Fragmentary Polychrome Mīnāʾī Bowl with Zodiac Design in the Middle Eastern Culture Center in Japan: An Iconographic Study

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Some ornaments of the applied arts produced in the Seljuq period include images of the zodiac signs and the seven planets, including the Moon and Sun. In the field of metalwork, relatively many examples are seen, but in ceramics and particularly mīnāʾī ware, their occurrence is rare. Therefore, the fragmentary polychrome mīnāʾī bowl with zodiac designs in the Middle Eastern Culture Center in Japan is of great value in the study of these iconographies. In this paper, the designs of the zodiac signs of Sagittarius and Gemini in polychrome colors are focused on and reconsidered. These images are examined through the texts describing the figures of these zodiac signs and by comparing them with works of art with the same designs dating from the eighth century to the early thirteenth century. The paper clarifies the transformation of the iconography from one of an expression of the ecliptic dragon in astrology to that of the symbol of royalty in the tradition of Persian art.

Keywords: zodiac signs, mīnāʾī, Seljuq art, Jawzahr, iconography

I. Introduction

The surface of the fragmentary polychrome “mīnāʾī” (meaning “enameled”) overglaze-decorated ceramic bowl in the Middle Eastern Culture Center in Tokyo, Japan (Fig. 1) is decorated with the signs of the zodiac, including Gemini and Sagittarius. Many art historians have pointed out that the two signs have a strong relationship with the eighth invisible pseudo-planet, “Jawzahr,” especially in metalwork objects. The fragmentary ceramic bowl in Japan, which has been dated to the twelfth to thirteenth century, was examined and introduced by the historian-archeologist Tsugio Mikami, whose field is the pottery of Asia and the Middle East (Mikami 1990). In the last part of his article, he attempts an explanation of the iconography of the bowl’s zodiac designs; however, there seem to be some misunderstandings in his analysis, and he himself has stated that there is room for debate regarding the implications of the designs. Therefore, the current study aims to present a re-evaluation of the zodiac designs on this bowl. In particular, it will focus on the sinister symbolism of Jawzahr.

II. General Survey of the Fragmentary Mīnāʾī Bowl in Japan

According to Mikami, the diameter can be deduced as approximately 19.0 to 19.5 cm. My own measurements support this assertion. The central portion is completely missing, so the exact height cannot be gauged. However, 9 to 10 cm is a common height for mīnāʾī bowls of similar diameter.

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1 It was formerly possessed by Mr. and Mrs. Ishiguro: Mr. Ishiguro acquired the piece in Teheran, Iran in 1972 (Ishiguro 1987, no. 34).

2 Mikami calculated the diameter based on the length and an angle of a remnant of the rim (Mikami 1990, 138–139).
The material is a fine quality off-white clay containing powdery quartz that is formed into walls of 3.5 to 4.5 mm in thickness. Over the egg-white glazed ground, eight colors are employed for the decorative painting: dark blue, light blue, black, reddish brown (brown), light brown (as a skin color), light purple, olive-green and white. Gold leaf is added to many places on the outside surface. The rim is enriched by small light blue gadroons, below which is a band (1.5 cm wide) of decorative inscriptions. The band of twelve roundels, each 3.2–4 cm in diameter, show the twelve signs of the zodiac starting counter-clockwise from the left; from the right side of the upper part, Aries (the Ram), Taurus (the Bull), Gemini (the Twins), Cancer (the Crab), Leo (the Lion), Virgo (the Virgin), Libra (the Scales), Scorpio (the Scorpion), Sagittarius (the Archer), Capricorn (the Goat), Aquarius (the Water Bearer), and Pisces (the Fish).

Several of the painted zodiac images are very fragmentary; these include Aries, Leo, Virgo and Aquarius, while Pisces is a separate, small, incomplete fragment. As for Aquarius, one-third of the right side under the right hand is missing, but judging from the remnant the Water Bearer seems to have been depicted holding a rope attached to a basket beside a well. Scorpio is represented not as a single being but as a pair of beings in different colors that are juxtaposed in an upside-down, head-to-tail position with each other. As for the sign of Libra, this is depicted as a human figure wearing a brilliant dark blue garment with whitish pattern positioned under a balance. Detailed observation reveals that the garment’s pattern consists of five minute lines pointing at pentagonal corners. In the middle lower part below the Libra and Scorpio roundels, a part of a human figure can be seen in what remains of a separate, partial roundel. Such a figure can also be seen in the same position below and between Gemini and Cancer.

The extant inscriptions are as follows:³

The interior
In Arabic, in stylized Kufic script, inside below the rim in the band (1.5 cm wide):

*al-salāma wa’l-dawla wa’l-salāma wa’l-dawla…*

peace and dominion and peace and dominion…

The exterior
In Arabic with Persian terms, in Naskhī script:

Part 1 (reverse of Libra, Scorpio and Sagittarius)

*…sultān al…….malik…….a’salām al-muslimīn….sultān…malik⁴*

Part 2 (reverse of Taurus, Gemini and Cancer) (Fig. 2)

*…malik (mulk)-hā wa adāma dawlat-hā….amīr al-mu’mīnīn iqbāl dawla sultān al-a’zam shāhanshāh al-‘azīz…*

Let the king (kingdom) and nation live long, leader of the devout [commander of the

³ Transcribed and translated by the Iranian archeologist M. Y. Kiani with the cooperation of the Japanese linguist Tsuneo Kuroyanagi and the Japanese historian Shinji Maejima (Mikami 1990, 144–145; Ishiguro 1987, 266–267).

