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Leonardo, Volume 29, Number 2, April 1996, pp. 145-150 (Article)

Published by The MIT Press



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SYMBOLISM IN ISLAM

Islamic art, including music, is deeply symbolic. It contains a code of symbols that reflects and explains the totality of the cosmos and the essence of God. The symbols are used as a way of explaining the unexplainable. Much Islamic symbolism developed under the direct impetus of Greek philosophy and scholarship. Many of its elements, however, can be traced back even further to the beliefs of the ancient Egyptians, Sumerians, Chaldeans and Manicheans. These beliefs were incorporated into Greek thought and gained authority and acceptance within Islamic philosophy and scholarship.

Early Islamic philosophy and scholarship developed in the centers of the Omayyad (661–750 A.D.) and Abbasid (750–1258 A.D.) empires, such as Damascus, Baghdad and Kufa.

Muslim Arabs first had contact with the Hellenistic world in the early days of Islam, during the reign of the first dynasty of the Omayyads, whose capital was established in Damascus, the former seat of the Byzantine governors. During the rule of this dynasty, Islamic armies conquered a large amount of territory, from the Iberian peninsula to the Eastern Turkestan (Xinjiang). Some of this land was populated by Greeks or by Hellenized Christians. During this conquest, the Muslims came into possession of a number of philosophical and scientific works by such writers as Pythagoras, Aristotele, Aristoxenes and Plato. Muslim rulers quickly recognized the value of these works and collected a large number of manuscripts for their libraries. Interest in Greek writings continued under the Abbasids, and in the eighth century the *Bait al-Hikma* (House of Wisdom) was established in Kufa and Baghdad to function as an astronomical observatory and house of translation. There the best minds from all over the empire translated the works of the Greeks into Arabic (either directly from Greek or through Aramaic). Thanks to the introduction of paper from China, books were copied in large numbers and disseminated to the major centers of the empire. Soon, local and provincial rulers established their own libraries (*Dar al-Hikma* or *Dar al-'Ilm*, the House of Science) in cities such as Cairo, Toledo, Bukhara and Samarkand.

These Greek works in Muslim libraries inspired the development of Islamic philosophy and science. What started as translations of the works led to commentaries and, eventually, to independent scholarship in mathematics, alchemy, medicine, philosophy, geometry, music and other disciplines.

The first major influence was that of Plato. His was essentially a theory of ideas—that truth is eternal and can be recognized by humans in themselves. The reality of the world is a reflection of ideas and constitutes the entire truth. For the Platonists, the most important factor in the understanding of

nature was the idea of numbers. Mathematics represented pure, absolute truth, in its most beautiful form. This idea was broadly accepted by Muslim philosophers and applied to all fields, including the arts, regardless of medium.

Equally strong was the influence of the Pythagoreans and Neo-Pythagoreans. Like the Platonists, they gave importance to the role of numbers in explaining nature, but developed a philosophy that gave numbers an esoteric significance. This philosophy developed into a philosophy of arithmetic and arithmology. By attributing alchemical and magical values to numbers, arithmology attempted to explain metaphysics and theology. This idea was applied to a variety of fields, such as astrology, alchemy and medicine, and had a profound influence on the development of the Muslim worldview. It especially influenced the gnostic branches of Islam: *Shi'a* and *sufism*.

Numerology became an essential part of the entire *sufi* movement, in which esoteric and hermetic secret knowledge could be passed on only through gradual initiation. Numerology is best explained in the encyclopedic work of the tenth century by the Ikhwan as-Safa' (the Brotherhood of Purity), which is a synthesis of Platonic, Pythagorean, Neo-Pythagorean and gnostic ideas.

