

Chordophones in the Ancient Aegean and Near  
East

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## 1 Introduction

### 1.1 Aims

The organology of the Aegean and Ancient Near East is particularly rich in chordophones, with perhaps the highest concentration of lyre and harp-type string instruments of any region or period. The great homogeneity of the organology of the area, with many instruments appearing to have remained almost unchanged over several millennia<sup>1</sup>, is particularly striking, as is the similarity of the instruments across the different regions. Although, from the modern perspective, with

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<sup>1</sup>Especially when compared to the speed of change of musical instruments evident in recent centuries [Montagu 06].

members of the violin and guitar families being the dominant instruments in popular, art, folk and even so-called 'world' music, it is easy to assume that chordophones should proliferate across cultures, it should not be assumed that this is an inevitable occurrence for every culture and society. This dissertation therefore seeks to explore the processes by which chordophones were developed and evolved throughout the Aegean and Near East and explain why there were so many occurrences of similar designs over such a long period.

In order to achieve these aims, it is necessary to take a strongly comparative approach, looking at similarities and differences across the different geographical regions, cultures and periods rather than concentrating, and many authors have done, on just one. It also seems necessary to extend the scope of the study of ancient organology beyond the designs of the instruments themselves and to look at some of the factors and technologies which assisted their development. In particular, it is apparent that, for the earliest evolution of chordophones, the mastering of the techniques used to produce gut strings were particularly important. This, in turn links the development of chordophones into other areas, most notably the production of weaponry. It is also worth considering whether the chordophones can reveal information about how they were constructed and by whom.

By performing such a comparison between the different cultures of the Ancient Near East and Aegean, it is apparent that there was an extensive transmission of ideas about the structure and form of different types of chordophones across the whole of the Aegean and Ancient Near East, even extending across the Zagros mountains and into Persia. However, these similarities must also be tempered by the influence of local cultures on musical instrument design, with most cultures

expressing a preference for one specific type of instrument over another and, even when importing an instrument's design, modifying it to suit local styles of woodwork. These two features, together, can be used to suggest a locality from which instruments developed and from which their designs were transmitted. It can also be seen that, in terms of the importing of other cultures' designs, there was also a preference.

## **1.2 Historiography**

Most authors who have written about the organology of the Aegean or Ancient Near East have chosen to specialise by considering only one particular culture or period (for example, see [Arroyo 03] or [Mass 89]) and the few authors who have surveyed the entire region have tended to do so in a consciously non-comparative way (for example, [Norborg 95], which is conducted on a region-by-region basis). Even when different regions are compared (for example [Lawergren 01]), the emphasis is always on the differences between the organology of the regions (in this case between the 'East' and 'West'). This approach has resulted in a lack of exploration and explanation of the great similarities between the chordophones constructed by the different cultures in the Aegean and Ancient Near East from the very earliest historic periods. Current authors have also not tended to explore the ways in which the similarities between the instruments used by the different cultures in the regions occurred and, furthermore, little has been written about the earliest development of musical instruments. Most authors, instead, have tended to use the development of more complex instruments, such as multi-stringed harps and lyres, as their starting point, not considering how

those instruments came to exist. For example, Otto Gombosi introduces his paper on music in Crete and Mycenae by commenting that:

The most characteristic instrument of Antiquity was the lyre. It appeared in Mesopotamia about 3000 B.C... [Gombosi 42]

but without an explanation of how such an instrument 'appeared'. This is understandable as, for many authors, the aim of the study of ancient music seems to have been to discover the evolutionary process which lead to the music of 5<sup>th</sup> Century classical Greece<sup>2</sup>. As an admittedly extreme example, Charles William Seidenadel, attempting to explain, in 1898, how Western Classical music could relate to that of the Ancient Greeks, went so far to assume that Classical Greek music tended to exist despite being hindered by its organology:

Indeed, if we consider the beauty of the poetry of the Greeks, the nobility of their sculpture, the majesty of their architecture, are we not entitled to assume that Greek music also was in harmony with the other arts and was similarly great in its simplicity, in spite of its childhood, and in spite of the primitiveness of the musical instruments? [Seidenadel 98, pg. 541]

The difference in views of Seidenadel and authors writing more recently, such as Landels [Landels 99], who devotes over two thirds of his work on *Music in Ancient Greece and Rome* to a consideration of Seidenadel's 'primitive' instruments, further highlights the differences in approach over time. Following the pioneering work of authors such as Francis Galpin (who is particularly noted for

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<sup>2</sup>Whose music could then be considered to have laid the foundation of Church and, later, Western Classical music

being active both within the field of the study of ancient music (see, for example, [Galpin 37]) and without (such as [Galpin 10, e.g.]), the field of is now seen far more as an essential part of understanding the music of a culture. Indeed, for the study of ancient music, as Landels puts it in his introduction to the music of the Classical Greeks, it is almost inconceivable to separate the music from the instruments which played it:

In reviewing [the Greek's] various musical activities, it will be necessary to make frequent mention of some of the instrument which were in general use. [Landels 99, pg. 1]

## 2 Limitations and Potential Problems

Work on any subject related to the music of an ancient civilisation requires extreme care. It is tempting to move away from the justifiable and towards speculation. In particular, many authors seem unable to resist the temptation of 'realising' ancient music, either into modern notation (for example [Galpin 37, appendix]), an actual performance, or some other means. These realisations are often carefully and soundly argued but, much like attempts to translate texts written in poorly documented scripts<sup>3</sup>, are always flawed by how little material from which there is to work. An additional difficulty, which is probably uniquely problem for performing arts is that the much of the knowledge of the subject is inevitably transmitted aurally and that representations, whether textual or pictorial, may easily miss important details. For instance, before the invention of sound recording equipment, it was impossible for precise details of matters

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<sup>3</sup>Such as the Phaistos Disc.

of intonation or realisation of a manuscript to be preserved accurately over a period of time without any modification, as they cannot be effectively described by either a textual or visual depiction.

The other major fallacy which is sometimes made, especially by groups who built reconstructions<sup>4</sup>, is to assume that comparisons to the music of a modern culture which uses similar instruments will allow contemporary musicians to somehow intuitively revive the historic music. For example, the 'Golden Lyre' produced by the 'Golden Lyre of Ur Project' has frequently been played by Ayub Ogada, a Kenyan nyatiti player, with an implicit understanding that due to perceived similarities between the nyatiti and the lyre, the music created has an element of authenticity. Such ventures have, of course, very little chance of accurate musical reproduction. As a comparison, one might consider what the chances would be of a modern sculptor, if given the suitable materials, reproducing a Neo-Assyrian bas-relief without making any reference to the originals.

