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Melodic Idiophones in Persian Music History through the Islamic Era

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Abstract: In the history of Persian music, as well as rhythmic idiophones, there were idiophones which were responsible for playing melodies. Although the numbers of these instruments were few, we can observe a continuity of use in melodic idiophones at various moments of Iran's history. These idiophones were tuned to different frequencies and played tones and melodies. Three melodic idiophones which have been mentioned in the musical treatises are: *Kasat* (Kasat-e Chini), *Tasat*, and *Alwah* (Alwah-e Foulad). In the current study, we examine melodic idiophones in Iran's musical history, with reference to the existing literature. As well as general information about some of the melodic idiophones that were used in Iran, there are discussions about the instruments' external structures or morphology, their tonal ranges, the simultaneous playing of some tones, and their performance techniques. For example, the form of the instrument often determined its musical abilities. The number of tones made by a Kasat-e Chini was related to the number of its bowls, and in an Alwah, it depended on the number of steel plates. What arises from the tonal derivation of these melodic idiophones shows that they could play tonal scales of their own music system called Safi al-din`s seventeen-tones scale, and sometimes thirty five tones, or two octaves. These instruments, in addition to playing tones and melodies, were also capable of playing counterpoint.
Keywords: Idiophones, Melodic Idiophones, Instrument Organology, Persian Music treatises.

INTRODUCTION

Idiophones are defined as instruments in which the tone is produced from the body of the instrument itself. Victor Mahillon called this group of instruments Autophones in his catalogue in 1888. Later, Kurt Sachs and HorenBastel called them Idiophones in 1914 [1]. Idiophone are instruments which can automatically make tones, while their constituent material is hard, inflexible, and yet able to vibrate, such as cymbal, castanets and bell. Compared to other instruments, idiophones have convenient structures and performance techniques. Types of idiophone include percussion, blade, friction and wind idiophones and each of these are sub-divided by shape or material or method of use or tone-making.

In addition to idiophones with a rhythmic design, we can see idiophones in Iran's history which were responsible for playing melodies, and which were tuned to specific frequencies. These idiophones which play tones are called "melodic idiophones" in this article, whereas those like cymbals and castanets are characterized as "rhythmic idiophones". In the history of post-Islamic Iranian music, we find three major melodic idiophones: *Kasat* (Kasat-e Chini), *Tasat*, and *Alwah* (Alwah-e Foulad). Used to play tones and melodies, these three instruments were not designed to provide rhythmic backing.

Generally speaking, the idiophones mentioned in old treatises of Iranian music are: Kasat-e Chini, Alwah-e foulad, Evany, Chaghaneh, Chime, Daray, Bell and Gong. As an example, Qutb al-Din al-Shirazi names Kasat-e Sini (Probably means Kasat-e-Chini) [2], Kas, Tas and Evany [3] in *Dorrat al-tāj* (written in 1349 AD). Evany means dishes, bladders or vases which are introduced in *Nafayes al fonoun* as "Evany like glass and porcelain" [4] who emphasizes them as being instruments, like Kasat-e Chini. Obahi mentioned idiophones such as the chinaware bowl, steel piece or bell and the Daray in *Moghaddame Al`osol* (written about 1483 AD) [5]. However, in addition to the names of these instruments, among ancient music booklets of Iran, we can only find a description of idiophones in the booklets of Abd al-Qadir al-Maraghi (1366-1434 AD). He also devotes his attention to melodic idiophones, but doesn't mention rhythmic idiophones. Among the instruments of this group, Abd al-Qadir describes instruments which are able to play tones including Kasat, Tasat and Alwah. He doesn`t describe idiophones like the castanets, the Chaghaneh, the cymbals or other instruments that are only designed to be rhythmic. Generally, in the sections concerning instruments in Abd al-Qadir's text, and in other similar articles describing instruments, rhythmic idiophones are absent, or are simply given by name without

description. For example, it is possible to find only a few named rhythmic idiophones in some music booklets of the Safavid era. The chime is noted in multiple Safavid-era publications, such as in the music of Kashf al-tar written in 1543 AD [6], Resaleh Vajdiye written in 1591 AD [7], Osoul-al naghamat [8].

We can uncover idiophone instrument names - such as cymbal, chime, Chaharpareh and gong - in socio-historical publications, but very little about their external appearance is discussed. In the historical literature, not much is said about the melodic idiophones such as Kasat and Alwah. In a bit of poetry by Ahsan al-tawarikh, an instrument named "Chini" is mentioned, which probably was the same Kasat-e Chini [9]. Tiqan is mentioned in *Rozat al safa* [10] and *Zafarnameh* [11]. The Tiqan was an idiophone similar in category to the Alwah, which contained some blades or metal plates of different diameters. Thus we may conclude that the Tiqan was a kind of Alwah.

