ware bowl, Iran c. 1200. Museum für Islamische Kunst, Berlin, (Forkl-Kalter-Leisten-Pavaloi 1993, Abb.72).

Fig. 5. The vertical zigzag design in blue and white on the depiction of a typical bulbous glass mosque lamp with attachment rings at the sides, late 12th-13th c. Iran, under-glaze painted frit-ware tile. (Met. Museum, New York, Acc. No. 20.120.106). <https://www.metmuseum.org/art/collection/search/447188?sortBy=Relevance&ft=Acc.+No.+20.120.106+Iran+tile&offset=0&rpp=50&pos=9>

Fig. 6. An Archangel dressed in zigzags indicating light from a 17th c. copy of Abu Yahya Zakariya' ibn Muhammad al-Qazwini's 'Ajā'ib al-makhlūqāt wa gharā'ib al-mawjūdāt. (Harvard Art Museum-Cambridge 1972.3).

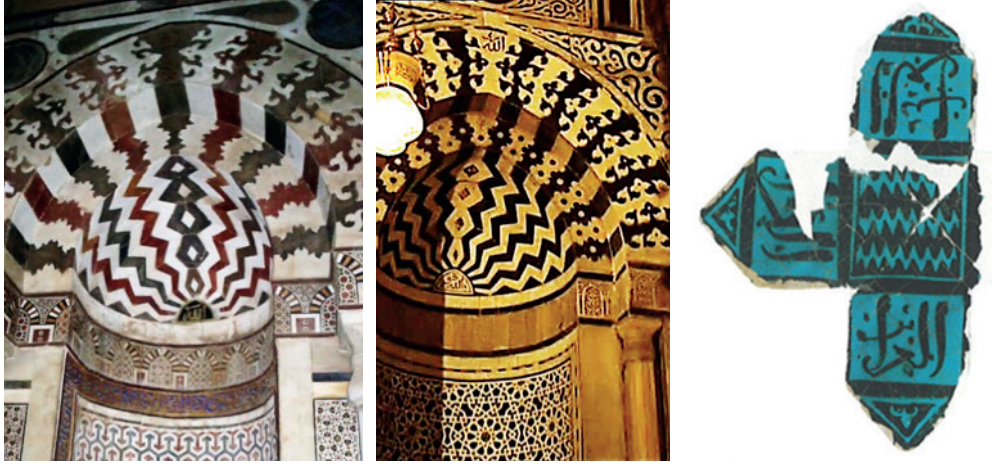


Fig. 7. The black, white and red zigzags that flow out from the Name Allah within the semi-dome of the mihrab and the Name repeated at the apex of the niche, in the Khanqah of Sultan al-Ashraf Barsbay, Cairo, 1432.

Fig. 8. The black and white zigzags that flow out from the Name Allah in red on white marble carved in the semi-dome of the mihrab, and repeated in red on white marble at the apex of the niche surround, in the mosque-madrasa complex in Cairo of Sultan Qansuh al-Ghuri of 1503/04.

Fig. 9. In the centre, a square of Ka'ba kiswa-like zigzags, with one of the Names of Allah, al-Galib, The Victorious, on each of the four arms of a damaged Seljuk under-glaze turquoise and black, frit-ware tile c.1236, Kubadabad Palace by Lake Beyşehir, Turkey. (From Arik-Arik 2008, Fig. 312).



Fig. 10. Mamluke dome, dressed with the zigzag kiswa design with its carved attachment rings, over the Khanqah of Sultan Faraj ibn Barquq, 1411, Cairo. Echoing the design on the kiswa of the haramayn and so visually displaying the evidence of the Mamluke Sultans' laqab, Khādīm al-Haramayn al-Sharīfayn. https://dome.mit.edu/bitstream/handle/1721.3/72892/163062_cp.jpg?sequence=1

Fig. 11. Bands of horizontal zigzags on the dome of an Ottoman Qur'an Mahfazası of 1525, inlaid in ebony, ivory, silver wire and mother of pearl, (TIEM, İstanbul, Env. No. 5). <http://www.museumwnf.org/images/zoom/objects/isl/tr/1/26/1.jpg>

Fig. 12. Detail of a miniature from the Surname-i Vehbi by Levni of 1720 with the Sultan-Caliph Ahmet III's tent carrying this "zigzag" design. https://upload.wikimedia.org/wikipedia/commons/2/2c/Ahmet_III_1720.jpg