Attached to this fallacy is a subtler but, perhaps, more persistent issue caused by an appeal to a Universal Aesthetic to justify a particular argument. It is quite easy to assume that whatever is considered aesthetically pleasing today would have been felt, likewise, in the past. An example of this would be in the construction of the resonators of Sumerian lyres. For many modern instruments, irrespective of cultural origin, any box-shaped resonators are designed to be easily put into vibration by the movement of the instrument's strings. Therefore, if the highly decorated and inlaid bodies of the lyres from the Royal Cemetery at Ur had not been found, one could have plausibly, but entirely falsely, made the argument that these instruments were made almost undecorated (and certainly not inlaid)

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<sup>4</sup>For example the 'Golden Lyre of Ur Project': <http://www.lyre-of-ur.com/>



as that would be caused too much damage to their acoustics. Filling gaps in the archaeological and textual record with suggestions that might seem obvious can easily suffer from such difficulties and it is therefore vital that one is constantly aware of this problem when trying evaluate whether a suggestion is possible or not.

Although attempts to make ancient instruments sound again are the most obvious problems with many authors, one can sometimes, still, detect an element of *Orientalism*. This is more frequently encountered in older works than modern ones, where comments such as:

Can we not [...] say with tolerable certainty that the system used in Ancient Egypt was based upon the same scales as our own music of to-day? [...] The weird modes of the Near and Far East came from a different source. [Pulver 22, pg. 46]

are not infrequent. However, modern works can occasionally still be seen to make arbitrary East/West divisions, with an emphasis on the East as inferior. For example, Lawergren's [Lawergren 98, pg. 41] emphasis on a distinction between *Eastern* and *Western* lyres could be seen to contain an element of *Orientalism*, especially as a division between flat- and round-bottomed instruments seems, from the organological point-of-view, fairly arbitrary, and the main thrust of the argument seems to be towards showing an evolution of lyres as a gradual progression from primitive Eastern instruments to towards the sophisticated and more complex Western 'Concert Kithara' [Lawergren 01].

## 3 Sources

There are four main sources of information about musical instruments in the Aegean and Ancient Near East. These are: surviving instruments, iconographic, sculptural and textual representations. Each of these sources has a number of advantages and problems which must always be born in mind when considering them.

### 3.1 Iconography

The majority of information about ancient organology has historically been achieved by study of two-dimensional iconographic representations of the instruments. This is particularly true in the classical world, where musical instruments start to appear on vase paintings from the Greek Archaic period [Mass 89] and become prevalent from the 4<sup>th</sup> Century onwards. This can be explained by two reasons: the development of amateur musicianship, which accounts for the number of domestic scenes; and the visual epithets which ensured that musical instruments were carried by specific deities as a distinguishing symbol<sup>5</sup>. In the Near East, painted representations are fewer, partly because of a preference for non-pictorial patterning in decoration of domestic art and also because chordophones were not used as divine symbols. However, there are exceptions, such as the use of inlay during the Ur III period on prestige goods. Much of the knowledge of chordophones in Egypt comes from the painted walls of tombs.

Although, iconographic representations of musical instruments are among the most numerous and revealing, it is important to consider them with caution.

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<sup>5</sup>For instance Apollo is generally depicted carrying a lyre.

Musical instruments are very difficult to depict by a non-specialists and many images suffer from distortion of which might otherwise be obvious to a casual viewer. For instance, a Greek vase<sup>6</sup> was presumably chosen by Landels as one of the best depictions of a kithara, when it was selected to be drawn and included in his book to illustrate the playing technique and sling [Landels 99, figure 2b.5]. However, if the image of the kithara is separated from the depiction of the player, it is possible to see that parts of the instrument which should be in vertical or horizontal alignment are not, especially if the image is rotated and horizontal and vertical guide-lines are drawn (C and D). See figure 1.

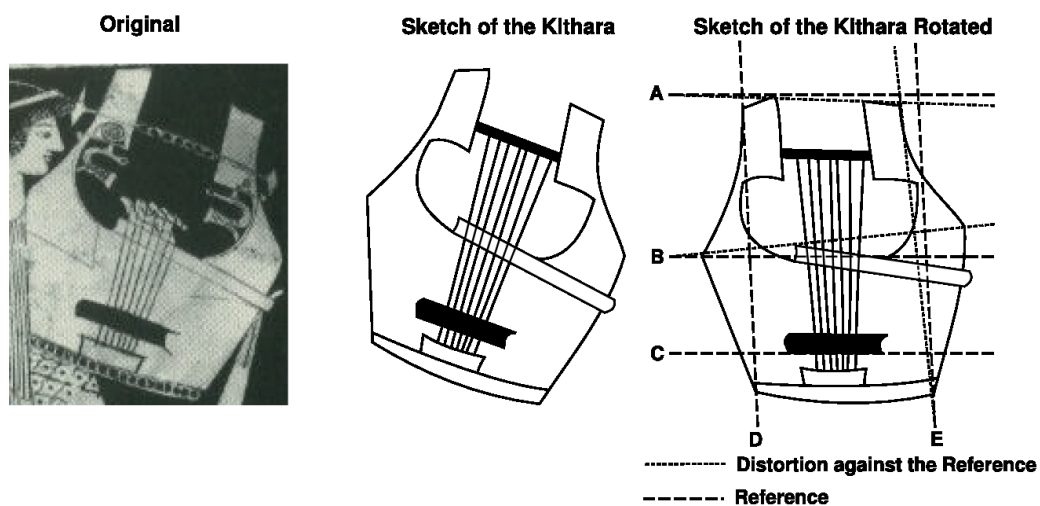


Figure 1: Example Distortion in Pictorial Representations of Chordophones

An additional problem is that iconographic representations of musical instruments tend to depict the instruments from the front (or occasionally the back) which gives little sense of the depth of the instrument. This is most notable in the case of the kithara where two-dimensional representations of the instrument appear to show the belly of the instrument as a flat plane whilst all

<sup>6</sup>Catalogued as *Apollon 84* in the *Corpus Vasorum Antiquorum*.

three-dimensional representations show the belly as being sharply angled away from the performer in the middle of the instrument, giving an approximate side profile, as shown in figure 2.