⁴ In 1058 the Abbasid caliph al-Qā‘im bestowed on Toghrîl the honorific titles *rukn al-dawla* (Pillar of the State), *qasīm amīr al-mu’mīnīn* (Partner of the Commander of the Faithful) and *malik al-mashriq wa’l-magrib* (King of the East and West). The Seljuq rulers favorably used the title “malik” with “sulṭān” (Sevim 1998, 160). At the same time “shāh” was also used as a title for the ruler. The Seljuqs claimed descent from Shâh Afrāsiāb [Afrāsīyāb] (one of the legendary kings in the Iranian traditions) (Yarshater 2014, 576).
faithful], prosperity to the nation of the great sultān, strong ruler…

The fragmentary bowl is missing the central part where it is probable that the seven planetary lords were represented, namely, Mars, Mercury, Venus, the Moon, Saturn, Jupiter, and the Sun, and the latter would have likely been located in the very center. Though it is not a mīnāʾī bowl, a large bowl in the collection of the Museum of Fine Arts, Boston (09.103) (Mikami 1990, 148, fig. 67; Pope 1938, pl. 713) is decorated with both the seven planetary lords and the twelve zodiac signs. The diameter of this bowl, which is a luster-painted ware, is 49.2 cm, and this is approximately 2.5 times the size of the bowl in Japan. The Sun and Leo are depicted as a little larger in size than the other planetary lords. Like this lusterware bowl, originally the bowl in Japan probably possessed nineteen roundels centered on the Sun.

Although Mikami seems not to have been aware of its existence, a similar mīnāʾī bowl with astrological designs (57.36.4.) is preserved in the Metropolitan Museum of Art in New York (hereafter MMA). This bowl was also broken but has been repaired, and its composition and the great majority of the decoration are original (Carboni 1997, 20). It has a depiction of the seven planets in the center. Instead of including the zodiac designs, the painter of this bowl placed one large and two small gold roundels, representing stars, between the heads of each planet and six small stars around the Sun. A band of ten horsemen, separated by birds, rings the central group of planets (Canby 2016, 206, no. 123).

The sizes of the two mīnāʾī bowls are almost the same, which is the standard size of mīnāʾī bowls in this form, and the decoration of the rim, the band of inscriptions and the overall color scheme bear a resemblance to each other. Between the planets in the MMA, the small gold roundels are roughly represented, and they could perhaps imply simplified zodiac signs.

The dedicative inscription on the two bowls clarifies that in each case the dedicatee was a ruler or a prince. Yet if we compare the two more closely, the details are slightly different. On the MMA’s bowl the heads of both the human figures and the personified planets each have a halo. In contrast, on the bowl in Japan the heads of the personified figures and of the zodiac signs with heads, namely, Libra, Aquarius, Virgo, Gemini and Sagittarius, do not. Moreover, not only the facial expressions, but also the kinds of drapery and the patterns on the costumes exhibit some differences in terms of style. Generally speaking, it can be said that the MMA’s bowl is more stylized and sophisticated.

III. Iconographic Study
As for the representation of zodiac signs in Islamic art, especially those of Gemini and Sagittarius

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5 As for the date of this mīnāʾī bowl, based on the inscriptions on the exterior, Mikami proposes a late twelfth century date, mainly because the title “shāhanshāh,” which is a Persian term, seems to have been used only during the period when the Great Seljuq Empire was at its height (Mikami 1978, 145–146). However, visual examination of the two bowls is not sufficient to establish a secure dating.

6 For the color plate, see http://www.mfa.org/collections/object/large-bowl-8905 (accessed August 31, 2016).

7 For the color plate, see http://www.metmuseum.org/art/collection/search/451379 (accessed August 31, 2016).

8 As for the inscriptions on the MMA’s bowl, see also http://www.metmuseum.org/art/collection/search/451379 (accessed August 31, 2016). Note that the inscriptions on the interior rim and the exterior are both fragmentary as a result of damage and overpainting.
in the applied arts such as metalwork and pottery, Hartner’s theory has been widely accepted. According to his several articles, astrological thought contributed significantly to the formation of the images of zodiac signs in early Islamic art (Hartner 1938; 1959; 1965; 1973 among others). The astrological tradition of rendering each zodiacal constellation with an associated planetary lord had a strong influence on constellation iconography. For instance, Gemini and Sagittarius are linked with the eighth invisible pseudo-planet, Jawzahr, which was usually depicted as a dragon and believed to cause eclipses by swallowing the Sun or the Moon.

Such ideas are based on the ancient Indo-Iranian legends. In Hindu astrology, the Indian rāhu myth functions as an explanation of eclipses as follows: The demon rāhu, immortalized by the forbidden amrita drink, which he had sipped, is beheaded by Vishnu, but his two parts, the head (rāhu) and the tail (thenceforth called ketu), having become transformed from an earthly body into a celestial body, incessantly try to devour the Sun and the Moon in order to take revenge on them for having denounced rāhu’s crime to Vishnu. Thus rāhu and ketu are both identified with the eclipse monster (Hartner 1938, 116–119; 1965, 502–503; Markel 1990, 24).

Hartner explains that the word “Jawzahr” is derived from the Persian word “gaw-chihr,” which is recognized as meaning “the bull-shaped” or “the bull-face” and alluding to a bull-horned serpent or dragon, or some other horned animal (Hartner 1938, 121). He also suggests some other meanings such as “the dragon’s head and tail,” “a comet,” or “a nut,” citing the descriptions in two dictionaries and one encyclopedia (Hartner 1938, 120).

In Islamic astrology, the pseudo-planet Jawzahr was assigned a position of exaltation and of dejection. These positions were attributed to Gemini and Sagittarius, respectively, and the dragon is included in the decorative images of both of these constellations.

