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Mesopotamia

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Mesopotamia.

The land between the Rivers Tigris and Euphrates that was occupied by a number of different peoples and empires from the 5th millennium BCE until late antiquity; it now forms part of modern Iraq and Syria. The musical culture of these ancient peoples, in particular the Sumerians, Akkadians, Babylonians and Assyrians, is well attested from the 3rd millennium BCE. Such evidence provides information on the various instruments used, the musicians who played them, and details of performing practice and music theory; the texts of poems and hymns together with directions for their musical performance are also preserved on many tablets.

Mesopotamia is of singular importance to the history of music. This is partly due to the fact that the first known theory texts are from Mesopotamia. Of greater importance than this is the fact that Mesopotamia is the first instance where evidence of musical activity is documented in all three categories of source material which bear witness to the ancient world. Through the use of contemporaneous material remains of instruments, images of music making and thousands of texts which refer to music and musicians, the possibility exists to form a holistic picture of a musical culture. This is an ideal which cannot be attempted with earlier musical cultures, where only remains of instruments and/or images of music-making are known. Despite the great importance which Mesopotamia holds amongst ancient musical cultures, and the richness of our sources, the present state of our knowledge is fragmented and incomplete. Thus, many basic questions concerning the musical culture(s) of Mesopotamia remain unanswered, and the writing of an holistic history of the subject presents fundamental challenges.

1. Historical background.

The Sumerians settled in southern Mesopotamia by about 4000 BCE and gradually established a number of independent city states, of which the most important were Uruk (Warka, Iraq), Nippur and Ur. The first signs of literacy appeared in about 3000 BCE and by 2500 a system of cuneiform writing had developed, which was subsequently used to transcribe the languages of later Mesopotamian peoples. In about 2350 Sumer was conquered by the Akkadians, a Semitic people led by Sargon I, who united the city states into a single empire; from this time onwards written records in cuneiform script were preserved in both the Sumerian and Akkadian languages. With the decline of the Akkadian empire, Sumerian civilization and its language revived during the period 2150–1800 (the Neo-Sumerian period) until it was again conquered by other settlers, such as the Elamites (*see* **IRAN, §I, 2(I)**) and Amorites. Among the important city states of the Amorites was Mari (modern Tell Hariri) on the Euphrates, which, between about 1900 and 1700, built up a library of thousands of cuneiform tablets in the Sumerian and Akkadian languages. The Amorites also expanded the city of Babylon, making it the most powerful centre in Mesopotamia, especially from the reign of Hammurabi (1792–1750). The cuneiform writing system, together with the Sumerian and Akkadian languages, spread west in the 3rd and 2nd millennia, to Syrian cities such as Ebla (Tell Mardikh) and Ugarit (modern Ras Shamra).

In about 1200 BCE the Assyrians, a people of the upper Tigris, began to increase their territory and power, and by 1100 BCE had established their own empire in Mesopotamia, conquering even Babylon itself. Although Assyrian civilization went through a period of decline after about 1000, it was revived from the 9th century BCE during the reigns of Ashurnasirpal II and his successors, who established their capital at Nineveh. Nineveh, however, was sacked by the Babylonians and Medes in 612 BCE under the leadership of Nebuchadnezzar II, during whose reign Babylon once again became the dominant city in Mesopotamia until it was conquered by the Persians in 539 BCE. When Babylon and the Persian Empire fell to Alexander the Great in 331, Seleucus, one of Alexander's generals, became satrap of Babylonia. His successors, the Seleucids, ruled over an increasingly Hellenized kingdom until the last king died in 64 BCE.

Mesopotamian history may be divided into periods with the following approximate dates (all BCE):

3300–3000 Pre-literate (Uruk VI–IV) period.

3000–2900 Proto-literate (Jemdet Nasr) period.

2900–2350 Early Dynastic period.

2350–2150 Old Akkadian period.

2150–1800 Neo-Sumerian (Ur III; Isin/Larsa) period.

