

The Antique Timbres of Turtle Shell: Lyra

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Abstract: Music gains functions such as charming, healing and warning in the community once the social system has started. The factors which warmed up and cheered on the society prior to war turn into tool conveying information from generation to generation with legends. War screaming turned into military marches gradually and melodic mumblings during the pray gave rise to religious hymns. The first melody was either related to celebration ceremony of gods or praise to strong heroes who were equal to gods. The art of music stimulated the power of thoughts and images increasingly in the stream of history, and found its own distinctive style in every age and every culture and a way of expression arising from the needs of that community. The musical instruments they used in this expression had significant roles. Modern researches related to antique music started in the late 19th century. All the publications related to subject benefitted from Attic works especially from the depictions on ceramics while reviewing antique music and musical instruments. These depictions comprise a great chance for both archaeologists and musicologists. Furthermore, they show appearance of musical instruments, how these musical instruments can be played to some degree and in which social community they are played for which purpose. This research entitled as “The Antique Timbres of Turtle Shell” studies antique musical instrument called as “Lyra” by bringing Apollo’s musical identity into prominence. As a result of this research, the “Lyra” made from turtle shell in the hands of God Apollo was played in the light of many Lyrical Apollo Clarios terracotta figures which were found in the excavation works of Claros.

Key words: ancient music, Apollon, Lyra

1. Introduction

In ancient era, people used a number of instruments on special days both as the necessity of daily activities and the religious systems. Those instruments can be classified into two groups. One group consists of culture-bound or local instruments. Another group includes the intercultural instruments shared by various cultures. In polytheistic religions, it is a tradition that gods and demigods have symbols. The Lyra and the Kithara, whose form and sound evolved, and have remained so far, were attributed to Apollon being one the greatest of the twelve Olympian Gods. In Hellenistic society, music was a part of belief and worship. It was a way of communication with God, and people sang hymns and gave thanks to God in Agons (festivals dedicated to Gods). Music performed at festivals had a religious character. A great many music forms stemmed from that religious music over time. The Lyra was one of the most common instruments played regarding that social function.

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Music was not only an art but also a science in Hellenistic world. It had a central role in their daily and religious life although it could have just been an activity for fun and pastime. Music took part in all activities of Hellenistic society such as education, rituals, stage performances, resting, and so on. Thus, plenty of information with respect to music could be reached in different literary and philosophical texts. For instance; Ilias and Odysseus of Homer, pieces of Plato, Aristotle, Plutharkhos, and others include much information, even it is not the detailed one, regarding usage, and production of musical instruments as well as where and how they were used.

The studies of modern researchers on antic music began at around the end of the 19th century. “*Histoire et theorie de la musique de l’Antiquite*” by F. A. Gevaert was the first study on music theory and history. A similar study was conducted in the book “*Histoire de la Langue Musicale* (1911)” by M. Emmanuel. The history of music was mentioned also in this book. The first detailed study was conducted on ancient musical instruments and their playing problems by Camille Saint-Saens, who was the expert in Near-Eastern music as well as being a composer. In his work, Saens dealt with musical instruments from an organological perspective. Following Saens, musical archaeologists such as Th. Reinach, *La Musique Grecque* (1926), C. Sachs, *Real Lexicon der Musikinstrumente* (1939), M. Wegner, *Musikleben der Griechen* (1949) and *Musikgeschichte in Bildern II/4* (1963), F. Behn, *Musiklebenim Altertum und frühenMittelalter* (1954), D. Paquette, *L’ Instrument de Musiqued’apres la ceramique de la Grece antique* (1969) studied musical instruments. While all the publications related to the topic were surveying Hellenistic music and its instruments, they utilized Attica pieces, especially the depictions on ceramics. Those depictions were a big chance for both archaeologists and musicologists. Those images illustrate the appearance of musical instruments in addition to how they are played (to some extent), and why they are played. Furthermore, chordophones (string instruments), aerophones (wind instruments), and membraphones (pulsatile instruments) were depicted as they were finetuned, played, and rarely hanged on the wall.

1.1 Construction of the Instrument

Although ancient sources have valuable information pertaining to music, they do not present satisfactory information about how they were played, and what kind of sound they produced. Under these circumstances, the most basic source of gathering information about the ancient music has to be modern instruments and data obtained from them in order to infer something about the past. Modern instruments can be beneficial in surveying antic music in terms of determining musical quality, carrying glimpses of how musical sound is arranged, and its usage in different social contexts. Taking those studies as a starting point, I started my PhD in 2001 in order to reproduce the Lyra, a sound box in the hands of God Apollo, made of a tortoise shell. I conducted the reproduction process in the light of terra cotta figures of Apollo with the Lyra, which were found at Klaros excavations in Ahmetbeyli region in İzmir, and had a vital importance in Hellenistic music and culture. In this study, I managed to reproduce the Lyra in a playable condition as originally as possible after a long study (Figures 1–4).

This study is absolutely an interdisciplinary one. This music archeological study has proven that a theoretical study can be converted into a practical study in order to find out music culture of the ancient era with help of cooperation between archeology and musicology. The main purpose of the reproduction process of the Lyra was to reveal concretely how the music was in the antic era, and what kind of a musical effect it had.