This significance of numbers can be summarized as follows [1]:

- One symbolizes the Creator: one, eternal, indivisible, unchangeable.
- Two symbolizes Intellect (*'aql*). It allows for pairs of opposites (light/darkness, good/bad, form/matter, spirit/body, etc.).
- Three symbolizes the Soul (*nafs*).
- Four symbolizes Matter (*hayyula*). It has mathematical completeness. It contains all numbers that add up to the decade ($1 + 2 + 3 + 4 = 10$), the base of the entire decimal system. It is a perfect number.
- Five symbolizes Nature (*tabi'ah*).
- Six symbolizes the Body (*jism*).
- Seven represents the seven planets.

ABSTRACT

In the Muslim world, the relationship between music and astronomy can be seen on two levels. On one level, the connection is indirect, involving an underlying system of symbolism in numbers, proportions and geometric figures that penetrates most areas of Islamic art and scholarship, such as mathematics, geometry, alchemy and medicine. It can be understood as a unifying element within Islamic culture. On another level, the connection between music and astronomy is direct, with astronomical concepts directly applied to music and some musical concepts applied to astronomy. In both cases the relationship can be understood only in the context of the Islamic culture, its philosophy and art.

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Originally presented at the conference "The Inspiration of Astronomical Phenomena," Villa Mondo Migliore, Rocca di Papa, Italy, 27 June–2 July 1994.

- Eight represents eight qualities (actually four qualities combined two by two with four elements): Earth: cold and dry; Water: cold and wet; Air: warm and wet; Fire: warm and dry).
- Nine represents Beings, such as minerals, plants and animals.

This hierarchical model contains an analogy to the Islamic model of the cosmos represented in astronomical categories. In this model, the Earth is at the center, surrounded by nine concentric spheres: seven spheres of planets (the moon, Mercury, Venus, Sun, Mars, Jupiter, Saturn), an eighth sphere of fixed stars, and a ninth, outer sphere (*muhit*) of the Zodiac. At the bottom of the hierarchy is the Earth, on which everything is organized in tetrads (elements, seasons, winds, cardinal directions, fluids in the human body, etc.); at the top is the Zodiac, with its numerical value of 12.

Between the Zodiac and the Earth there are seven planets, with the spiritual power to change matter within their domains. Seven is also a perfect number. Seven is connected to the Moon, the female aspect, and is opposed to the Sun, which is masculine. In the cosmological model, the female Moon is closest to the Earth and is an intermediary between the Earth and all other spheres, including the Zodiac. Seven is the symbol of the Universal Man, himself the archetype of the Universe [2]. Among the numbers, the "most noble" are 4, 7, 9, 12 and 28. These numbers either correspond to the "most noble beings" (4 = the number of tetrads; 7 = planets; 9 = *muhit*; 12 = the Zodiac; 28 = number of mansions of the Moon) and are unique because they can be generated by the arithmetical operations that use the numbers associated with those noble beings ($7 = 3 + 4$; $12 = 3 \times 4$; $28 = 7 \times 4$ or $7 + 9 + 12$).

The numerical implications in mathematics, astronomy, geometry and alchemy are perhaps easier to understand. Those in the arts are more difficult. Although it is beyond the scope of this paper to mention all the ways that numerical symbolism is reflected in the arts, I will mention a few aspects.

LITERATURE

In literature, the mystical and numerological connections are very strong. The Arabic alphabet has 28 letters, corresponding to the number of mansions of the Moon, which could be interpreted as the sum of 7 (planets), 9 (spheres of the universe), and 12 (Zodiac constella-

tions), as well as the result of the multiplication 7×4 . This number supports the idea of its perfection as the alphabet of Qur'an.