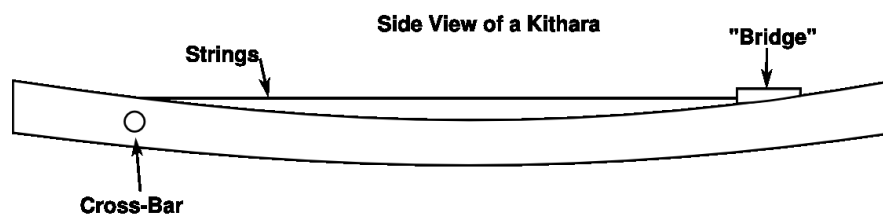


Figure 2: A Side-View of a Kithara

### 3.2 Sculpture

Sculptures, particularly those in low-relief constitute the majority of images of musical instruments in Mesopotamia and Anatolia. Low reliefs have similar characteristics to iconographic representations, although the small amount of depth can offer some idea of a third-dimension (for example [Manniche 75, plates I–VIII]). Low-relief sculpture in the Near East is best known as monumental bass-relief but is also present in vases (for example [Akurgal 01, p.g. 126]) and clay, plaster and ivory plaques (e.g. [Frankfort 96, figures 72 and 133]). Sculptures of chordophones in-the-round are particularly rare but are found, particularly in the Classical world [Higgins 65, for example, pg. 62]. The main disadvantage of all sculptures is the problem of carving sufficiently fine strings, especially when, as frequently occurs in Mesopotamia, a group of musicians is depicted and their instruments overlap (for example, [Budge 14, plate XVI]). Therefore, for working out the construction of instruments, individual and detached representations are preferable.

### 3.3 Textual

A separate course of study, generally conducted separately from a study of the archaeological record, is an examination of the variety of texts that relate to music. Of particular interest have been the few texts which either give musical notation or attempt to explain how a particular musical instrument is played or tuned. Unfortunately, when taken on its own, this approach suffers from two problems: these texts are quite few in number (and none exist in Egypt [Anderson 76]) and, due to the combination of technical vocabulary and the difficulty in expressing musical sounds in words, the language used is often so exceptionally obscure that translations are still almost impossible. The problem is particularly acute with the Mesopotamian texts. For example, recent efforts at studying the best preserved Mesopotamian text detailing the method of tuning a lyre, have concentrated not on translation but on working out the general instruction given in each line [Kilmer 96]. The small number of texts also mean it is difficult to achieve a full over-view of the development of different instruments, although individual texts can reveal very detailed information about particular instruments (such as the how the strings were named, which has tempted several authors into attempting to work out how the instruments were tuned [Kilmer 96]). This does mean that there is great potential for more to be learned if more texts can be found and accurately translated.

## 4 Definitions

### 4.1 Classification of Instruments

Unfortunately, the classification of ancient instruments has proved excessively complicated with almost every author suggesting a new method and terminology. This, in turn, has made what should be a simple question of definition very complicated and, in several works, the definitions used are often not obvious until the entire text is read. In the study of modern societies, musical instruments are still generally classified by the Hornbostel–Sachs system, and their method is generally used as a starting point for such discussions (for example, [Norborg 95, pg. 4] [Lawergren 01, pg. 441]). Their definition of a chordophone is an instruments where

one or more strings are stretched between fixed points [Hornbostel 61, pg. 20]

However, within the class of chordophones, the definitions given to the different types of instruments are problematic. Hornbostel and Sachs placed great emphasis on the relationship between the *string bearer* (the part of the instrument which holds the string in tension) and the *resonator* (which amplifies the sound the sound of the string). Therefore, under the Hornbostel–Sachs system, all the chordophones in the Aegean and Ancient Near East are of the *composite* type, with their sound-box and string-bearers being inseparable. The instruments are then members of one of two main families, either the *lutes*, where the plane of the strings runs parallel to the resonator and the *harps* where the plane runs perpendicularly and the strings are usually supported by a neck. See figure 3.

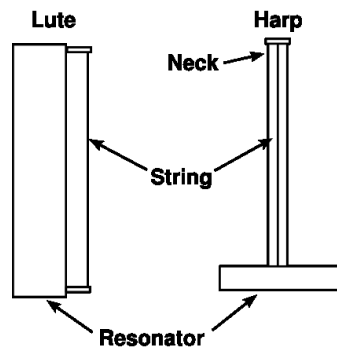


Figure 3: Diagram Comparing a Lute and a Harp

For the study of musical instruments in the Aegean and Ancient Near East, this system is not helpful as it places too much emphasis on the construction of the body of the instrument without considering the totality of the structure of the instrument<sup>7</sup>. For example, the Silver Lyre from Ur would be placed in the *box lyre* category with the Greek Kithara despite the very great differences in their construction, conception and form of use. See figure 4.

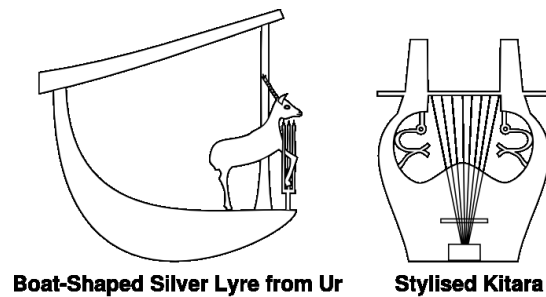


Figure 4: The Silver Lyre from Ur and a Kithara

This issue seems to have been caused by the proliferation of classification systems within the literature and has been compounded by the specialist nature of most works on the subject which tends to result in systems which cannot easily

<sup>7</sup>Perhaps a necessity caused by the attempt to produce a universal classification system

be applied across the entire region. Therefore, the system of division which is given by Manniche [Manniche 75, pg. 36] which divides chordophones into one of three families: *lyres*, *harps* and *lutes* seems appropriate, especially if the definition of a lute can be slightly modified to allow the action of playing the instrument to be taken into consideration. This does mark a slight diversion from more traditional classification systems, which consider construction alone (or, as in the Hornbostel–Sachs system, level playing techniques as an appendix) but this seems justified, especially as the alternative seems to be ever-increasing obfuscation. Therefore, one should consider *lyres*, where the strings are suspended from a cross-beam or yoke; *harps*, where the strings are suspended from a single piece of wood, a neck, in such a way that they cannot be pressed against it and *lutes* where the strings run parallel with a neck and finger-board in such a way that they can be pressed against it.