In this context, Sagittarius and Gemini on the mīnāʾīb bowl in Japan are symbols of the ecliptic dragons—the head rāhu and the tail ketu, respectively. The sign of Gemini is represented by the torsos of two youths whose serpentine lower bodies are intertwined (Fig. 3). The image of the monster-dragon rāhu is reflected in the bodies of the youths here, while Sagittarius is depicted as a centaur with a tail ending in a dragon’s head (Fig. 4). Shooting an evil ecliptic dragon seems to have been a favorite motif for ex-nomad rulers of the Seljuq dynasty and those of the subordinated dynasty to the Seljuqs in the Islamic world.

1. Representation of Gemini (al-Jawzā, or al-Tawʾamān in Arabic)

Gemini, or the Twins, is usually rendered in books of Islamic astronomy as two standing youths putting one hand on the shoulder of the other. In the field of art many works adapted “double-headed (Siamese) Twins in a sitting cross-legged position.” The Twins on the bowl in Japan are not representative of the usual iconography. Such an image of serpent-type Twins is rare. However, there is an analogous example in a manuscript illustration held by the MMA (19.68.1).

On the verso of a leaf from a Persian manuscript, Muʾnis al-aḥrār fī daqāʾiq al-ashʿār (The Free Man’s Companion to the Subtleties of Poems) written by Muhammad ibn Badr al-Dīn Jājarmī, the personified Moon is depicted in conjunction with Gemini, Cancer, and Leo (Swietochowski and Carboni 1994, 42–45; Carboni 1997, 28–29; Komaroff and Carboni 2002, 196–197, 246). This manuscript, dated A.H. 741/C.E. 1341, was made in Isfahan around one and a half centuries
later than the mīnāʾī bowl in Japan.

In the manuscript, the Twins are depicted as two youths whose serpentine tails are joined. They wear gold crowns and green tunics and their reptile-like tails are knotted. The lower part of the body is like a snake connecting the two youths together, which is the same as the mīnāʾī bowl in Japan. However, the depiction of the youths on the bowl in Japan is not usual; the ornamental patterns are added directly onto their bodies except for their hands but including the lower soft legs. Moreover, the patterns are not similar to dragon scales. The pattern on the youth on the right-hand side is rinceau, which is the same as the plant pattern drawn outside of the rondels. The pattern on the youth on the left-hand side is geometric (hexagon prolonged horizontally). Although their legs end in the form of a snake’s body, they actually have forked soft legs which are not knotted. Also, a lance or a stick is an attribute of the Twins, which is positioned between them and which they each hold with one hand. A simple long lance is rendered on the bowl in Japan, but in the case of the illustration a curious, eerie face is mounted on a stick. Hartner states that the object on the top of the staff is the severed mask of rāhu. He supports his assertion by referring to the images on a pen-box made by Maḥmūd ibn Sunqur (1891, 0623.5) and on the Vaso Vescovali, a lidded bronze bowl (1950, 0725.1), both in the British Museum, London (Hartner 1973,110, 114). These two metalwork objects also depict personified Twins whose lower half-bodies are not serpentine.

The Middle Eastern Culture Center in Japan also holds an Islamic metalwork piece, originally in a private collection (diameter 13.0 cm) (Figs. 5 and 6). This brass, openwork incense burner with silver inlay, which probably dates to the late twelfth century to thirteenth century, is very similar to both the pen-lid box and the Vaso Vescovali in terms of the design and the compositional scheme for the Twins. Iconographically, a brass ewer in the MMA (44.15) also shows the same type of zodiac design.

In the case of the incense burner, there are two peculiar masks positioned between the Twins

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9 This dispersed manuscript is an anthology of Persian poetry compiled and written by Jājarmī, the folio in question includes a riddle-like illustrated poem in praise of the Seljuq sultan Sulaymānshāh written by Muhammad Rāvandī (b. ca. 1165) and an astrological poem and a quatrain composed by Jājarmī himself (Komaroff and Carboni 2002, 246–247).
10 For the color plate, see http://www.metmuseum.org/art/collection/search/447071 (accessed August 31, 2016).
11 “It looks like a mask or monstrous head mounted on a staff” and “after all, there can hardly be a doubt that it symbolizes the head of the dragon. Somewhat surprising, it is true, is the fact that the face has human features and does not resemble the traditional Islamic dragon. But there is a strong similarity with another variety of our monster, viz., the colossal figure of the Indian rāhu” (Hartner 1938, 137). See also Kuehn 2011, 137–141.
12 For the color plate, see http://www.britishmuseum.org/research/collection_online/collection_object_details.aspx?searchText=penbox&ILINK|34484,|assetId=22871001&objectId=238901&partId=1 (accessed August 31, 2016).
13 For the color plate, see http://www.britishmuseum.org/research/collection_online/collection_object_details.aspx?objectId=237090&partId=1&searchText=Vaso+Vescovali&page=1 (accessed August 31, 2016).
14 Hartner refers to the pen-box dated 1281 and the Vaso Vescovali dated to circa 1200 as good examples representing “the Head of the ecliptic Dragon” surmounted on a stick or disc. Following Hartner’s theory, Carboni also identifies the head mounted on a stick as “the head of the ecliptic dragon (transposed into a human face)” (Carboni 1997, 29).
15 Incense Burner with Pierced and Inlaid Design: material: brass and silver; date: late twelfth to early thirteenth century; place of production: Iran; acquisition date: 2002; museum number: M01202. This metalwork is one of the incense burners described by Nakatani, but its ornaments are not examined by her (Nakatani 1994, 131).
16 For the color plate, see http://www.metmuseum.org/art/collection/search/450513 (accessed August 31, 2016). Regarding the two types of Gemini sign, Rice states that one is Gemini with a staff surmounted by a disk, another is combined with the exaltation of the dragon’s head, which is later in time (Rice 1988, 19). Canby makes a reference to the head on a stick on this ewer and suggests that it may represent the pseudo-planet Jawzahr. “Gemini as two standing figures separated by a head on a stick, which should refer to Mercury [= its planetary lord] but may represent the pseudo-planet Jawzahr” (Canby 2016, 201).
(Fig. 5). As for the ewer, the facial expressions of the masks attached to the upper and lower part of the “stick” are indiscernible as the silver inlay is missing. However, the facial expression of the masks engraved with fragile lines on the inlaid silver of the Vaso Vescovalli is clear, and closely resembles that of the incense burner in Japan. On the incense burner, the upper mask with two small horns and the lower mask with two long horns or long ears have characteristic almond-shaped eyes and a big nose with a squared chin-line, and an inverted-V-shaped line has been added to the forehead. In all three works the two youths are holding a trunk-like stick (or staff) and with the other hand carrying a cloth-like long object.