Sufi poetry, especially that of Persia, is full of the imagery of terrestrial and sensual love and the drinking of wine (in Islam a forbidden drink). It can be read on several levels. To the uninitiated reader, a text may appear to deal with earthly matters of human relationships and love. To a *sufi*, the same text can have a different meaning, referring to the relationship between man and God. Love, wine and intoxication represent the love of man for God and the rapture of mystical union with God, as in the beginning of this poem by Hafiz:

*Saqiya barkhiz-o-darde jamra
Khak bar sarkun ghame ayyamra
Sagar-e-mey bar kafam ne ta ze bar
Bar kasham in dalq-e-azraq jam ra
Garche badnamist nazde 'aqilan
Ma name khwahim nango namra*

Oh, wine bearer, stand up and pour
the wine into my cup
Throw dirt on the sorrows of days
Bring me the cup of wine and you will
see
How I will take off my blue garb
If doing so in front of the wise man is
bad
Then we do not need honor or respect
[3]

The true meaning of the poem, hidden to the uninitiated reader, can be understood from the numerical symbolism of the individual letters of the alphabet. The numerical interpretation of Arabic words can be seen in the example of the word *sufi*. Four letters of this word: *Sad*, *Waw*, *Fa* and *Ya* have the numerical equivalents of 90, 6, 80 and 10. The sum of those numbers is 186. 186 is also the sum of 100, 80 and 6, numbers that correspond to the letters *Qaf*, *Fa* and *Waw*. These three letters form the Arabic word *FUQ*, meaning "above" or "transcending." Sufism is thus meant to be a transcendent philosophy [4].

Numerology, a science of the numerical symbolism of letters (*'ilm al-jaf*), gave birth to the so-called *balabailan* language. Schimmel [5] said that *sufi* poetry cannot be fully understood and enjoyed without knowledge of the numerical meaning of the letters.

THE ART OF MINIATURE PAINTING

The symbolism of numbers in Islamic miniature paintings is related to the symbolism of geometrical figures and

cosmological models. Papadopoulos discovered that in the miniatures of Persia and India from the thirteenth century on, space is organized in such a way that the most important elements of the paintings, such as figures, faces and/or hands, are placed so that they can be connected by a spiral or arabesque. Sometimes two paintings placed on opposite pages of a book create a spiral together. Sometimes figures are placed behind mountains to complete the curve of the spiral [6].

The spiral represents descending and diminishing series of circles, parallel to the circles (spheres) of heaven, which become smaller as they approach the Earth [7]. It is thus a model of the cosmos, but it also has other esoteric significance. It represents the arc of descent from God to man and the arc of ascent from man to God, which is so prominent in the shi'a [8]. It symbolized the "Great South Wind," or "Whirlwind," known to both Christian and Muslim gnostics. It symbolizes the circumambulation (of Ka'ba) of a sanctuary and entering it. It represents the alchemical *Opus* [9]. It is associated with the vine and, through it, intoxication (in sufism, the entrance to the state of ecstasy, the motive strongly visible in the *sufi* poetry). As Papadopoulos said, "The spiral became in a real sense the materialization of esoterism, the secret mandala organizing at one and the same time universe and art" [10].

ARCHITECTURE

In architecture, which is intimately related to geometry, the forms of some edifices are the representations of cosmic models. Some minarets are built in the form of a spiral—for example, the minaret of the Great Mosque, the Mawliya, in Samarra.

In other mosques, the spirals are incorporated inside the minarets in the form of multiple staircases, invisible from the outside.

Many Muslim mausoleums and tombs of the *marabouts*, *sufi* saints, in North Africa are built in a form of a cube with a cupola in the shape of the half-sphere. The base of the cube of the building is a square representing the earth, with four seasons and four cardinal directions. It represents terrestrial life. In the upper part the symbolism is intensified by interlocked squares—that is, octagons. The structure is topped with the dome. Based on the circle, it represents the celestial aspect of the universe, the firma-

ment, heaven, an eternity. The structure is thus a visual representation of the transition from the temporary, terrestrial life to the eternal, celestial one [11]. Examples of such structures can be seen in numerous mausoleums in old Cairo and in the mausoleum of the Samanids, in Bukhara, in the ninth and tenth centuries A.D.

Similar symbolism can be observed in the structures of many mosques, *tekkes* (sufi meeting places), *madrassas* (religious schools) and other religious edifices.