## **5 Materials and Construction**

### **5.1 Strings**

The strings are the basis of any chordophones and an understanding of the technology used in the manufacture of them seems vital in order to fully understand the development and evolution of any ancient instruments.

Strings for chordophones have only been successfully made out of a small number of materials, such as animal gut or sinew, wire, silk or horsehair. In pre-modern times, outside silk-producing regions, the only material which was widely adopted was animal gut and this seems to be the only material that



could have been practically used in the Aegean and Near East. This is also supported by archaeological evidence, with the remains of strings being found with a number of preserved instruments from Egypt [Scott 44, pg. 162] and the use of gut strings being strongly hinted at by the plaster casts taken by Woolley in the Royal Cemetery at Ur. There is some debate amongst those who specialise in Egypt as to whether the strings, especially in the Old Kingdom, were made from some form of vegetable fiber so that priests would not violate the prohibition on coming into contact with animal products when they plucked the strings [Arroyo 03, pg. 199]. However, one does rather get the impression that what might seem to be a sensible suggestion is being made against the evidence; especially as all extant strings from Egypt are made of gut and, from the comparative perspective, vegetable fiber strings are unknown elsewhere in the region.

The process of making strings from animal gut has changed little in historic times, and recent research has suggested that last generation of modern gut string manufacturers would have been happy using the equipment of their predecessor in the 16<sup>th</sup> Century and earlier [Barbieri 06]. This theoretically simple process is therefore unlikely to have changed greatly since ancient times, although, in the Mesopotamia and Egypt, the climate must have resulted in the manufacture of gut strings being a particular problem. The standard method of production involves the use of Potash (Potassium Carbonate,  $K_2CO_3$ ) to decompose and scraping to remove fatty deposits from the outside of the intestines of a slaughtered animal. The resulting strings may be twisted to form thicker strings before being slowly dried (and sometimes polished, waxed and oiled). In the hot climate of Egypt and Mesopotamia, the ability to control the decay of the fat in a

suitable manner must have been a difficult skill to acquire and there may have been particular problems with strings drying out shortly after their manufacture. It is also worth considering that the intestines must begin to be processed whilst they are still warm, to avoid damage caused by the blood vessels. This, along with the large amounts of gut required to make a string, suggests that string-manufacturers must have been associated closely or even attached to bodies which processed a large number of animal carcasses. Therefore, the attachment of the manufacturers to temples or palaces seems likely from the earliest developments of the technology.

The other major technical problem in the manufacture of strings is the process of increasing their diameter. This is necessary in order to achieve suitable mass in order to vibrate audibly at the lower frequencies and is achieved by winding many ribbons of gut together. To perform this successfully, a great deal of torque is required<sup>8</sup> and it was possible that the difficulty of achieving this for longer strings had effected a limit on the size of chordophones, especially as the number of ribbons required to form a string grows exponentially as the diameter increases. Indeed, to take the scaled-drawings of lyres produced by Lawergren as an example [Lawergren 98, pg. 44], the majority of lyres produced had a string-length which was approximately the length of a man's torso and head. This length of string would only require a minimum number of ribbons<sup>9</sup>, whereas if the instruments were to average a foot or so longer (and therefore be drawn as having a string length to the players' knees) and have been tuned to a pitch that would have produced a similar timbre, then the number of ribbons,

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<sup>8</sup>In modern times, a cast-iron machine is often used [Barbieri 06].

<sup>9</sup>A modern manufacturer, such as Daniel Larson, suggests between 3 and 8.

effort and resources required would have grown exponentially<sup>10</sup>.

Strings made from animal guts in this method have relatively few uses beyond that of music, as the key properties which make them suitable for use in instruments: great strength and great elasticity, are not ones which are particularly desired elsewhere. Indeed, in modern times, the only main uses for gut strings are in the strings of tennis rackets, as suturing (due to its organic properties) and in certain traditional crafts (such as clock-making). Although gut strings could be used as a general 'stuff' for rope-work, the great difficulty of creating gut strings when compared to those made out of plant-matter (especially in Egypt and Mesopotamia where the plants of the Nile and the marshes would have been easy to convert into ropes) would suggest that this was unlikely. The only other ancient instance when it was vital that strings of similar properties to those used in musical instruments were used is for the production of strings for bows where a combination of great strength and elasticity is again required. This emphasises a link between the development of chordophones and bows and it is likely that manufacturing of bows throughout the different regions helped the development of gut string technology. This would particularly make sense if string-making was an occupation attached to Royal Palaces (where a suitable supply of raw materials could be found) as palaces would have a particular need for bow strings. There seems to be some circumstantial evidence to back this up, as the chordophones with the greatest number of strings, the harps developed during the Neo-Assyrian period, were produced, seemingly<sup>11</sup> at a time when the bow was being revived as one of the main weapons of the court [Collon 83, pg.

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<sup>10</sup>In modern terms, to around 15 to 24 ribbons.

<sup>11</sup>From the evidence of the palace-reliefs.

54].

## 5.2 Wood

Little discussion has taken place about the woods used in the construction of ancient chordophones, even in the cases where significant amounts of original wood survive. It seems important to consider what woods were available for instrument building and the significance of such a selection. The woods currently most prized for the construction of chordophones, both Western (for example, violins, lutes, guitars etc.) and Middle-Eastern (for example, saz, ouds etc.) are spruce, for the front, and either maple or rosewood for the back. In modern organology, there has been significant discussion about the properties of woods traditionally desired for instrument-building<sup>12</sup>. The only form of maple currently present in the Mesopotamian region is *Acer negundo* [Chakravarty 76] which is native of North America. However, it seems likely that the cedar from the Levant would have been extensively used throughout Egypt and Mesopotamia as a replacement. This view seems to be supported by the surviving instruments; although exact identification of the woods is difficult, several of the lutes that have been recovered from Egyptian tombs appear to have been made of Cedar [Scott 44, pg. 162]. In the Aegean and Anatolia, the greater availability of different types of wood makes it likely that more experimentation took place, as the raw material would have been less valuable than in Mesopotamia and Egypt.