Moreover, this type of peculiar mask on the incense burner (Fig. 7-b) also appears in the decoration of the ewer in the MMA; it appears above and below the zodiac signs as a component of the rinceau (Fig. 7-a). On the surface of the incense burner in each triangular space surrounded by decorative bands, another type of curious face is represented that seems to be preventing evil invading from the vacant space. The face (or mask) must have played the role of a special talisman against evil in those days. Thus this piece with its monstrous being depicted on the top of the stick together with the interspersed faces seems to have had a much more fundamental meaning as a talisman. One more detail worth mentioning in relation to the aforementioned incense burner relates to the representation of Sagittarius (Fig. 6). In this piece, the tail of the centaur does not end with a dragon’s head; rather it ends in the form of a normal horse-tail with tassel decoration. Curiously, a rabbit-like quadruped is mounted on the rump of the centaur and is looking backward. The centaur is also turning back and drawing his bow as if he is going to shoot something on his right side. The Sagittarius depicted on this incense burner is a unique and unusual image. Representations of Sagittarius are discussed in more detail next.

2. Representation of Sagittarius (al-Rāmī, or al-Qaws in Arabic)

One of the most important documents and the starting point of Western and Islamic astrology is Ptolemy’s Tetrabiblos. In the volume one, Ptolemy describes the “Power of the Fixed Star” and then discusses the figures in the zodiac. Ptolemy says of the stars in Sagittarius (Robbins 1980, 51):

…those in the point of his arrow have an effect like that of Mars and the Moon; those in the bow and the grip of his hand, like that of Jupiter and Mars; the cluster in his forehead, like that of the Sun and Mars; those in the cloak and his back, like that of Jupiter and, to a lesser degree, of Mercury; those in his feet, like that of Jupiter and Saturn; the quadrangle upon the tail, like that of Venus and, to a lesser degree, of Saturn. (Tetrabiblos I. 9, 25)

Generally speaking, Ptolemy’s two books, the Almagest and the Tetrabiblos had a great influence on Arabic and Persian astronomy and astrology. His statements are linked to the

17 Kuehn identifies these faces as the monster heads with long floppy ears, and insists that the heads are associated with fertility (Kuehn 2011, 141).
18 Greeks also learned a lot from Babylonian astrology, see Tester (1990). As for the manuscripts of Ptolemy’s Tetrabiblos, including its commentaries in Greek, Arabic, Syrian and Latin and their concordance, see Yamamoto 2007.
19 In the chapter 8 Ptolemy’s Almagest makes a list of the constellations and the stars forming each constellation, and indicates their exact locations. However, the concrete figure of each constellation is not explained there.
representation of the various constellations and the image of the signs. Therefore Sagittarius is pictured as a centaur preparing to shoot an arrow, and a mantle flies above and behind his shoulders. This is the standard feature of the constellation Sagittarius in astronomical books, for example in Kitāb ṣuwar al-kawākib (The Book of the Constellations) by ‘Abd al-Rahman al-Ṣūfī in the Bodleian Library (MS. Marsh 144 dated originally to C.E. 1009–10). Although the date of the production of its illustrations was revised to a much later period, overall the illustrations of the signs of the zodiac show similarities in the various copies of this manuscript, even if minor variations are noticeable in some images.

What is more, in volume two of the Tetrabiblos, Ptolemy places Sagittarius in the group of zodiac signs of winged creatures. However, Western painters ignored this categorization and based their depictions on the Greek myth that identifies Sagittarius as the centaur Chiron. The Sagittarius on the mīnāʾī bowl in Japan is depicted as a winged centaur with a tail ending in a large dragon head (Fig. 4). Like the other mythological animals in Seljuq art, in contrast to the description by Ptolemy, Sagittarius’s wing appears from the root of its foreleg.

As for the origin of the Islamic Sagittarius with a dragon head at the end of its tail, curiously Hartner presumes that the conjunct image of Sagittarius–Jawzahr has an ancient Babylonian prototype, namely “Pabilsag,” which he describes an archer-centaur fused with a scorpion-monster or a scorpion-tailed dragon monster (Hartner 1938, 149). Other researchers also have argued that Pabilsag is the prototype of the constellation Sagittarius, and that the image of the Babylonian Pabilsag itself is a chimera (composite animal) but has no connection with a dragon (White 2014, 204–209; Kondō 2010, 48–51).

Most of the astrological texts state very little about the shapes of the zodiac signs being based on their respective constellations. In the first place, astrology in the medieval Arabic and Persian worlds was close to astronomy. The astrologer studied the movements of the stars and the planets to understand how they would affect the daily activities, incidents and personalities of each person, to produce what are now generally known as horoscopes. Some astrological books or books including astrological verses such as Muʿnis al-ahrār fī daqāʾiq al-ashʿār mentioned above, include a figurative concordance of the signs with the ancient ecliptic legend, but in this case and others the text says nothing about the shape of the planetary lords or the signs. Thus, the lack of textual background has led Islamic art historians to take into consideration the ancient myths and models.