MUSIC

The relationship between astronomical phenomena and music can be seen on the two levels mentioned earlier, the indirect symbolic one and the direct one involving the application of astronomical concepts to music and musical concepts to astronomy. Often both levels appear simultaneously.

The application of the symbolic model of the universe to music is best presented in the *Risala fi'l-Musiqi* (Epistle on Music) of the Ikhwan as-Safa'. In the opening of the preface the Ikhwan wrote:

We propose in this Epistle called "Music," to study the art which is constituted at one and the same time of the corporeal and the spiritual. This is the art of harmony (*ta'rif*) which can be defined in terms of proportions [12].

In the Islamic *Ilm al-Musiqi* (Science of Music), from the time of early theorists al-Kindi (ninth century A.D.) and al-Farabi (tenth century A.D.), the lute, *al-'ud*, was considered to be the most noble, perfect instrument and best-suited for the theoretical explanation of music. Although early writers do not provide an explanation for the reasons behind such an exalted position of this instrument, the Ikhwan as-Safa' provide us with such an explanation. In their *Risala fi'l-Musiqi* they wrote:

At all events the instrument closest to perfection to have been invented by the philosophers and the best that they have made is that called *ud* [13].

They continue:

We say then that the people of this art maintained that the instrument called *ud* should be made of wood, and that its length, breadth and depth should be in a noble proportion to each other, that is to say, that its length should be in the proportion of 3:2 with its breadth; its depth should be equivalent to half its breadth and its neck should be one quarter of the total length of the instrument. . . . Then one chooses

four strings, each thicker than the one before. Their respective thickness should be in noble proportion to each other, that is, the thickness of the fourth string (*bamm*) should be in the proportion of 4:3 with the third string (*mathlath*); the thickness of the third string in the proportion of 4:3 with the second string (*mathna*); the thickness of the second string in the proportion of 4:3 with the first string (*zir*). The fourth string should be composed of 64 silk threads, the third of 48, the second of 36 and the first of 27 [14].

The four strings of the lute are tuned in the interval of the fourth, thus in the ratio of 4:3. The frets of the lute divide the length of each string in the ratios 2:1, 3:2, 4:3, 5:4, and 9:8, thus providing the principal intervals of the octave, fifth, fourth, third and second.

The proportion of the instrument, the tuning of its strings and the intervals produced were seen as the musical reflection of a universal order; these qualities were the reason that the instrument was considered perfect and given its noble status.

This universal order was also seen in the nine cosmic spheres. The diameters of the nine cosmic spheres, the Earth and the sphere of air were given numerical values. The proportions (ratios) between some of those values—those of Earth and the spheres of air, Moon, Venus, Sun, Jupiter and the Fixed Stars—correspond to the proportions (ratios) of harmonic (perfect) musical intervals (Table 1). The proportions of others—those of Mercury, Mars and Saturn—do not [15].

The Ikhwan as-Safa' find similar proportions in the rhythms and continue:

Now, that these meanings contained in the notes and the melodies reach the hearing, human nature takes delight in

them, the soul finds pleasure and the spirit rejoices, for the said movements and rests which separate the notes then became the measure and quality of time. They thus imitate the continuous and harmonious movement of the celestial beings. In effect, the movements of the heavenly bodies and spheres are also the measure of and quantity of time. If one establishes the measure of (musical) time by regular, harmonious and proportionate succession of motions and silences, the notes resulting will be comparable to the notes produced by the movements of the spheres and the heavenly bodies and will be in concordance with them [16].

The Ikhwan also argue that the correspondence of the proportion of the musical intervals with the proportions of the spheres make them audible to the inhabitants of the spheres and thus show the direct application of the musical ideas to astronomical models. They write:

[The celestial bodies] touch, brush against each other, rub and resound as iron and copper resound. Their notes are concordant and harmonious, their melodies are well balanced. We have shown their symbolic correspondences in speaking of notes produced on the strings of the lute and their proportions [17].