1800–1600 Old Babylonian and Old Assyrian periods.

1600–1150 Middle Babylonian and Middle Assyrian periods.

1150–500 Neo-Babylonian and Neo-Assyrian periods.

500–65 Late Babylonian-Seleucid period.

2. Pre- and Proto-literate periods.

The earliest evidence of musical performance in Mesopotamia dates from the 5th millennium BCE, to which period belong a complete bone wind instrument and two fragments of the same type found at Tepe Gawra in northern Iraq. From the 4th millennium dates a stone from Megiddo (modern Tel Megiddo, Israel; *c*3700–3000 BCE) on which are carved a musician and a string instrument; the latter has been interpreted as resembling either a harp with a pillar (see Kilmer and Lawergren, *MGG2*) or an asymmetrical nine-string box lyre with one arm 'strongly curved' (see Norborg, 1995, pp.30–31).

An impression from a carved stone cylinder seal found at Chogha Mish in south-west Iran (*c*3200 BCE) depicts a feasting scene with a singer and musicians playing a round harp and a hand-beaten drum; the two horn-shaped objects on the seal are likely to be clappers (*see* **IRAN, §I**, [not available online]). To the same period belongs a fragment of a clay whistle from Uruk, in southern Iraq. Clay tablets from late 4th millennium Uruk are probably the earliest known examples of writing, consisting of economic records and lexical list of objects and professions. It is in this body of texts that the pictograms for 'harp' and 'musician' make their first appearance.. The rich evidence of instruments and texts from the subsequent Early Dynastic period indicates that a variety of string, wind and percussion ensembles was already active in the Proto-literate period.

3. Early Dynastic and Old Akkadian periods.


Silver lyre with figure of stag.

By the time of the first Sumerian dynasties in the early 3rd millennium BCE, music clearly played an important role in life at the royal palaces, and instrument makers had mastered the art of costly ornamentation. The most spectacular evidence from this period comes from the Royal Cemetery at Ur (*c*2600 BCE) where the remains of eight symmetrical and asymmetrical bull lyres, one round-bottomed (or 'boat') lyre and two round harps have been excavated, together with the bodies of the musicians buried with them. Although these are the only surviving examples of wooden instruments from this period, the existence of other types is known from depictions on cylinder seals, shell and stone inlays, and sculptures in relief and in the round. The inlaid front panel of one of the Ur lyres, for example, shows an animal orchestra with an ass playing a bull lyre together with a jackal playing a sistrum and drum, and a bear clapping and dancing. Such evidence indicates that lyres ranged in size from small, easily portable instruments to those as tall as an adult and that most had between four and 13 strings.

Five fragments of a pair of silver pipes were also found at Ur; the pipes have finger-holes but show no evidence of mouth reeds. Idiophones (clappers and sistra) are depicted on the inlaid decoration of Early Dynastic lyres and on cylinder seals; drawings on pottery show small frame drums and women clapping their hands. From the Old Akkadian period dates the first evidence for the long-necked lute (Sumerian GIŠ.GÙ.DÉ = Akkadian *inu*; see Eichmann, 1998; in the following account Sumerian words are represented by upper case letters and their Akkadian equivalents by italics). According to two carved cylinder seals these instruments had two or three strings. In one carving the lutenist sits on a stool and performs before seated deities; in the other he sits back on his heels and plays to two deities (one standing, one seated) and a scorpion-man. An inscription on the latter cylinder seal in the Sumerian language records that it belonged to a male lutenist named 'Ur-ur the musician' (LÚ.NAR).