The wood used in the manufacture of chordophones is also of interest because, by determining the quality of the wood, the degree of musical care with

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<sup>12</sup>Although much of it seems to address the topic from the point of view of proving why the lore is true rather than scientifically questioning its accuracy.

which the instrument was made can be ascertained. Although the highly decorated instruments recovered from the Royal Cemeteries in Ur suggest that some chordophones were made as prestige items, the level of decoration on a music instrument does not necessarily correspond to the level of musical care which went into constructing it. Indeed, highly decorated chordophones, particularly inlaid ones, are, in modern times, often shunned in favour of simpler ones <sup>13</sup> For modern luthiers, the choice of wood is considered especially important and it is possible that by considering the quality of the wood used to make each instrument, one could ascertain how much thought was given to choosing the best wood for a musical point of view.

One area in which musical-instrument manufacturing differs from general carpentry is over the question of whether to use quarter sawed or slab sawed wood. The former, produced by sawing a log towards its centre, produces narrow planks of wood which have an even grain, whilst the later, produced by sawing a log straight across its centre, produces larger planks with an uneven grain (see 5). The expected patterns are shown in figures 5 and 6.

The quarter-sawed wood, due to its even grain, vibrates in a more uniform fashion across the entire plank, is less prone to warping (as the wood contracts and expands evenly) and has a greater strength than slab-sawed wood: characteristics which are particularly attractive to modern luthiers. These properties allow them to produce very thin and strong vibrating boards for the sides of the resonators. From the instruments that do survive in good enough condition, which are, for the most part, harps that were excavated from Egyptian tombs, a

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<sup>13</sup>For instance, the inlaid and decorated violins by Stradivarius are never considered to be amongst his finest works, despite using more valuable materials and requiring extra time to produce the extra decoration.

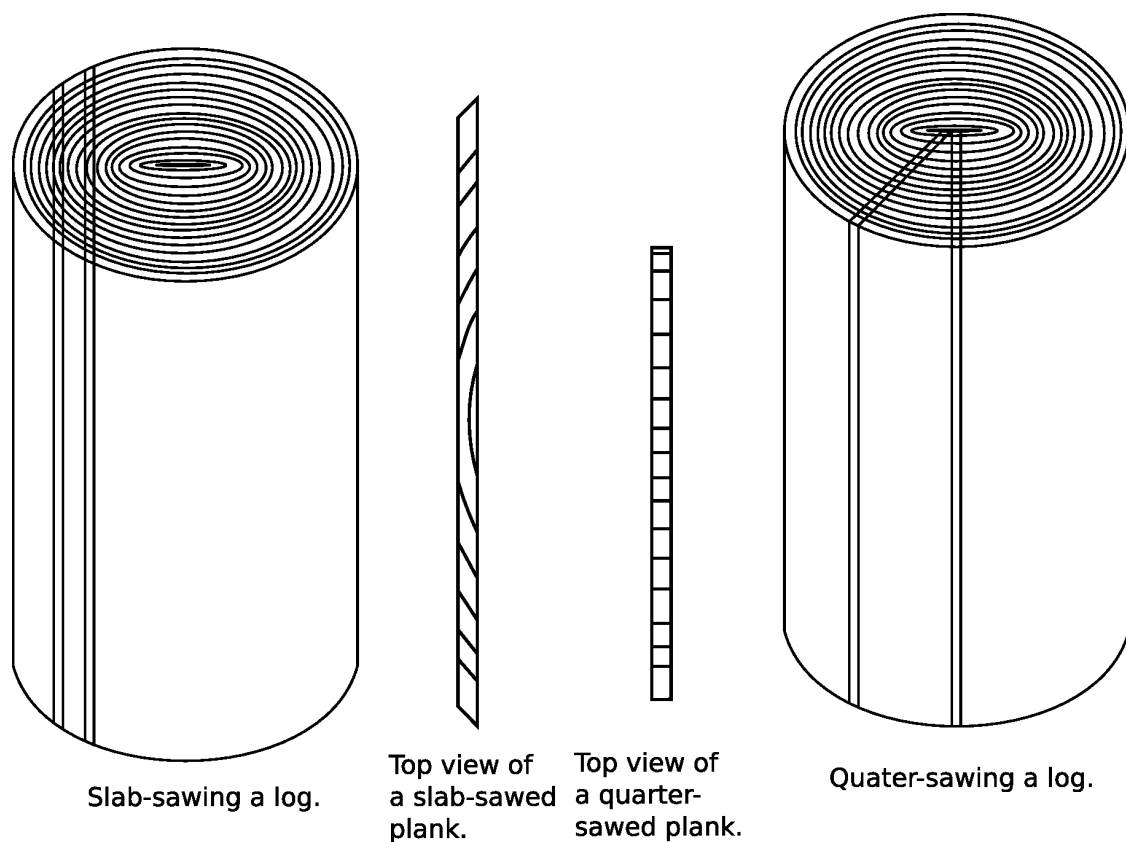


Figure 5: Quarter- and Slab-sawed Logs

study of photographs suggests that there was no particular effort to use quarter sawed rather than slab sawed wood. However, it is almost impossible to tell solely from looking at photographs, and as Egyptian harps are noted for having a skin covering which acted as a resonator [Lawergren 80, pg. 165], they are probably not a representative sample of instruments where the wood was critical to the sounding function of the instrument. Although it is beyond the scope of this work, it seems that a more in depth study of this wood of ancient chordophones, looking in detail at some of the fragmentary remains; better preserved instruments and the plaster-casts made by Leonard Woolley during his excavations at

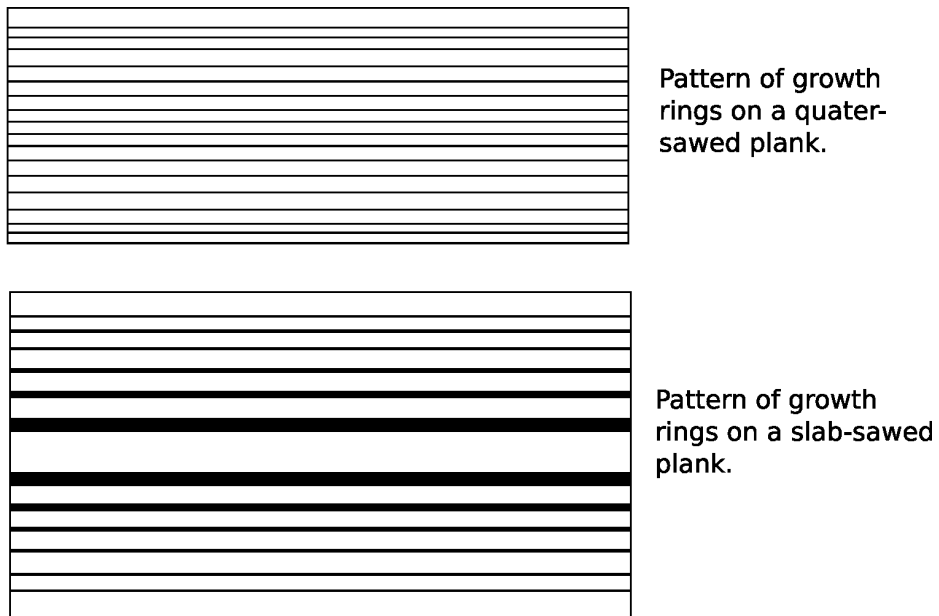


Figure 6: Quarter- and Slab-sawn Planks

Ur [de Schauensee 02, for example, plate 26] might be helpful and shed some light onto the level of care with which these instruments were made.