And continue:

It clearly emerges from what we have expounded that the movements of the spheres and heavenly bodies produce rhythms and melodies that are sweet and rejoice the souls of their inhabitants, that these rhythms and melodies remind the souls of non-composite bodies inhabiting the spheres of the beatitude of the world of the spirits which is above the spheres and whose substances are more noble than those of the world of the spheres [18].

The mystical, esoteric and symbolic aspects of music are also incorporated in

Table 1. The correspondence of the ratios between the diameters of the Earth and some of the spheres to the ratios of musical intervals.

SPHERES	RATIO	INTERVAL
Earth - Moon	3:2	fifth
Moon - Air	4:3	fourth
Venus - Earth	16:8 (2:1)	octave
Venus - Moon	4:3	fourth
Sun - Air	18:9 (2:1)	octave
Sun - Moon	3:2	fifth
Jupiter - Moon	24:12 (2:1)	octave
Jupiter - Earth	24:8 (3:1)	octave and a fifth
Sun - Venus	24:16 (3:2)	fifth
Fixed Stars - Jupiter	32:24 (3:2)	fifth
Fixed Stars - Venus	32:16 (2:1)	octave
Fixed Stars - Earth	32:8 (4:1)	two octaves

ilm al-musiqi (the science of music, or music theory). *Ilm al-musiqi* originated in the ninth century. It also developed under the stimulus of Greek philosophy and scholarship. From the ninth century on, there was a steady stream of theorists who worked in all parts of the Islamic world, from Muslim Spain to Central Asia. Music theory dealt with the technical aspects of the music—that is, the structure of the melodic modes (what later was named *maqam*: a concept similar to the Western concept of major and minor tonalities), the structure of the rhythmic modes (*iqā'a*), the rules of composition of melodies and musical instruments—as well as the extramusical association.

One of the most important early authors was al-Farabi (872–950 A.D.).

Known in Europe as Alfarabius, he was the first Muslim scholar of truly renaissance profile who grasped the totality of the knowledge of the period. He was the author of works on philosophy (he was recognized as *al-failasuf* [mu'allim] *ath-thani*, the second philosopher [scholar], after Aristoteles), mathematics, alchemy, medicine and astronomy. His work on music, *Kitāb al-Musiqi al-Kabir* (the Great Book on Music), is perhaps the most important work on the subject. The core of the book consists of a discussion of intervals, their mathematical ratios, the degree of their perfection or consonance and the construction of the modes within the framework of the Pythagorean *Great Perfect System*. Although al-Farabi does not explain his theory in terms of numerical symbolism,

much of the material—especially the relationship of the mathematical ratios of the musical intervals to the degree of consonance, with the intervals with the ratios of 2:1 (octave), 3:2 (fifth), 4:3 (fourth) being the most perfect—could be interpreted in that way.

The first treatise that organizes the musical modes in the duodecimal system is a little-known treatise by Muhammad Nishapuri (12–13 c. A.D.) *Risala dar 'Ilm-e-Musiqi* in Persian-Tajik language [19]. The system was later presented in the well-known *Kitāb al-Aduwar* of Safi ad-Din 'Abd al-Mu'min (ca. 1258 A.D.). It stops short of the association of these modes with the extramusical phenomena. However, from the fifteenth century on, such associations began to appear in numerous writings. The example is the *ar-Risala al-Fathiya* (Epistle of Victory) by Muhammad Ibn 'Abd al-Hamid al-Ladhiqi (15–16 c. A.D.). In this work, al-Ladhiqi writes that the oldest musicians of modern times attributed to some modes the name *maqam*; to others, *avaz*; and still to others, *shu'ba*—and that these musicians had observed certain ideal relationships between the *maqam*-s, Zodiac constellations and the elements, between *avaz*-s, the planets and the elements, and the *shu'ba*-s and the elements [20] (Table 2). The *maqam*-s are divided into three groups. Within a group, each *maqam* is associated with a different element [21].