The earliest lexical texts (lists of Sumerian and Akkadian words and phrases) of the second and third Early Dynasties contain many Sumerian terms for musical instruments and their parts, for a great variety of vocal and instrumental performers and

other types of entertainer (cult and lay), and for musical compositions and their sections; also evident is a specialized technical vocabulary for tuning procedures and performing techniques (vocal and instrumental). While there is no single word for 'music' in either language, common words associated with music-making are NAM.NAR = *nârūtu* ('musicianship'), GÙ.DÉ = *nagû* ('to exult', 'sing joyously'), I.LU = *nigûtu* ('merry-making'), ŠÌR = *zamāru* ('to sing', 'play'; used for voice, strings and drums) and ŠU.TAG or TUKU = *mahāṣu* ('to hit', 'beat', 'tap'; referring to percussion and reed pipes). Dozens of Sumerian and Akkadian terms designate various types of song, lament and hymn.

The royal archives of the city of Ebla in northwestern Syria (*c*2300 BCE) show that already in this period there was a clear hierarchy of musicians led by the 'chief musician'. Various other types of male and female musicians were involved in various performances, such as the royal marriage ritual. Musicians from Mari are known to have travelled to Ebla. The sources from Ebla demonstrate the itinerant, international nature of the musical profession, which is well known in later Mesopotamia. The name of one composer-musician from the Old Akkadian period has come down to us: Enheduanna (*fl c*2300 BCE), Sargon I's daughter, who composed sophisticated and complex hymns in her role as high priestess in the temple of the Sumerian moon god NANNA (Akkadian Sîn) at Ur and as sponsor of the cult of the goddess INANNA (Ishtar). The texts of several of Enheduanna's hymns, including 'The Exaltation of Inanna', are known from cuneiform tablets (see Hallo and van Dijk, 1968).

4. Neo-Sumerian period.

In about 2120 BCE Gudea, ruler of the southern city of Lagash (modern El-Hiba), named a year of his reign in honour of the construction of a BALAG = *balaggu*, an instrument that appears to have functioned as both a harp and a drum (see below, §5). This instrument's personal name, 'Great Dragon of the Land', was also the title of one of Gudea's temple musicians. Another BALAG commissioned by Gudea was named 'Lady as Exalted as Heaven'. Large stone *stelae* of this period show giant drums (Á-LÁ) lying on their sides, with heads as tall as a man. Played by two men in alternating strokes with their hands or with drumsticks, these drums accompanied the dedication ceremonies of royal buildings and other rituals; singers and cymbal players also took part, together with men and women who clapped their hands.

Many Sumerian technical terms known from the lexical lists are set in context by a self-laudatory hymn composed by Shulgi (*c*2070 BCE), the second king of the third dynasty of Ur (Shulgi Hymn B; see Krispijn, 1990). The precise meaning of these terms, however, remains unclear. The king boasted that he understood how to play the novel instrument, the lute, the moment it was placed in his hands. On the harp and the lyre he was adept at 'tuning up' (ZI.ZI) and 'tuning down' (ŠÚ.ŠÚ), and he knew how to 'set' the mode (GÁ.GÁ) for performing a particular piece of music. He had mastered the tuning procedures of 'tightening' (GÍD.I), 'loosening' (TU.LU) and 'perfecting' or 'testing' (GE.EN) the intervals, as well as the performing techniques of 'fingertip' (AGA.ŠU.SI) and 'fingerstring' (SA.ŠU.SI). On the lute he knew how to 'adjust the frets' (SI.AK) and to manipulate the 'knots' (KAM.MA) that loosened and tightened the strings. Shulgi also claimed the ability to conduct a musical ensemble with a reed baton.

A detailed picture of the social history of musicians in Mesopotamia becomes possible from the Neo-Sumerian period onwards. There were two principal types of musician in Mesopotamia, the NAR and the GALA. Each type of musician, and their various subcategories, had specific functions in the palace and temple. Unlike the NAR, the GALA was a priest whose role was mainly cultic. The GALA recited lamentations, played percussion instruments and performed rituals. Most GALA musicians were male, although the specific gender and sexual identity of this musician has been called into question. The NAR could be either male or female. The NAR also took part in the cult, but was more closely connected to the palace, and he/she was mainly a player of stringed and wind instruments. For each type of musician there was also a corresponding chief office, the chief NAR and chief GALA; these senior positions seem to have been exclusively occupied by males. Such chief musicians of both types held important positions of responsibility in the Neo-Sumerian period. They were responsible for organizing musical events, and they were personally close to the king. Certain named musicians became well known in this period, such as the chief gala Dada.