## 6 Forms and Designs

### 6.1 Harps

Harps are found throughout the Aegean and Ancient Near East, although they are particularly concentrated in Egypt and Mesopotamia. In essence, there seem to be two main types of harp; those that were developed from the musical bow and a boat-harp, where, unsurprisingly, the instrument has the appearance of a model boat.

The musical bow, which consists of a single string stretched by a parabolic

shaped piece of wood (see figure 7<sup>14</sup>) is arguably the simplest form of harp and although there is no direct evidence for them to have existed in the Aegean or the Near East, later developments suggest that such instruments must have formed the basis for the simplest harps in many different cultures, particular Mesopotamia [Frankfort 96, Plate 31] and Greece. This is because the simplest harps in these societies consist of a Musical Bow with the addition of a number of extra tied along the sides of the wooden frame.

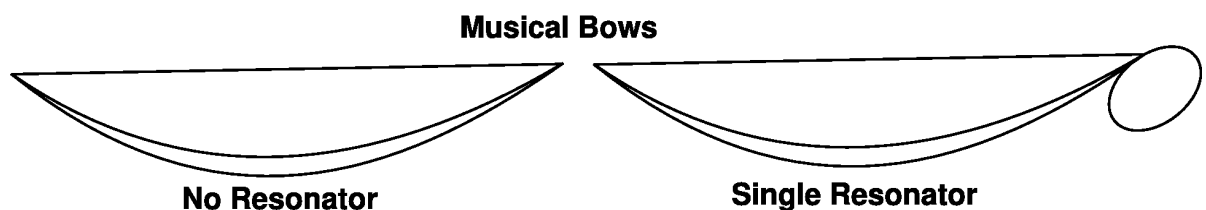


Figure 7: Musical Bows

It is likely that such harps began to be constructed and began to supersede the simple musical bow at quite an early stage, perhaps linked to the development of the composite bow. Due to the curvature of the wood and the constant tension of the strings, the construction of the instrument has to be strong in order to avoid the tension of the strings deforming the wood. It therefore does not seem unreasonable to associate the development of the simple harp with the discovery of the laminating technique required to make composite bows in the middle of the third millennium. The two main advantages of a composite bow over a standard wooden one, namely its ability to hold its tension for a long period of time and an ability to achieve the necessary amount of power with a shorter bow [R. Miller 86, p.g. 181-182] are advantages which are also of importance to the manufacture

<sup>14</sup>Such bows may have a resonator attached to one end or use the mouth for amplification [Balfour 02, c.f. Plate XIII].



of harps. The first characteristic can obviously be applied to a chordophones as it allows the same frame of the instrument to be retained over a long period of time, whilst the second would allow smaller instruments as the frame could be shaped as deeper parabola so as to allow a greater number of strings to be affixed. Further evidence for the importance of the composite bow can be seen in the drawings of musical instruments by the Hittites (for example, see figure 8) and the inhabitants of the Levant [Frankfort 96, Plate 316] which often depict parts of the instruments <sup>15</sup> with exaggerated versions of the recessed tips found on composite bows. This seems to be a residual recollection of composite bow heritage of the instruments.

However, the invention of the boat-shaped harp, with the hull acting as a resonator and with the strings running at an angle between the 'mast' and the 'deck' seems to have been the most important innovation, in the development of the harp. This instrument was probably first invented in Egypt in the Fourth Millennium [Duchesne-Guillemin 81, pg. 293], and it is first found in Mesopotamia in the Old Babylonian period [Frankfort 96, plate 123]. From that period onwards it seems to become the dominant form of harp in Mesopotamia, with constant refinements being evident through to the Neo-Assyrian period when the instrument seems to have reached quite a sophisticated state, with a great number of strings, some of which were considerably longer than those which are found on other instruments of the period, [Frankfort 96, Plate 205]. These later harps seem to be as complex in form and design as those encountered in Egypt and does suggest that the different cultures were happy to adopt, use and modify instruments not conceived locally. Harps seem less prevalent in Anatolia,

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<sup>15</sup>(in the 8 case, the yoke)

the Aegean and the Levant, although it does appear that a few specimens of the later, Neo-Assyrian type instruments were still being played in Greece in the 5<sup>th</sup> Century and later.

## 6.2 Lyres

Lyres are found throughout the Ancient Near East and Aegean and are perhaps, due to their proliferation appearance in the Bible and Greek mythology, one of the most enduring and notable features of the organology of these region. Lyres seem to be present in the Near East from a very early date; Lawergren's survey [Lawergren 98] suggests their presence in Mesopotamia from early in the Third Millennium. The lyre is, initially, less frequently encountered in Egypt and its first use seems less easy to ascertain, although the instrument, once introduced and despite being 'foreign' quickly became an important part of Egyptian musical culture [Duchesne-Guillemin 81, pg. 294]. By the second millennium it is frequently depicted in iconography and a number of examples have survived. In the Aegean, the lyre appears to have been the first chordophone to have been developed, with the first representations of it appearing in the late third millennium [Vorreiter 75, pg. 94]. Lyres, in various forms continued to be the main instrument of Aegean music until the Roman period and beyond.

There is little evidence to suggest exactly how the lyre was first developed, although it is possible that it, like the harp, originated first from a musical bow, where the curvature of the bow became so pronounced that a third side was added, making a triangle, with the strings stretched from a small point [Vorreiter 75, for example, plate XXI, a]. However, it seems that the development

into a true lyre fairly quickly, and early depictions of the instrument tend to show it in a form that is immediately recognisable and comparable to the later instruments. Part of this can probably be explained by the simplicity of the construction of a lyre when compared to a harp or lute; the frame-work of the instrument is essentially a box-shape and unlike even simple harps (where the frame has to be carefully tensioned) as long as the instrument was robust enough not to warp when the strings are first installed, construction issues should not have been a problem. This was particularly the case in Greece where it was discovered that a simple frame-work could be installed into a shell of a *testudo marginata* which, in turn, both supported the frame and acted as a resonator [Landels 99, pg. 61].