This modal system shows the direct application of astronomical concepts to music. Aside from providing the extramusical—especially astronomical—association, the system is also numerically significant, featuring the numbers 12, 7, 4, and 3, the numbers particularly important in Islamic numerology.

Djumaev, an Uzbek scholar, suggests on the basis of a unique manuscript from the eleventh century by Nishapuri that this system of 12 *maqam*-s is a result of the transformation of the pre-Islamic Persian system of seven modes, *pardes*, associated with the seven planets into the 12-mode system associated with the Zodiac [22]. The system of al-Ladhiqi actually presents the combination of both systems.

Subsequent writers continue to complete the system, associating the modes with elements, cardinal directions, human body fluids, utterances of the prophets or animal sounds, assigning them appropriate times for their performance and ascribing to them therapeutic properties, thus creating the system of ethos connecting music with the cos-

Table 2. Association of musical modes (*maqam*-s, *avaz*-s and *shu'ba*-s) with the Zodiac, planets and elements, after al-Ladhiqi.

MAQĀM-s		
Maqām	Zodiac	Element
1. <i>Rāst</i>	Aries	fire
2. <i>'Irāq</i>	Taurus	earth
3. <i>Isfahān</i>	Gemini	air
4. <i>Zīrāfkand</i>	Cancer	water
5. <i>Buzurg</i>	Leo	fire
6. <i>Zengūlah</i>	Virgo	earth
7. <i>Rahāwī</i>	Libra	air
8. <i>Husainī</i>	Scorpio	water
9. <i>Hijāzī</i>	Sagittarius	fire
10. <i>Abū Salīk</i>	Capricorn	earth
11. <i>Nawā</i>	Aquarius	air
12. <i>'Ushshāq</i>	Pisces	water
AVĀZ-s		
Avāz	Planet	Element
1. <i>Gawasht</i>	Saturn	earth
2. <i>Nāw Rūz</i>	Jupiter	fire
3. <i>Salmak</i>	Mars	fire
4. <i>Shāhnāz</i>	Sun	fire
5. <i>Hīsār</i>	Venus	water
6. <i>Gardāniyā</i>	Mercury	mixed temperaments
7. <i>Māyah</i>	Moon	air
SHU'BA-s		
Shu'ba		Element
1. <i>Yakgāh</i>		water
2. <i>Dūgāh</i>		air
3. <i>Sahgāh</i>		earth
4. <i>Chahārgāh</i>		fire

mos. The selection of music in particular modes performed in appropriate manners at the appropriate time assures the proper harmony with the universe. This harmony is beneficial to listeners and is the basis for the therapeutic properties of specific musical modes, *maqam*s. The therapeutic properties of music were recognized widely. In Turkey, Morocco and other places, both in the past and at present, hospitals prescribe the listening of music to patients as part of their treatment [23].

Theoretical treatises on music were generated in all parts of the Islamic world, from Morocco to Central Asia (Bukhara, Samarqand, Kashmir and other places). Some elements of the systems presented in these treatises were developed in the centers of the Islamic world and spread to the peripheries; others developed in the peripheries and later were accepted in the centers. The treatises often underwent various changes and sometimes acquired elements of systems from surrounding cultures—for example, systems developed in Kashmir absorbed some Indic elements.

In the central part of the Islamic world (Turkey, Egypt, Iraq), the development of music theory emphasized the technical aspects of music—the problems of scale, mode, rhythm and composition. Mystical aspects were disappearing gradually from the mainstream of theoretical treatises. In the peripheries, especially in Central Asia, the situation was reversed. After the seventeenth century, perhaps as a result of a diminishing of the general level of musical literacy during a difficult historical period, the treatment of the technical aspects of music had disappeared, while the extramusical association of music remained. In places such as Kashmir, theoretical treatises emphasizing the classification of the modes and their association with the Zodiac constellations, utterances of the prophets, sounds of objects and animal voices continue to be written today—for example, *Ramuz-e-Musiqi* of Sheikh Abdul Aziz of Kashmir.