(1990)

Figure 1



(2009)

Figure 2



(2008)

Figure 3



(2008)

Figure 4

Reproducing the instrument, we tried to employ methods mentioned in the antic sources. The oldest structure definition of the Lyra made of a tortoise shell was the one in the Homeric Hymn in VII B.C. dedicated to Hermes. According to the story, “*Hermes transformed a mountain tortoise into a sound box, emptying inside of the animal with a device made of grey iron. Hermes cut the cane stalks, passed them through the shell and then tied them to the end to fix and measure. Lastly, Hermes stretched the hide of an ox on it. In addition, Hermes placed two horns on the shell, fixing them with a bridge. By stretching wires on it made of guts, he played it with a plectrum*¹.”

The reproduction process of the Hermes Lyra, following a three-year preliminary study, was completed in a four-month period. Both ancient and modern methods were applied in the reproduction process of the instrument.

1.2 The Form of the Instrument

The article namely “Reconstructing the Greek Tortoise- Shell Lyra” by Hellen Roberts was a significant reference in the reproduction process of the Lyra sound box. Taking Robert’s dimensions as a reference, a tortoise (Testudo Graeca) having 23 cm height and 11 cm depth was found in Karaburun region of İzmir. Firstly, the animal was fainted by ether. Next, it was cut and the viscera of the tortoise were emptied by boiling. Thus, the sound box, most important part, was prepared. Having been emptied, it was dried. Lastly, the inside of the shell was scraped by glazing and it was rubbed (Figures 5–7).



Figure 5



Figure 6



Figure 7

Although the handles of the instrument were made of a horn in the original form, it is not possible to find a 39.2 cm height horn today, so consulting the instrument production masters, a beech wood, having medium hardness, has been used. The reason why the beech wood is used that it is a kind of tree which is more durable than other trees. The handles were rounded by a scraper and a curved file. In the reproduction of handles,

Hellenistic techniques were applied. Even if none of the smoothing techniques having been applied by the Helens are not known, remaining of the Elgin Lyra so far is the evidence of the significance of ancient methods. It is known that Hellenistic Lyra makers used lathes, for Aristophanes used the word “*torneutollyraspidopegos*” in the meaning of “latheman and armor maker”. However, none of them have survived up to now. As it might be supposed, those lathes were only able to shape pieces of wood in a cylindrical shape.

After having been symmetrically fixed (Figure 8), the handles were attached to the shell (Figure 9). So as to connect the handles with the crossbar, the handles were placed slightly the front of the sound box and were given a shape bending higher up. The reason why they were designed in that shape was that the strings were not on the sound box, and they were able to provide a shape permitting a gap. If the handles were flat, it would not be possible to get proper sound. A 31cm-long crossbar made out of the same material was placed between the handles (Figure 10).



Figure 8



Figure 9



Figure 10

After the crossbar having been attached, the animal hide, drenched, was stretched on the shell and left to dry (Figure 11). To preserve the handles from outside weathering, the material exploited was grinded by iron oxide to make them look like horns, and it was strengthened with rosewood oil¹ (Figure 12).



Figure 11



Figure 12

The next step was to determine the kind of the strings and how they would be attached. As mentioned in Homer's hymns, they were made out of sheep's guts (Mathiesen, 1999). On the other hand, it is assumed that although threads, strings were parts of chordophones, they were used as accessories such as wrist bands and other decorative materials (Mathiesen, 1999). The characteristic of the string was that it was made out of guts of sheep and had the cylindrical shape (Anderson, 1994).

Despite the fact that the Lyra had 3 or 4 strings in earlier periods, from Terpendros on, it has had 7 or more strings. In Mercirium, it is claimed the Hermes Lyra had 7 harmonious strings, and a great many ancient writers told about the same number. In *Manuale Harmonices* (Rapids, 1994), Nikomakhos unites those seven strings with worldly revolutions and names them as “hypate, parhypate, hypermese, mese, paramese, paraneate, and neate”.

¹ A hard, sturdy oil used in the making of musical instruments.

There is no clear information about the thickness of the strings made out of sheep's guts. However, the tetrachord system shows some evidence of the thickness of strings. In the light of the information, from the third octave strings of the Harp, re, mi, and fa were set. The other two strings designed as catgut to get thicker sound.

The Plectrum, used for playing the instrument, is more important than anything. The Plectrum dates back to Melos amphora in the 7th century. It is long and resembles a spoon which broadens to one side and get narrower to the other side. The Plectrum is a tool made out of the shin bone of cattle, tough wood or ivory. It extends to 2.54 cm. forward from the finger tip of a thumb. Playing the Lyra, the strike is towards the body and from the top to the bottom (Anderson, 1994). There are a lot of depictions of the Plectrum in vase pictures. Those pictures depict that the Plectrum is linked to the instrument with a long cord and is generally played with the right. It is held between the thumb and the index finger. The playing process of the instrument always includes outward movements of the arm and the wrist (West, 1992).