A great number of different forms of lyre were developed during the several millennia during which they were commonly played, which makes even a simple survey of the different types a complex under-taking. Several authors have attempted to classify and resolve the questions as to which lyres influenced another<sup>16</sup>. However, much in the same way that modern double-basses may vary greatly in profile, shape and construction, yet still be variations of the same instrument, it is difficult to work out exactly how much the variation in profile affected whether the instruments were distinct from one another. However, one particularly distinct form of Lyre, the Giant Lyre, acts as somewhat of a case study as, due to its size, it is fairly easy to differentiate from other, more subtly distinct lyres. It therefore seems sensible to consider this lyre first, and separately, from the smaller instruments which are more similar in profile and cannot be so easily and quickly separated.

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<sup>16</sup>In particular Lawergren's [Lawergren 98] and Norborg [Norborg 95]

### 6.2.1 Giant Lyres

Giant Lyres appear to be a unique innovation within the Ancient Near East and are, perhaps, one of the most obvious examples of an exchange of ideas across the different regions. Although no known remains of the instruments have survived from any of the cultures within the region, a sizable number of representations exist. These suggest that, surprisingly, the two areas where use of these instruments was most prevalent was Egypt, where numerous representations exist [Manniche 75, 'The Giant Lyre'], and Anatolia, where a Giant Lyre appear less frequently but are present on vase paintings (such as the Inandyk vase, (figure 8)) and elsewhere. According to Lawergren there is also circumstantial evidence for the instruments in the Levant, due to the Canaanite dress of the performers [Lawergren 98, pg. 60] depicted in Egyptian reliefs, and in Mesopotamia, due to other unspecified depictions.



Figure 8: Detail from the Inandyk Vase

Although the size of the Giant Lyre in itself is unusual, depictions of the Giant Lyre also notable for showing two distinct playing techniques: they always show the instrument being played by two musicians and, although it is not always entirely clear from Egyptian representations (due to limitations the artistic conventions imposed on accurate representation of depth), it appears that the musicians stood in front the instrument and plucked the front of the strings with both their hands, rather than having one hand on either side.

In terms of construction, the Giant Lyre would also have been unusual, compared to other instruments of the region, as it would have required exceptionally long strings. Although it is perhaps impossible to work out with great precision, the exact height of these instruments it is worth considering that all depictions of the instrument show it as being taller than the players performing on it. This would allow the instrument to play considerably lower than the other lyres of the time but would mean that for the instrument to reach its full potential in terms of volume and depth of range, then the instrument would have required quite thick, wound strings, which are more difficult and considerably more labour-intensive to produce than the thinner strings required for the smaller instruments. This is based on the assumption that these two characteristics were the main reasons for using the instrument but the assumption does not seem .

The period during which these instruments are most frequently encountered is around the 14<sup>th</sup> Century and it seems possible that the spread of the these instruments could be linked to the greater contact between the different Kingdoms in this 'International' period of Near Eastern history. Although the Amarna letters do not mention lyres or musicians being directly exchanged it does seem possible that the use of the Giant lyre could have expanded from the point of

its conception by musicians accompanying royal and others parties which crossed between the different kingdoms.

It seems likely that, initially, it was those capable of playing the instruments that were exchanged as depictions of Giant Lyres seem to suggest that these instruments were constructed within the cultural sphere of each culture and were not produced in a specific location and then sent to each court. This is most evident by the profiles of the instruments which are markedly different in, for instance, Egypt and Anatolia and suggest, due to the similarities in the profiles with smaller lyres of the region, that the instruments were being made in a regional style to a more widely-considered pattern.

### **6.3 Other Lyres**

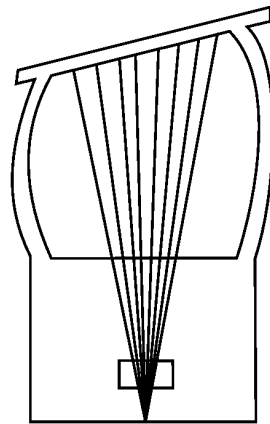
The division of smaller lyres into different categories is a controversial and difficult topic, although there seem to be two categories of lyre which can be distinguished from the others: the asymmetric lyre and the round-based kithara.

Lawergren plays down the importance of whether a lyre is symmetrical or not, commenting that such a system:

is not based on clear differences, since handmade instruments are very seldom perfectly symmetrical, and does not correlate with any geographical, temporal, or culturally conditioned parameters. [Lawergren 98, pg. 41]

However, and accepting the inevitable distortion that occurs when instruments are drawn, it does appear that a number of representations of lyres in Egypt, Mesopotamia and Anatolia show the instrument with a yoke that is consciously

not running parallel with the base of the instrument, in the manner of 9 [Frankfort 96, see, for example, plate 360, where the depiction of two types of lyre seems to be an effort to emphasize the symmetry of one and the asymmetry of another]. Furthermore, if one assumes what has been argued elsewhere in this work, that the types of instruments used was not heavily dependent on 'geographical, temporal, or culturally conditioned parameters', then it seems possible that the development of asymmetric lyres took place in Mesopotamia, where they are known from the middle of the Third Millennium [de Schauensee 02, for example, plate 23] and moved outwards to Egypt and Anatolia, where they were commonly found from later dates.



Generic Egyptian "Assymmetric" lyre

Figure 9: Asymmetrical Lyre

The other form of lyre which seems to have had a particularly defused usage, is the round-based kithara. This type of lyre is particularly known from the Aegean, when it appears on vase paintings from the 14<sup>th</sup> century onwards [Landels 99, pg. 47]. What particularly distinguishes this instrument is its combination of a round base, short and thick uprights and a very thin yoke (see 10), which particularly

stand out when compared to lyres with a more box-like construction. As an instrument, it seems to have quickly diffused from the Aegean into Anatolia, where it appears, juxtaposed with an asymmetric lyre in a frieze from Karatepe [Frankfort 96, plate 360], suggesting some form of cultural transmission between the two cultures. However, a lack of further examples hinders a more detailed explanation or understanding.