Table 3 illustrates the summary of the system of Aziz.

Much work needs to be done to establish the extent to which extramusical associations of music have been and are known to music practitioners. The level of literacy of musicians varies greatly throughout the vast area of Islamic countries. The education of musicians has shifted from traditional oral transmission to more systematized conservatory training. In places where conserva-

tory training dominates, musicians are only vaguely aware that such associations had existed in the past. The younger generation of Egyptian musicians, although capable of reading theoretical treatises on music in Arabic, are generally unaware of the ethos. A similar situation exists in Turkey.

There are two questions to which currently I can give only fragmentary answers:

1. To what extent are the symbolic and specifically astronomical associations in music consciously applied to the variety of musical performances and recognized as such by the practitioners?

2. To what extent are the symbols encoded in musical structure, perhaps without being recognized as such by the carriers of the traditions?

The awareness of extramusical associations of music is greater among musicians associated with the *sufi* movement. Throughout history in many places within the Islamic world, the *sufi*s were the main supporters of music. While the Islamic legal orthodoxy was generally unsympathetic to music, considering it to be one of the *malahi* (forbidden pleasures), the *sufi*s actually used music and dance as a part of their ritual and as a means to achieve ecstasy. Consequently, many musical genres, including some classical traditions, were developed within *sufi* circles. For example, in Turkey a branch of the classical Turkish music *sanat musikasi* was developed within the circles of the Mevlevi-s, the so-called “Whirling Dervishes.” Similarly, much of the Persian classical tradition that exists today as the *dastgah* system was developed within *sufi* circles and was associated with *sufi* mystical poetry, as was the Kashmiri classical tradition *sufyana musiqi* (*sufi* music).

The Mevlevi ritual begins with the *naat Mevlana* (hymn to the Mevlana Jelal

ed-Din Rumi, founder of the order and a poet), *taqsim* (instrumental prelude) and *peshrev* (orchestral piece). The core of the ritual is a *sema* section with four *salam*-s (salutations), in which the dervishes, with the accompaniment of a classical music ensemble, perform a “dance.” After greeting the sheikh, they begin to rotate, whirling with the outstretched arms around their own axis, at the same time encircling the space in a counterclockwise direction. It is understood, at least among some practitioners, that the dance represents the movement of celestial bodies with which the dervishes, through the dance, identify themselves. In the fourth *salam*, the sheikh joins the dervishes and whirls in the center of the circle of the brothers, in a position similar to Earth (or the sun) in the cosmological system.

Similar symbolism can be seen in the ritual of another Turkish brotherhood, that of the Jerrahi-Halveti. There, during the ritual dance, the concentric circles of dervishes move around the sheikh, who stands in the center of the circle. Here also some of the dervishes interpret this dance as a representation of celestial bodies.

It is perhaps more difficult to determine the extent cosmological symbolism is present in musical structure. During the formative period, some stylistic features of specific genres could have been consciously developed in concordance with the symbolic system. Transmitted orally, the symbolic significance may have been lost while the stylistic elements were preserved. A number of ethnomusicologists have searched for such hidden symbolism. I will mention here the research done by Slawomira Zeranska-Kominek of the University of Warsaw [24]. She has analyzed the structure of the instrumental sections of the Tajik-Uzbek *shashmaqam* tradition. She

Table 3. Extramusical associations of *maqam*s in *Ramuz-e-Musiqi* by Aziz.