In addition to published papers by Iranian historians, there are also the names and descriptions of idiophone instruments in European travelogues. Idiophones mentioned in such travel writing are often rhythmic, with only two instances of "Alwah" and "seven Chinaware bowls" representing melodic idiophones. Chardin, who traveled to Iran in the time of Shah Abbas II (1642-1666 AD), mentioned "clock-like instruments like the Alwah" [12]. Olearius discusses "seven Chinese bowls" with a man named Elias playing them by beating two small rods on their body, creating a tone like a lute [13]. In other words, the descriptions in European travelogues of the Safavid era are predominantly about non-melodic idiophones such as cymbals and castanets. Among these, we may mention the description of the Iranian cymbal by Della Valle in the time of Shah Abbas I [14], Olearius in Shah Safi's time and Kaempfer in the reign of Shah Suleyman Safavi [15]. Since this paper aims to introduce and describe melodic idiophones, rhythmic idiophones described by European travel writers are not discussed further.

There are no melodic idiophones in existing visual resource - which are most important resource for recognizing and studying instruments - and only a few simple pictures of these instruments can be seen in Abd al-Qader Maraghi's treatise. Generally, the cymbal and castanets are the most observed instruments among idiophones. An amplitude idiophone can be observed in the paintings of the Ilkhanid era until the late Safavid, which appears to look like castanets. It was a hand-held instrument made of four rectangular small parts, two of which were held in the hand, and dancers clinked it while dancing. Presumably, going by historical texts and existing travel reports, it was called Chaharpareh. We can only observe pictures of rhythmic idiophones in existing visual resource.

To address the subject of the paper, three instruments - Kasat (Kasat-e Chini), Tasat and Alwah - recognizable as melodic idiophones can be found in existing resource. However, in these resources, only two instruments - Kasat and Alwah - have been described, since the Tasat was seen to be the same as Kasat. Thus, in the current study, we introduce and describe two instruments, Kasat and Alwah, from the aspects of morphological, tonal composition and performance technique.

Morphological aspects

Kasat

The Kasat or Kasat-e Chini comprised multiple bowls, each of them filled with water. Abd al-Qadir al-Maraghi mentions Kasat as an open or non-stopped instrument, because it includes bowls complementing a tone. According to Abd al-Qadir, these bowls were tuned in two ways. The first key, producing only eight dolce tones [16], contained eight bowls. However, in the second key – producing Safi al-din's full eighteen-tone scale – it required eighteen bowls. In the image given by Abd al-Qadir, for this instrument, the number of producible tones is equal to the number of octave tones or two octaves. Abd al-Qadir didn`t describe the sizes or shapes of the bowls, but we may determine the number of bowls from the number of composed tones.

The monograph manuscript, "*Dar bayane Ghasaat-e Chini*" (*The Expression of the Chinaware Ghasat*) which is preserved in the Malek library as No. 823, is believed to be the work of Abd al-Qadir. The description of the instrument Ghasaat-e Chini resembles that of Abd al-Qadir's about Kasat. Ghase means bowl and the Ghasaat-e Chini instrument has a similar name to the Kasat. There is no information about its size and shape in "*Dar bayane Ghasaat-e Chini*", but it mentions bowls, and playing them with two plectrums [17].Thus we can distinguish that this was the same Kasat which he had mentioned in other papers. Abd al-Qadir presents another illustration of how to derive tones from this instrument, which is not related to its external shape.

In the Safavid era, Olearious talks about seven chinaware bowls in the time of Shah Safi, with a man named Elias playing them by beating two small rods on their body, creating a tone like a lute [18]. This shows that an instrument like these chinaware bowls was used in Safavid era, too. In other words, we may be able to find the Kasat-e Chini in some music treatises of the era.