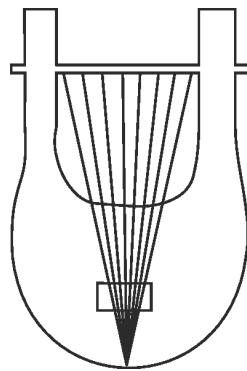


Figure 10: Round Based Kithara

## 6.4 Lutes

Chordophones with strings that stopped by the fingers against a board in order to change their sounding pitch are considerably less frequently encountered in the Ancient Near East and Aegean and, as such, are perhaps the most straightforward to perceive example of an instrumental design defusing, over time, away from the location of its conception and into other regions.

Within Egypt, Mesopotamia and Anatolia, all lutes seem to confirm to a specific pattern. They are all long-necked, with a small but slightly deformed resonator (see figure 11). The width of the fingerboard suggests that only a



few strings could be used, perhaps between 3 and 5 (a number which seems to be supported by the depiction a long-necked lute on a terracotta plaque from Babylon [Duchesne-Guillemin 81, plate 64] which seems to have either 3 or 5 strings, depending on whether the relief or the indentation is taken to be a string). Although a number of the depictions of the lutes by the Hittites, most notably those carved in relief at Carchamish, seem to suggest that these lutes had some form of fretting due to the small lines carved frequently and perpendicularly across the fingerboard, no other depiction depicts the lute in enough detail to suggest that either frets were constantly or never present.

In Greece the situation is somewhat complex as most of the existing depictions of lutes are terracotta figurines [Higgins 65, pg. 62]. These show the lutes as being somewhat more 'robust' in their construction, with significantly thicker fingerboards and shorter necks. This can mostly be explained as a result of the difficulty of modeling a lute with a long, thin neck in this medium, a point backed up by the only Greek depiction of the instrument in another format, as a relief from the base of the 'Muses of Mantinea' [Higgins 65, plate XVII, 3], which is very similar to the instruments encountered in Egyptian and Mesopotamian art. Indeed, the damage to this depiction, (the fingerboard and neck of the instrument between the Muses' two hands has completely broken away) emphasizes why the modelers of the terracotta figurines would have wished to increase the strength of their figures by extending the middle section.

It seems that from the dates of the carving the long-necked lute was a long-lived instrument throughout the regions, which is somewhat surprising considering how few depictions there are of it, in comparison with other chordophones. The first representations of the instrument in Mesopotamia date from the 2600

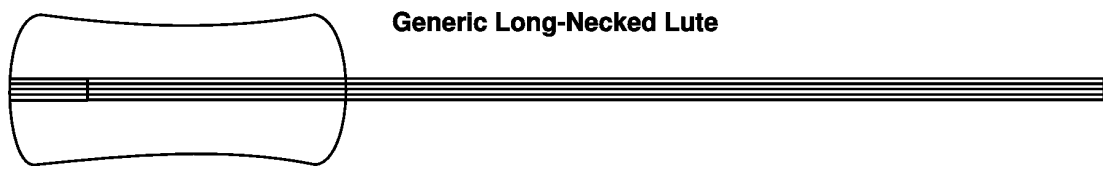


Figure 11: Lute

B.C.E. [Duchesne-Guillemin 81, pg. 296], with the instrument starting to be depicted in Egypt from around 1500 B.C.E. [Duchesne-Guillemin 81, pg. 296], Anatolia from 1300 B.C.E. and then Greece from the 400 B.C.E.. In each culture that depicts it, it appears that that from its inception, the instrument then had a reasonably long period of popularity. Explaining these differences in dates is somewhat difficult. On the one hand, despite Duchesne-Guillemin's separation of the lutes of the different cultures (he describes them variously as 'rustic', 'voluminous' and 'elaborate' [Duchesne-Guillemin 81, pg. 296]), the ancient long-necked lutes seem too similar in construction for them to have been conceived separately in each region where they are present. It has been suggested by various authors that the instruments were initially introduced from Susa where the Elamites produced a large number of small figurines depicting a dwarf playing a long-necked lute of a form very similar to that in Egypt [Dunn-Vaturi 03, pg. 107] and although this seems the most likely possibility, it still leaves a number of unanswered questions as to how the instruments first came to be recreated in Mesopotamia and why the lutes are depicted as being played by the dwarf-like figures, but not elsewhere. Indeed, the caricature of the lute-players in Susa might even suggest that the instrument was developed there, but imported from elsewhere, before being transmitted on to the Near East.

## Conclusions

Studying the organology of the instruments of the Aegean and Ancient Near East, reveals a great deal of cultural interaction between the different cultures present in these regions. Such interaction seems to have been extended over a long period of time and resulted in many types of chordophones being transmitted across cultural boundaries. The ease at which such imports were adopted is particularly notable, with some imported chordophones superseding the local instruments. One established within another culture, the adoption of the pattern of the instrument to suit local design aesthetics also seems to have quickly occurred and such 'adopted' instruments continued to be evolved and refined, even when removed from the culture which conceived them.

Of the three main forms of chordophones, the harp appears to have been oldest instrument that survived into the historic period, as the most basic forms of it seem to be a small development of the simplest chordophone, the musical bow. A more complicated version, with a larger resonator, the boat-harp seems to have evolved first in Egypt and then been transmitted to Mesopotamia, and eventually onwards to the Aegean, where it became the instrument of choice.

Unpicking the many different forms of lyre in order to work out patterns of evolution is a difficult, if not impossible, task. However, a small number of specific types of these instruments are more easily perceived, and these show extensive transmission of musical ideas between all the major regions. The development of the lute, which seems to have occurred outside the regions discussed, also suggests interaction with cultures from further afield.

The study of materials used to produce chordophones is also revealing, as it

helps explain certain aspects of the development of chordophones throughout the regions, particularly by linking the technologies required to build instruments into those required to construct other objects. There is still much unexplored in this area, and a systematic study of the construction techniques and materials of the various surviving chordophones would be particularly worthwhile and revealing.

In conclusion, there appears to be much work still remaining for this field of study. Systematic and comparative studies of ancient organology are still rare, and although there is a reasonable amount of evidence to work from, most current studies seem not to be able to explore the area in any great depth. It is also unfortunate as to how little textual evidence there is to assist such study. However, it is hoped that if work continues in this field and the comparisons made between the different cultures become more sophisticated, the cultural interactions between the various societies of the Aegean and Ancient Near East will be understood in greater detail.

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