MAQAM	ZODIAC	VOICE	PROPHET	DISEASE
1. <i>‘Ushshāq</i>	Scorpio	cock	Mūsa	smelly winds
2. <i>Navā</i>	Aquarius	nightingale		sciatica
3. <i>‘Arāq</i>	Gemini	cow	Yaqūb	cooling the heat
4. <i>Hijāz</i>	Virgo	<i>alaq</i> bird	Ībrāhīm	ear and left side pain
5. <i>Ḥusaynī</i>	Sagittarius	horse	Da‘ūd	fever
6. <i>Būsālīk</i>	Libra	lioness	Yūnis	headache
7. <i>Zengāda</i>	Capricorn	camel		tick of the face and diarrhea
8. <i>Isfahān</i>	Taurus	goat	Yūsuf	influenza and headache
9. <i>Rāst</i>	Aries	elephant	Adam	paralysis
10. <i>Rahāvī</i>	Pisces	crow	Muhammad	kidneys
11. <i>Kāchak</i>	Cancer	infant cry		heat of the heart
12. <i>Buzurg</i>	Leo	<i>chakur</i> bird		intestines

noticed that the individual phrases (*khona*) of these sections became increasingly longer and that their range was increasingly expanded. She was able to quantify the data and find that the mathematical algorithm underlying this expansion corresponds to those of some spirals. I do not know whether the spirality of the form is understood by the carriers of the tradition as the representation of the cosmic model. The regularity of the model, however, indicates the purposefulness of structure and strongly suggests such an interpretation.

Ahmet Yurur, in his work on the music of the Turkish Alevi-s, found that the structure of some pieces of ritual music of the *miraclama*, the miraculous journey of Muhammad to heaven, is organized according to the model of the arc of ascent and arc of descent—the concepts essential in the worldview of the Alevi-s—which is also understood by scholars as the representation of a spiral [25].

The spiral as a model can be seen in the music of many parts of the Islamic world. I found it as an underlying model in the process of acceleration, for example, within suites in the *sufyana musiqi* of Kashmir and in the structure of the *mizan* sections of the Andalusian suites of Morocco. In the *Sufyana* of Kashmir, the suite (*maqam*) is a succession of songs in one melodic mode (*maqam*), grouped according to rhythmic modes (*taḥs*). Songs in slower and longer rhythmic modes are followed by songs in shorter and faster ones. There is thus an overall acceleration on the level of the entire suite. Additionally, each of the two sections (*asta'i* and *antara*) of individual songs begins at a slow speed and accelerates towards the end. Thus the acceleration can also be seen on the level of the individual pieces. In the Andalusian tradition of Morocco, the suites (*nawba-s*) are composed of sections (*mizan-s*), each in a different rhyth-

mic mode and consisting of a series of songs (*san'a-s*). Although the succession of the *mizan-s* only to some extent shows acceleration, within the *mizan-s* the principle of acceleration is clear. Each *mizan* begins with slow songs. After several songs, the speed increases in the section named *al-qantra al-ula*, the first bridge. It remains generally steady for the next few songs, and then increases again during *al-qantra ath-thania*, the second bridge. Toward the end of a *mizan* the speed again increases rapidly.

Are we, in the absence of a direct confirmation of the understanding of such cosmological models by practitioners and carriers of the traditions, justified to interpret musical structures symbolically? The overwhelmingly strong symbolism in all the Islamic arts and philosophy provides great circumstantial evidence and certainly suggest such a possibility. We are faced with the same dilemma that Papadopoulos faced in his interpretations of the design of miniatures through spirals. He realized that direct confirmation does not exist and, perhaps, even could not exist. The underlying structures belonged to a hidden, secret knowledge that is not available to everyone and is maintained in the hands, or rather minds, of the few initiated persons. Such knowledge often can prove to be very fragile. Papadopoulos was fortunate to find some indirect support for his interpretation. In India, during the Mughal period, at the courts of the rulers, the production of miniatures was performed on a large scale, and the workshops developed specializations. There were artisans specializing in backgrounds, landscapes, figures, faces, etc. Others designed the miniatures. He found that these designers, who actually did not paint anything, were paid the highest amounts of money [26]. Perhaps they were the ones who knew. We are still looking for such evidence in music.

References and Notes

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