Alwah

Another instrument within the melodic idiophone group is the Alwah or steel Alwah. It is made of steel plates of different sizes, with deeper tones made by larger plates, and higher tones by smaller ones. The Alwah is said to contain eighteen plates in the Nour

Osmania Library manuscript [19]. These plates are crenellated by four rods. There are two holes on each plate which are bound to the wood by two strings from the top and one string at the bottom. Each plate had three tuning pegs, of which two pegs were bound to the upper string and one to the lower. Turning the pegs, the Alwah remains consistent and stable. Referring to Abd al-Qadir, these Alwah (if rectangular) had a width of 52 centimeters and a length of 208 centimeters. They were arranged in two rows of nine plates, thus totaling 18.To extract high tones, small plates were hit, and for low tones, larger ones. These Alwah were played with a wooden hammer. Abd al-Qadir talk about tuning these plates. While in the Kasat, the key change was made with water, here in these Alwah, it was accomplished by fire.

There is a page "Alwah instrument made of steel", in Maghased al-alhan seen in the Leiden library manuscript. As observed, it emphasizes that these Alwah are made of steel. In this version, the Alwah is described as having three strings (two strings on top and one string at the bottom). The difference between the monograph and other period descriptions is in the number of rows of plates. In the Nour Osmania library manuscript, the Alwah are put in two rows of nine, but the number of plates in the Leiden Maqased al-alhan includes two rows of 18 and single row of 10, totaling 46 plates [20]. This means that the number of plates differed from the eighteen plates mentioned in period description. It is worth noting that the number of plates mentioned in *Neqavat al-adwar* of Abd al-Aziz Maraghi is thirty five plates [21].Thus the number of plates used in this instrument is mentioned as having three different versions: 18 plates in the first description, 46 plates in remaining single page of Leiden Maghased al alhan and 35 plates in *Neqavat al adwar*by Abd al-Aziz Maraghi. Due to the mentioned versions, it is possible that number of plates was not constant.

The Alwah instrument is not present in the music papers of the Safavid era, but it was mentioned as a "horary instrument like Alwah" in Chardin`s travelogue on Shah Abbas II and Shah Suleyman Safavi [22]. Chardin used the phrase "Casillon", which has the same meaning as "Santoori" or "horary instrument". Meysami claims that it would have been better if the translator had interpreted them as common Alwah or Steel [23]. Chardin described this instrument containing a few clams or pewter pieces with different diameters which were put together and played with two long rods. Therefore, as Chardin refers to these pieces as pewter, they probably resemble the Alwah instrument as discussed in the old musical texts of Iran. It is likely that a form of this instrument was common in the Safavid period.

Today, three homogenous instruments exist in different parts of Iran. There is a dual tone instrument with two plates in the Azerbaijan region. A monotone instrument called "Soochla" is used in the northern part of Iran for duck hunting. Lastly, a plate with metal blades is used as a bell in some schools. However, these three instruments are double tone and monotone, so they are incapable of playing melody, only being able to play one or two tones.

How to Extract Tones and Scales

Extracting Tones from theKasat

Following on from Abd al-Qadir and Abd al-Aziz Maraghi, we can assume that it was possible to extract all potential tones of the Safi al-din scale, as well as several other scales, from the Kasat. Also, in the illustration presented by Abd al-Qadir, number of tones producible by this instrument corresponded with the number of Octave tones in a double Octave. Kasat or "Ghasaat-e Chini" comprised chinaware bowls filled with water - the more the bowl was filled with water, the deeper the tone. Pitch change in this instrument was achieved by changing the amount of water. Referring to Abd al-Qadir, these bowls were tuned in two keys. The first key, consisting of only consonance tones [24], contained eight bowls. However, all seventeen tones of Safi al-din's scale were playable in the second key, requiring eighteen bowls. Like the lute, this instrument could play thirty five tones, corresponding to a double Octave. Thus, the number of tones composed by this instrument is equivalent to the number of bowls. The instrument mentioned by Olearious in the Safavid era as "seven Chinaware bowls", could not have composed more than seven tones.

Another advantage of the Kasat that Abd al-Qadir mentions is that it is able to compose several tones simultaneously, sinceit can be played by both hands simultaneously. Abd al-Qadir doesn't explain anything about the Tasat, simply indicating that it composestones in a similar manner to that of the Kasat [25]. Based on this, we can surmise that, like the Kasat, it is possible to extract all tones and cycles from it.

Extracting tones from The Alwah

The Alwah used steel plates, with large plates creating low tones and small plates higher ones. Abd al-Qadir says that tuning these plates was accomplished by fire, as was achieved in the Kasat with water. The number of playable tones in this instrument corresponds to the number of its plates. This number has appeared in three different versions: 18 plates in the Nour Osmania library manuscript, 46 plates in remaining single page from Leiden library manuscript *Maqased al-alhan* and 35 plates in *Neghavat al-adwar* of Abd al-Aziz Maraghi. It is possible for an instrument with 18 plates to play a single scale of Safi al-din, but in other instruments with 35 plates or more, as well as having all the tones available in a single scale, corresponding

tones were playable in the next scale, too (a double octave of thirty five tones). Also, as Abd al-Qadir indicated that "there is Alwah with a third row of seventeen tones" [26]. Thus, we can conclude that there is no limitation in p laying all the potential tones of the Safi al-din scale, as well as its corresponding tones in the next scale.