3. Descriptions by al-Bīrūnī and al-Ṭūsī
Abū Rayḥān Muhammad ibn Aḥmad al-Bīrūnī, known as the author of an encyclopedic work on India called Taʾrīkh al-Hind (History of India) was a Persian scholar and scientist. Al-Bīrūnī wrote many books on physics, mathematics, astronomy, and the natural sciences. One of them is
Kitāb al-tafhīm li-awā’il ʿināʾat al-tanjīm (The Book of Instruction in the Elements of the Art of Astrology) in which he describes Gemini and Sagittarius as follows (Yamamoto and Yano 2010, Section 159, 347; Wright 1934, Section 159, 170):22

- The third is Gemini; two boys standing erect, one of them has his arm round the other’s shoulder,
- The ninth is Sagittarius. The body to the neck part is a beast, and the torso of the human body goes out from the bottom of the neck of the beast from his waist. He has braided hair. He sets an arrow to the bow and draws it to its full extent.

There is nothing especially notable in the description; the conventional shapes are as described in Ptolemy’s book and as illustrated in al-Ṣūfī’s books.23 As a scientist, and like the other astronomers at that time in the Islamic world and Hindu India,24 he knew the cause of eclipses. Throughout his work his attitude toward ecliptic dragons is cynical, see for example Section 447 [444] (Yano 2013, 497; Wright 1934, 258–259):25

There is no difference of opinion as to the signs of exaltation, but the Hindus differ as to the degrees in certain cases. They are agreed that the exaltation of the Sun lies in 10° of Aries, of Jupiter in 5° of Cancer, of Saturn in 20° of Libra, the others as above, except with regard to the exaltation (āshrāf) of the ascending node [the dragon’s head] and the dejection of the descending node (hubūṭ) [the dragon’s tail], which are not mentioned by them in this connection as is quite proper.

As an astrologer, al-Bīrūnī provides details of eight planetary lords including Jawzahr even though he did not consider it to be a real planet. Moreover, in his History of India he adopts a critical attitude when mentioning ketu26:

The analogy of the comets shall be extended to other more remote subjects. The head of the Dragon is called rāhu, the tail ketu. The Hindus seldom speak of the tail, they only use the head. In general, all comets which appear in heaven are also called ketu.27

It is noteworthy that before the statements by al-Bīrūnī, Indian astronomer-astrologers seem

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22 The quotation is taken from Yamamoto and Yano (2010). The author of the current paper translated the text from Japanese into English referring to the sections in Wright (1934) with square brackets.
23 For some examples in the works of al-Ṣūfī, see the manuscript illustrations in the Bodleian Library (MS. Marsh 144, 272–273). With several rare exceptions, the constellation Sagittarius has been depicted as a centaur aiming a bow and arrow since ancient times (Carey 2001, 93).
24 The two main sects of Indian astronomers clearly mention the cause of the eclipses of the sun and the moon (Yano 1980, 133, note 304).
25 Yamamoto and Yano (2010) do not use the terms “dragon’s head” or “dragon’s tail.” Al-Bīrūnī’s original text uses the terms raʾs and dhunab here.
26 The quotation is from Sachau (1910, 2: 234).
27 In the esoteric Buddhism seven planets besides rāhu 羅睺 and ketu 計都 are divinized as Nava-graha (the nine deities) and worshiped (Yano 2004, 179–183).
not to have recognized ketu as the dragon’s tail or the dejection of the descending node (Markel 1990, 21). Around the time of al-Bīrūnī the head and tail of the dragon in the Islamic world were redesigned and their imagery intermingled with that of rāhu and ketu in India. Originally, the Indian rāhu and ketu did not have a connection with the image of an ecliptic dragon; only later, influenced by Western dragon-legends, did their images become combined with that of a dragon (Yano 2004, 108–109). The Brihatsamhitā written by Varāhamihira in the early sixth century seems to be the only Indian work in which the figure of rāhu is described as a snake [nāga] whose head and body are separated. However, ketu is not mentioned (Yano and Sugita 1995, 32; Kochhar 2010, 291). Based on the Pancha-Siddhāntika written by Varāhamihira in the sixth century, Pingree suggests that rāhu was connected with the crossing points of the orbit of the sun and the moon and called “the head and the tail of the celestial snake” (Pingree 1976, 148). However, in Pancha-Siddhāntika 6-2 and 7-5 (Thibaut and Dvivedi 2002, 50 and 55) only the connection between the crossing points and rāhu is mentioned; that between rāhu and the snake is not.28 In Indian art, the body of rāhu was not depicted as a snake (nāga). Although the lower body of ketu is similar to a snake, it overlaps the representation of the comet leaving a trail of light.29

Most scientist-astronomers like al-Bīrūnī recognized “the dragon’s head and tail” (raʾs wa dhanab al-tinnīn or al-jawzahr) as mere crossing points of the orbit of the sun and the moon. The head raʾs and the tail dhanab without the word al-jawzahr meant the crossing points of the orbit of the sun and the moon. The head raʾs and the tail dhanab were translated into Japanese as 羅睺 rāhu and 計都 ketu (Yano 1997, 34–35, 268; Kotyk 2016, 108) and were initially interpreted in Japan as the planet which causes eclipses and a comet, respectively (Yano 2004, 121).30 According to Tester (1987, 62), Western astrologers also adopted the idea of crossing or conjunction points, also known as “nodes,” and called them “the head and tail of the dragon” or “caput et cauda draconis.” By the time astrology had passed in its Arabic dress to the Western schools, caput and cauda had become “concrete bodies” and were treated in astrological thought as planets, given their exaltations and so on, and assigned their periods of influence. However, different from the countries that followed the Semitic lunar calendar, the head and tail of the dragon, caput et cauda draconis, i.e., the lunar nodes, had less importance in the Western world. In this context, Sagittarius in Western art was rarely depicted with the ecliptic dragon.31