By the end of the Neo-Sumerian period and the beginning of the 19th century BCE, the foundations were laid for the full blossoming of Mesopotamian music, evidence for which may be seen in the considerable written documentation concerning different scale types and 'Pythagorean' tuning procedures (see below, §8), together with the development of a standardized musical vocabulary in the Akkadian language.

5. Old Babylonian period.

While the earliest Sumerian and Akkadian musicians appear to have transmitted their musical knowledge orally, from the early 19th century BCE scholars in the Old Babylonian Tablet House (É.DUB.BA = *edubbû*) began to record it in writing and taught

their students about instruments and their parts, musical genres and their sections, and performing techniques and procedures, along with mathematics, classical Sumerian, accounting and other subjects.

This period has yielded the largest number of Sumerian (and bilingual Sumerian-Akkadian) literary texts (epics, myths and other poetry), hymns (divine and royal) and solo or choral laments sung to instrumental accompaniment. Nearly 100 different song types or genres are mentioned in lexical and literary texts. Sumerian hymn rubrics or section labels serve to divide pieces, indicate modal changes and signal antiphons, cadences and doxologies. Proverbs often refer to 'good' and 'bad' singing and to vocal techniques such as improvisation and tremolo. One text describes a men's chorus that called upon the goddess GESHTINANNA to set the mode and rhythm for their singing; in another text she is invoked as the muse of expert singing 'like one' as opposed to 'teamwork' singing; these terms may be interpreted as indicating unison and part singing respectively (see below, §8(i)). A Sumerian wedding song records syllabic sequences which were probably to be sung simultaneously with the words of the main song, along with specific performance instructions. A variety of musical performances is depicted on clay plaques: lute, harp and lyre players alone or accompanying other instrumentalists (e.g. frame drum players, pipers etc.), as well as dancers and acrobat-musicians (human and simian). Some plaques also show explicitly sexual scenes involving musical performance.

In the Old Babylonian period, information relevant to the social history of musicians is attested from hundreds of documents. There is abundant documentation concerning specific, named GALA musicians who were connected to specific temples in specific cities in southern Mesopotamia during this period. Of the hundreds of musicians which are known from administrative documents, particularly important and influential families of musicians, spanning several generations, can be discerned. One of the best-known GALA musicians of the period is Ur-Utu, whose house is also known from archaeological excavations. Details regarding payments and ration lists to particular musicians demonstrate their varying statuses. Royal correspondence from the city of Mari on the Euphrates has revealed particularly important information concerning the activities of musicians in the 18th century BCE. The sources from Mari show that musicians travelled with the army, that captives were trained to sing in a variety of musical styles and that orders were issued concerning the manufacture and delivery of musical instruments. Detailed letters from the chief NAR musician to the king of Mari reveal the importance music had in the palace, as shown for example, by the complaints from the king concerning the poor skills of particular named musicians. The two most important chief NAR musicians of Mari were Rišiya and Warad-Ilišu, who controlled musical activities in Mari under the kings Yasmah-Addu and Zimri-Lim respectively. Such chief musicians held an important place in the royal household; they owned land, and they were entrusted to undertake international diplomatic missions. The roles of female musicians in Mari, who mostly belonged to the royal harem, are also abundantly documented. Particular instruments were exclusively played by females. There was something like a music school in Mari. There are also suggestions from Mari that child musicians were intentionally blinded, although the reasons for this remain unclear. Our most detailed example of ritual performance in the Old Babylonian period comes from Mari; a detailed instructional text describes the roles of musicians together with acrobats, dancers and wrestlers in a cultic event for the deity Eštar.