Performance Techniques

Both the Kasat and the Alwah are considered as percussion instruments, because the tone is produced by playing plectrums on the instrument body. Abd al-Qadir shares considerable information with us about the performance techniques of the Kasat. He mentions the Kasat, saying that it was played with two plectrums, whose material was chosen by the performer. The right-handed plectrum was called the "Sayer" and the left-handed one as the "Raje". The right-handed plectrum played the melody or, following Abd al-Qadir, the melody, while the left-handed plectrum often was used to beat the bowls, and even played other tones, including the plectrum itself. In addition, the Sayer plectrum could sometimes be played to embellish the Raje bowls' tones (left side) and the Raje plectrum could be played on the Sayer's bowls (right side bowls), but quickly returned to its position. With this instrument, two or more tones could be played simultaneously [27].

Abd al-Qadir says that the steel Alwah instrument is played by one or two hammer-like wooden plectrums. The right plectrum playing on right-hand plates was called the «Sayer», and the left side plectrum playing on left-hand plates was called "Raje".

Historical Background

Abd al-Qadir claims in *Jame al-alhan* that he invented the Kasat himself: "and nowadays, we didn't see or hear of it from anyone, but we found it, by the grace of God brought to my mind" [28]. Abd al-Aziz Maraghi mentioned this instrument as one of his father`s inventions – Abd al-Qader: "and this instrument was invented by my father" [29]. But Ghotb al-din Shirazi mentioned the «Kasat-e Sini» prior to Abd al-Qadir [30], which was very possibly the same Kasat as described by Abd al-Qadir. Abd al-Qadir's claim to have invented this instrument may possibly refer to his increasing the number of its bowls.

RESULTS AND DISCUSSION

We can determine the specifications of melodic idiophones from musical sources, especially from Abd al-Qadir Maraghi's treatises. We can find out different data, such as the instruments' external structures, the number of their playable tones, the simultaneous playing of more than one tone, and their performance techniques. Morphologically speaking, there is information related to the number of bowls in the Chinese Kasat and number of plates in the Alwah. There is no information about the size of the bowls in the Kasat, however. Referring to Abd al-Qadir,the Alwah, if it was rectangular, had a width of 52 centimeters and a length of 208 centimeters. The material of the Alwah is mentioned as being steel. As its name makes clear, the Kasat-e Chini must be chinaware.

CONCLUSION

There were melodic idiophones through the Persian musical history. Three melodic idiophones which have been mentioned in the literature are: *Kasat* (Kasat-e Chini), *Tasat*, and *Alwah* (Alwah-e Foulad). These idiophones were tuned to different frequencies and played tones and melodies. These three instruments didn`t have a rhythmic design like other idiophones (such as castanets, bell and cymbal), but instead played tones and melodies. It appears that the Tasat is an instrument similar to or the same as the Kasat-e Chini. These two instruments included multiple bowls, which were filled with varying levels of water. The Alwah is a collection of metal plates of different sizes.

The number of tones produced by the Chinaware Kasat corresponded to the number of bowls, and in the Alwah it depended on the number of plates. According to Abd al-Qadir Maraghi, these instruments were capable of playing all the potential tones of Safi al-din's scale, and sometimes tones of the double octave, so there was no limitation to these old instruments with respect to playing tones. However, there was a kind of Kasat which only could extract light tones - an instrument mentioned by Olearius in the Safavid era included seven bowls which composed seven tones. These instruments, as well as composing tones and melodies, were capable of playing multi-tones too. Abd al-Qadir also says of the Kasat that the right-side plectrum (Sayer) performed melody while the left-side plectrum (Raje) sometimes beat on a bowl, and sometimes played tones in a similar way to the Sayer plectrum.

There are other indications of the instruments' performance techniques which we can find in the literature. Generally, melodic idiophones in the musical history of Iran were counted as percussion idiophones. The Kasat was played with two plectrums, their material being chosen by the performer (such as wood, metal, etc.). The Alwah was played by one or two hammer-like wooden plectrums.

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