Representations of the planets and constellations are seen also in books of cosmography, encyclopedic works about heaven and earth. The most famous cosmography is that of al-Qazwīnī, ʿAjāʾīb al-makhlūqāt wa-gharāʾīb al-mawjūdāt (Marvels of Creatures and the Strange Things in Existence). The oldest manuscript dated 1280 that was written by the author and other versions of the manuscript that are copies dating to the thirteenth and fourteenth century all lack illustrations of the signs of Gemini and Sagittarius (Carboni 2015, 149–150). Many illustrated copies of this

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28 The name of ketu is not described. The head and the tail of rāhu are identified as the crossing points.

29 For example, Hartner 1938, 125–125, figs. 6–9 and Markel 1990, figs. 1–20; Vishnudharmottara-Purana,(Shah 2005, 206), an encyclopedic Hindu text, includes the statement “black-snake ketu” (Gail 1980, 138). In this case ketu is not the tail of rāhu.

30 Later, ketu was identified as another planetary deity related to eclipses (Yano 2013, 179).

31 A Georgian treatise on astrology dated 1188 includes the Centaur-Sagittarius turning back to shoot at its own dragon-headed tail (Burchuladze 2012, 218); in this case his lower body is not a horse but a lion. The term “mushtari” in Arabic for “Jupiter” in this folio suggests that this book is influenced by an Arabic or Persian astrological book.
book made after the fifteenth century include those of the two signs. However, this current study considers the zodiacal images on a mīnāʾī bowl made in the late twelfth century or the early thirteenth century, so al-Qazwīnī’s book and versions thereof are not covered here.

However, Gemini and Sagittarius are covered in another early work\(^{32}\) of cosmography that includes depictions of constellations, namely the ‘Ajāʾīb al-makhlūqāt wa gharāyib al-mawjūdāt (Marvels of Creatures and the Strange Things in Existence) by Muḥammad b. Maḥmūd b. Aḥmad Ṭūsī, which was dedicated to the Seljuq ruler Ṭughril b. Arslān (r. 1175–94).

Ṭūsī mentions Gemini in a general way: “The figure of Gemini is a twin. They put their hands on the shoulder of the partner of each other” (Morikawa 2009, 437; Ṭūsī 1966, 25).\(^{33}\) Notably, as regards the sign of Sagittarius, Ṭūsī adds an interesting creature to his description, namely a snake: “The figure of Sagittarius is an archer who is going to shoot an arrow while looking back. In front of him, there is a snake (mār) lifting its tail high” (Morikawa 2009, 439; Ṭūsī 1966, 27).

The original manuscript written by Ṭūsī has been lost, and the extant illustrated manuscript from the fourteenth century\(^{34}\) visualizes his description of Sagittarius well (Fig. 8-a). This Jalāyirid manuscript illustration is reminiscent of the relief of the stone bridge near the Turkish frontier town of Cizre (Jazīrat ibn ‘Umar in Arabic) in north Jazīra, which depicts Sagittarius and the pseudo-planet Jawzahr (Fig. 8-b).\(^{35}\) This relief, which it is estimated was established in 1166, is one of the grounds on which Hartner bases his theory that the eighth planetary lord Jawzahr is visualized concretely as a snake and combined with Sagittarius by artists in Islamic world. He argues that the eight panels of the bridge suggest the eight planetary lords are related with specific signs of the zodiac, and considers that the eighth panel represents Sagittarius and Jawzahr.\(^{36}\)

In the relief, a Centaur-Sagittarius is going to shoot an arrow while looking back, and on his left side or in front of him is a huge coiled snake. The damage to the stone relief makes it impossible to identify the details. Even the inscription, “Jawzahr,” carved at the top of this panel between a snake and a centaur-archer can barely be read. However, it is clear that the snake, with its wide-open mouth seems not to be attached to the rump of the horse. The thick body of the snake (or dragon) ends at the left bottom corner.

These two figures in this stone relief are probably a primitive precursor of the later image of Sagittarius shooting a dragon on its tail that appears in the artworks of the Islamic world.

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\(^{32}\) A newly discovered cosmography, held by the Bodleian Library that was made in Egypt and dates to the eleventh century also includes descriptions of the two signs. Regarding Gemini, the writer mentions it only briefly: “it is human and voiced.” However, he describes Sagittarius more fully as a half human half fish compound: “…the shape of a man, composed of human half connected to a dolphin half, with hands and legs spread out.” The rendition is unusual. In the traditional Islamic iconography, Capricorn is pictured as a compound with a dolphin half. This book mentions that Capricorn is a goat with two whiskers (Rapoport and Savage-Smith 2013, 341, 346–347). Painters in the Islamic world did not depict “a dolphin-archer” for Sagittarius practically.

\(^{33}\) The translation by Morikawa (2009) is mainly based on the edition by Sotūde (Ṭūsī 1966). The latter Persian recension is mainly based on Fātih, No. 4173 in Istanbul, Süleymaniye Library dated A.H. 740/C.E. 1340.

\(^{34}\) MS. Persan 332, fol. 27r. dated 1388 in the Bibliothèque Nationale de France. The illustrations for this scene on Ṭūsī’s manuscripts made in sixteenth century are in a different style, i.e., a hybrid archer is shooting at a snake on its tail. See Moor (2010, 51 and figs. 18a–c).