The oldest music theory texts using the standard Akkadian corpus of terms (probably based on earlier Sumerian practice) come from the southern Babylonian cities of Nippur and Ur. Verbs of playing include *ragāmu* ('to make noise'), *lapātu* ('to touch' or 'play'), *šutēšuru* ('to set [the strings] in order') and *tarāku* ('to beat'). There are hundreds of Sumerian and Akkadian terms for string, wind and percussion instruments (membranophones as well as idiophones), although some cannot be identified beyond their classification according to general type or the materials from which they were made. Certain musical instruments were deified, and they received ritual offerings. In the Old Babylonian period, much of the Mesopotamian terminology for musical instruments was transmitted to Anatolia, where it appears in Hittite ritual texts (*see* **ANATOLIA**).

ZÀ.MÍ = *sammû* was probably the lyre, the model instrument of music theory texts. The instrument called ÁB.HI.NUN ('abundant cow') in a Sumerian hymn was most likely the bull lyre; prominent in earlier periods, it disappeared around the turn of the 2nd millennium. A text from Ugarit (now Ras Shamra, Syria) of the Middle Babylonian period uses the Ugaritic term *rimt* for a lyre, perhaps related to the Akkadian *rīmtu* ('wild cow'). A text from Mari (see Durand, 1989) refers to two ibex heads sculpted on the yoke or crossbar of a *sammû*; these lyres had wooden frames, sometimes with a skin stretched over the open side of the soundbox, and were richly decorated with lapis lazuli, shell inlay, silver, gold and other precious metals. The strings were adjusted by means of tuning sticks or rods.

The round harp also disappeared around the turn of the 2nd millennium BCE and was replaced by the angular harp. The BALAG = *balaggu*, which served as both harp and drum, had a broad soundbox serving as a resonator. The *kippatu* ('hoop') may refer to a clasp or hoop that held the drumhead in place (for a discussion of the construction of the BALAG, see Arndt-Jeamart, 1992).

Wind instruments were made of reed, wood, bone, metal and animal horn. Common terms are GI.GÍD = *embūbu* and *GI.DI* = *malīlu* or *šulpu* (both reed pipes) and SI.AM.MA ('bull horn'). The reed pipes made the piping sound *halīlu*, and the bull horn sounded *gum-ga*. Double pipes are known from the 2nd millennium onwards; a term for them may be *ṣinnatu*, an instrument whose voice was said to 'surge' (*šapû*).

Wood and metal drums with skin heads include the ÙB = *uppu*, the frame drum (round and rectangular) and the BALAG = *balaggu*. Common words for drums are Á.LÁ = *alû*, A.DA.AB = *adapu*, TIGI = *tigû* and ŠÈM = *halhallatu*. The big drums were said to sound like thunder while the small ones issued the soothing (?brushing) sound A.MÚŠ = *ahulap*. Some drums were decorated with rings or ring-jangles (*kamkammatu*). The copper or bronze LILIS = *lilissu* and the MEZE = *manzû* may have had metal heads in as much as the term KUŠ = *mašku* ('skin' or 'hide') is never used to describe them. If so, they may be classified as idiophones or gong drums (see below, §6).

Several representations exist of idiophones – sistra, cymbals, clay rattles, clappers and bells made of several different materials. However, ourknowledge of the Sumerian and Akkadian terms for these instruments is limited. Literary texts from this period identify the URUDU.KIN.TUR ('copper frog instrument'), which may have made a croaking sound. GIŠ.PA.PA.É.PA.NA = *tāpalu* ('pair of wood sticks') probably refers to a crotalum-like instrument; other clappers are called *kiskilātu*.