It is easier to obtain better tunes from the strings when the instrument is played with organic and heavy materials. Therefore, reproducing the Plectrum in accordance with the original one, we have used a shinbone of an animal by sandpapering it (Figure 13).



Figure 13

1.3 Tuning the Instrument

The chordal mechanism of the instrument is primitive (Anderson, 1994). We know that the chordal mechanism was available in the period of Homer as Phorminks mentioned about Kollops. The archbishop Eustathios himself, mentioning lexicologists' expressions and touching on the Kollops types used in Odysseus's Phorminks, is a source of recent periods. The hard hide stripped from sheep and oxen's necks were used for the Kollops. The hide, from which the adhesive was produced, was called the Kollops, and the officials of Eustathios have put forward that some of the fat left on the hide. For each string, a strip of the hide was wrapped around the crossbar. The rolled hide was transformed into a piece that could change the tension of the strings (Figure 14).

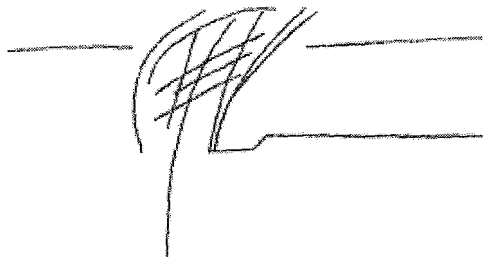


Figure 14

In any case, the strings have wrapped around the bridge. In earlier Lyras, the strips of oxen hide were used. Initially, the strips were wrapped around the upper bridge in order that it could provide the necessary tension on the hide. The tune was adjusted by loosening or tightening that strip. The function of the Kollops was to enable

the strip get tightened by pushing it around upper bridge of the Lyra. Actually, these kinds of tuning devices date back to the Sumerians and Babylonians in around 3000 B.C. as they used the instruments similar to the Lyra. That principle was also applied by Greek instrument makers. Kollops was pressed in a position that it could keep the strings tightened. However, the hide was compulsory to be changed in such situations that the hide did not stick to the upper side and the string when the fat on the hide of the animal dried. The same chordal mechanism is used for a primitive Lyra type namely, the Kissar in East Africa and Ethiopia (Sachs, 1940). The chordal method of Hellenes was neither convenient nor clean. Thus, in each string re-tightening process of the instrument needed the new hide. Odysseus himself stretched the strings with the new Kollops (Sachs, 1940). The piece made out of the hide must inevitably be large and cover the upper edge of the instrument. Many upper edges in accordance with that definition can be seen on black figure vases. Undoubtedly, that kind of raw chordal mechanism has emerged with the seven chordal devices like the ones on Aristotle's head in the 6th century B.C. On ceramic paintings, the chordal devices were always in the same position and parallel to the upper edge even if they could be turned (Sachs, 1940). The artist who ornamented the vase did not draw the picture of what he saw. Because all strings could not be accorded with one tone, the pegs on the upper crossbar must have had different angles. Such objectiveness would have caused improbable changes in Hellenistic technique. Moreover, the symmetrical positioning of the pegs was not only convenient but also it looked better for the Greeks (Roberts, 1981). If the pegs had been turned around the upper edge, only the upper and the lower side of the peg would have seemed to hang on the yoke. That was the explanation for the dots and the circles on the vase. Those are the back sides of the pegs which had rectangular shapes. Were those mechanisms invented by the Greek? The answer of the question is probably no. Two Lyras out of seven which were found in Ur were the Lyras with 11 stringed dating back to 3000 B.C. Even a wooden silver Lyra was broken into pieces, the lever and the silver fid used for tuning is still available. The lever method is still used with Kerar and Baganna instruments which are particular to Ethiopia. It is not probable to know how the Helens tied that string until a tuning peg of Helens is found. There are two probable methods regarding the issue. In the first method, the strings were knotted through tying them around the fid or thanks to small dots on the silver fids of Sumerian Lyras. In the second method, the string was wrapped around the yoke and the stick; thus, that stick stretched or loosened the string. The second method would be used since it enabled a better revival of the instrument.

In the reproduction stage of the instrument, both methods were applied, but not a successful chordal system was achieved. Instead of those two methods, a contemporary chordal system with tuning pegs has been applied (Mass & Snyder, 1989). The main reason for applying this method is to make the instrument playable. By opening holes on the crossbar which fixes the strings, inside were placed tuning ear pieces that were made out of the same material (Figure 15). Thanks to a tuning peg (Figure 16), it was managed to tune the instrument properly.



Figure 15



Figure 16

2. Result

To conclude, following all operations carried out, the instrument was playable again just as the Hermes Lyra (Figures 17–19). We have managed to produce the sounds of the ancient period via research and testing of the instrument. Firstly, the sacred song “Hymn to Sun” written by Mesomedes, a Cretan gleeman, was performed with the instrument. While playing, the sounds were G-A-B^b-C-D-E-F (Landels, 1999).

The reproduction process of the instrument is absolutely an interdisciplinary one. This music archeological study has proven that a theoretical study can be converted into a practical study in order to find out music culture of the ancient era with help of cooperation between archeology and musicology.



Figure 17



Figure 18



Figure 19

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