\(^{35}\) The color images can be seen in Nicolle 2014. See also Hartner 1938, 114–115, 119, and fig. 2, and Preusser 1911, 26–28 and pl. 40.

\(^{36}\) Citing Herzfeld’s footnote (Herzfeld 1920, 138), Hartner assumes that the damaged inscription in question can be read “Jawzahr.”
4. Constellations: The Iconographic Tradition in the Islamic World

The fresco in the dome of Quṣayr ʿAmra in eastern Jordan, which was built early in the eighth century (Fowden 2004, 142–174) is the earliest known representation of the constellations on the inside of a spherical surface. First, the astronomer drew lines to divide the ceiling of the dome into 30-degree sections (Brunet et al. 1998, 97–123). Next, the artist-painter, not an astronomer, copied, apparently, a globe, not a chart; he appears to have used a “mirror-image” globe (Pogo 1933, 504–506) and, as a result of his lack of astronomical knowledge, this earliest known representation of the constellations on the inside of a spherical surface reverses the order of the constellations in the sky.

Then, later in the eighth century, another painter changed the posture of Sagittarius (Fig. 9). Saxl points out that the posture of Sagittarius is by no means an invention of the Islamic painter because it is also found on a late Carolingian ivory relief of the tenth century and in Occidental manuscripts. The garment flowing from his shoulders is traceable to genuine classical sources (in a copy of a manuscript by Ptolemy in the Vatican Library it is represented as an animal skin) does not flutter backward but, illogically, in the direction in which he is going (to the right) (Saxl 1979, 430). In a later period, Islamic artists changed this fluttering classical garment depicted at Quṣayr ʿAmra into an unraveling turban (Carey 2001, 98). However, despite being in the reverse, the original version of the star map in Quṣayr ʿAmra is astronomically accurate. The shapes of the constellations have significant meaning in this context. Each star has to be allotted to its appropriate location. Therefore, in the constellation of Sagittarius, the stars identified as the bow should not have had their positions changed.

The images of Sagittarius with a dragon-headed tail in the so-called “Parthian shot” pose that is depicted in Seljuq art are said to have resulted from astrologers placing importance on the talismanic meaning and discarding astronomical accuracy (Carey 2001, 96). However, it would appear that this change occurred even here at Quṣayr ʿAmra in the eighth century. Why did the artist change the posture of the archer so unnaturally? One reasonable answer would be the lack of a target animal for the archer. The reverse mirror-image in the fresco forces the hunter to change his targeted prey; however, the window next to him, which was installed in the dome in order to allow light to pass through into the caldarium, disturbs the archer’s line of sight away from Capricorn to another, the Scorpion.

The star map of Quṣayr ʿAmra reminds us that not only the Scorpion, but also the constellation of the Snake-Charmer (which is sometimes identified as one of the zodiac signs by some astrologers in modern times) is located near Sagittarius. The Snake-Charmer holds a snake held in front of the archer’s eyes. Moreover, dragons are clearly visible on the surface of several celestial globes and sky maps.

According to the Bundahishn, a work on cosmogony and cosmology completed in the ninth century in the Pahlavi language, the circumpolar constellation Draco is represented as the Persian gaw-chihr which is sometimes metaphorically applied to the Milky Way (MacKenzie 1964, 515, 525; Yano 2004, 106–108). However, the location of “the head and the tail of the constellation

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37 Codex. Vat. graec. 1291, which is a manuscript of a work by Ptolemy that dates to the beginning of the ninth century (Pogo 1933, 506).
Draco” does not accord with the crossing points of the orbit of the sun and the moon.

It is worth remarking in passing that, in Pahlavi, Gemini is dō-pahikar (two-figures) and Sagittarius is Nēmasp (Half-Horse, i.e., Centaur).

Physically, a dragon located near Sagittarius was more likely to become a targeted prey for the archer rather than a scorpion. Like the images of Sagittarius represented on the bridge in North Jazīra and in Ṭūsī’s manuscript illustration there is a possibility that the two were separate at first. It is likely that this assimilation of a dragon and a centaur-archer was an unconventional invention by the Islamic artist. Slaying an evil dragon was a status symbol of a hero and of royalty in Persian myths like Shāhnāma (The Book of Kings) (Yamanlar 1992, 203–212; Kuehn 2011, 111–129; Daneshvari 2011, 47–54). Such a cultural background in Iran could have promoted the establishment of a new iconography, i.e., an archer-centaur shooting at a dragon’s head on its tail. Indeed, the idea of the evil dragon was coupled with an ecliptic dragon in terms of meaning.

From a compositional point of view, the posture of the centaur looking back to shoot at an animal brings a sense of stability in an enclosed roundel. The Parthian shot pose without a targeted animal was used repeatedly by Christian artists in the twelfth century, and can be seen for instance in in the ornamentation of the tympanums of Romanesque basilicas such at St Magdalene in Vézelay, St-Lazare in Autun and St-Lazare in Avalon in France and in an illustration of the Psalter dated to circa 1170 and held by Glasgow University Library (MS. Hunter 229, fol. 6r.) (Thorpe 1983), which also demonstrates the stability of this composition in a roundel.

It is also the case that in the Seljuq period in Iran, the Parthian shot had a strong relationship with royalty, which was derived from Sassanian art. Such a cultural milieu promoted the creation of a new hunting scene in the zodiac, and so the ex-nomadic Islamic rulers would have required the artist to add a targeted animal.

The variety in the depictions of zodiac figures suggests that artists in the twelfth century sought new emblems suited to their purpose from several sources. In Ṭūsī’s Kitāb-i Šuwar al-Falakī (The Book of the Image of Heaven) he says: “The above is the aspect of the signs of the zodiac mentioned by the past wise men and written in the ancient books” (Morikawa 2009, 441). Considering the circumstances in the twelfth century, The Book of the Image of Heaven seems to be equal to The Book of Constellations by al-Ṣūfī. However, as Morikawa suggests, it is possible that another canonical book existed.

IV. Conclusion

The fragmentary mīnāʾī bowl in Japan and the lusterware bowl in Boston as well as several metalwork objects created in Iran in the late twelfth to early thirteenth century were gifts for a ruler or a prince. Their inscriptions are filled with words praying for the wealth and luck of the owner or praising the glory of the ruler and his kingdom.

38 The influence of Sassanian art on the depiction of the figure of the archer, with or without his dragon tail, has been pointed out for instance by Wellesz (1959, 6). In ancient Sassanian art, the royal hunting scene was the symbol of the throne of the emperor.

39 Kitāb Šuwar al-Kawākib (al-Thābita) means The Book of Pictures of the (Fixed) Stars. That is why we can assume that this book by al-Ṣūfī was a canonical book for scholars and artists. See note 23 in Morikawa (2009, 410): “The book (Kitāb-i Šuwar al-Falakī) seems to be the book written by al-Ṣūfī; however, some anecdotes are different from Ṭūsī’s statements. That is why there is a possibility that another canonical book existed.”
Moreover, as Allan (1999, 49) points out, the ornaments of the planets or signs of zodiac on the inlaid metalwork function as protection against evil.40

The painter of the mīnāʾī bowl in Japan intentionally depicted the signs of the zodiac so the bowl would act as a talisman against evil. The dragon slayer Sagittarius is a depiction of the symbol of royalty which is suitable for the bowl’s dedicatee, the ruler. The coins of the Artuqid kings that depict Sagittarius have the same iconography.41 The meaning is the same as that of the mīnāʾī bowl.

Sagittarius’s counterpart on the bowl is Gemini with its snake-like lower half, which seems to have little connection with the evil ecliptic monster. Rather the sign acts as a mere crossing point. The two youths are standing with a lance in the classical style, which shows that the artist had some knowledge of astronomy or astrology and that he transformed the prototype of Late Antiquity, i.e., two standing soldiers holding weapons.42

It was in the twelfth century that the images of the planets and zodiac developed in the Iranian and Anatolian world. The variety in the depictions of the two zodiac signs suggests that artists tried to establish standard representations for these images from various sources and especially to incorporate Iranian elements. Also, sometimes artistic convenience in a roundel space was prioritized rather than the conventional composition derived from that of Late Antiquity. The theory that there is an apotropaic and magical background to these objects has also started to gain attention (Canby 2016, 222; Destombes 2012, 196–198). However, investigating the meaning of another type of Gemini or zodiac iconography such as that depicted on the incense burner that is related to the use of talismans in Islamic countries will be a task to undertake in the future.

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With permission of the Middle Eastern Culture Center in Japan: Figs. 1–4 (Inv. No. M00286, photograph by the author); Figs. 5–6 (Inv. No. M01202, photograph by the author), Photograph courtesy of Naoko Fukami: Fig. 9.

40 The brass ewer with the designs of the planets and signs of the zodiac dated 1181–82 preserved in the Georgian State Museum, Tbilisi, Georgia has an inscription: “Seven heavenly bodies, however proud they may be, are protection for the one who works so” (Loukonine and Ivanov 2003, 116–117, no. 117; Allan 1982; Kuehn 2011, 141).

41 The coins of Nāṣir al-Dīn Artuq Arslān (r. 1201–39) include the designs of the centaur-archer turning back and facing a dragon on his tail. Not only Sagittarius but other zodiac signs and planetary lords were visualized on his coins (Spengler and Sayles 1992, 122–126; Kuehn 2011, 133–144).

42 For example, Gemini is depicted in a manuscript illustration of the ninth century as two standing youths each with a lance in their hand. Biblioteca Apostolica Vaticana, Rome, Vat. gr. 1291, fol. 9 (“Handy Tables” of Ptolemy).
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Fig. 1: Fragmentary Mināʾī Bowl with Zodiac Design in the Middle Eastern Culture Center in Japan

Fig. 2: Inscriptions of Part 2 (Reverse of Taurus, Gemini and Cancer) in Fragmentary Mināʾī Bowl with Zodiac Design in the Middle Eastern Culture Center in Japan
Fragmentary Polychrome Mīnāʾī Bowl with Zodiac Design

Fig. 3: Gemini in Fragmentary Mīnāʾī Bowl in the Middle Eastern Culture Center in Japan

Fig. 4: Sagittarius in Fragmentary Mīnāʾī Bowl in the Middle Eastern Culture Center in Japan

Fig. 5: Gemini in Incense Burner in the Middle Eastern Culture Center in Japan, Seljuq Period

Fig. 6: Sagittarius in Incense Burner in the Middle Eastern Culture Center in Japan, Seljuq Period

Fig. 7: Monstrous Faces Related to the Zodiac Signs
a. Face or Mask as a Component of the Rinceau in Brass Ewer, Dated ca. 1180–1210, in the Metropolitan Museum of Art in New York.
b. Face or Mask on the Top of the Trunk-like Thing in Incense Burner in the Middle Eastern Culture Center in Japan.
**Fig. 8: Sagittarius with a Snake**

a. Sagittarius with a Snake in MS. Persan 332, fol. 27r. Dated 1388 in the Bibliothèque Nationale de France.
b. Sagittarius with a Snake on a Relief of Stone Bridge at Jazīrat ibn ‘Umar in North Jazīra, 1166.

**Fig. 9: Sagittarius on the Fresco in the Dome of Quṣayr ‘Amra in Caldarium in Eastern Jordan, Early in the Eighth Century**