6. Middle and Late Babylonian and Assyrian periods.

An Akkadian text from the northern city of Ashur (now Qal'at Shirqāṭ, Iraq) catalogues at least 360 Sumerian and Akkadian song titles from 31 or more genres ranging from sacred hymns to love songs. This list appears to record the memorized repertory of an Akkadian *zammāru* (celebratory singer). The *zammāru* usually rehearsed each 'set' of songs in groups of five or six. At the end of each set he invoked Ea (Sumerian ENKI), god of water and of wisdom, skill and music, exclaiming 'May Ea command thy life!' (*Ea balāṭka liqbi*) by way of thanking the god for his accomplishment. The GALA = *kalû* (lamentation singer) and his apprentice, the GALA.TUR = *kalaturru*, collected and rehearsed musical compositions in the temples.

The Babylonian musical system spread as far as the Mediterranean coast; tablets found at Ugarit contain hymns in Hurrian (an ethno-linguistic group different from Sumerian and Akkadian). Song repertory collectors hired scribes to record the hymns together with their performance or tuning system instructions, which employed the standard Akkadian musical terminology. Many Late Babylonian copies of lamentations, which were sung by GALA musicians, contain extended vowel sequences together with performance directions. The vowel sequences have been interpreted as a mnemonic indication of relative pitch. The instructions indicate percussion instruments; they also indicate sections where playing of instruments should be suspended. Much information concerning the details of ritual performance of these lamentations is known for the Late Babylonian period; we also know a great deal about the roles and functions of the GALA musicians of the period, who copied and performed these works.

The 1st millennium BCE saw the introduction of a psaltery-like instrument, whose name is unknown, of the ivory oliphant, and panpipes with more than two pipes. Conical and cylindrical drums appear for the first time on Neo-Assyrian reliefs (see Rashid, 1971, and 1984), and a terracotta sculpture may depict a unique example of a friction drum, played by a monkey (see Rimmer, 1969). Metal gong drums (*lilissu* and *manzû*) with more than one pitch hammered into their metal drumheads may have been introduced towards the middle of the 1st millennium, or at least by the Late Babylonian-Seleucid period; the instruments are described as having 'eyes', possibly referring to tuning or pitch spots (see Kilmer, 1995, p.466).

7. Performances and performers.

Music was clearly a hierarchical, highly organized component of the palace and temple. Musicians were highly prized, as shown by their being seized as war booty in military campaigns. Musicians were often itinerant, moving between various city states either by compulsion or choice.

Our knowledge regarding music outside of the official contexts of palace and temple is gained mostly from sources which are not strictly reliable, such as references in literary texts and iconography. From such sources we may infer that music-making in ancient Mesopotamian cultures took place in a wide range of formal and informal settings. Unaccompanied singing is likely to have been heard in the nursery, in shepherds' and farmers' animal enclosures, fields and threshing floors, and probably in every workplace. We may be reasonably certain that shepherds played reed pipes, and lutenists performed in taverns and in explicitly sexual settings together with other instrumentalists and dancers. Metal and ceramic bells and jangles were attached to priests' ceremonial clothes as well as to horse trappings (see Calmeyer, 1969). There is direct evidence to show that singing and dancing took place at weddings, and lamentation music was performed at funerals.

Music was no doubt heard frequently in city quarters where instrument makers, repairers and performers resided. At religious processions and cult festivals musicians, magicians, jugglers, and costumed performers provided colourful entertainment. Musicians were also attached to military camps. Traditional compositions were learnt and practised in the schoolrooms of the Old Babylonian Tablet House; in later periods apprentices were trained in the private homes of musicians and temple singers.

Royalty and their retainers were entertained in the palaces by dancers and small ensembles of string, wind and percussion instruments. Ceremonies for the dedication of important buildings required the performance of music and religious rites. Epics, myths and other kinds of poetry were sung to instrumental accompaniment; some compositions probably had both solo and choral parts. Love poetry associated with the cult of the Sumerian love goddess INANNA (Ishtar) and her consort DUMUZI (Tammuz) was sung responsorially. The great temples had elaborate musical facilities, with special halls where large orchestras of harps, lyres, wind and percussion instruments performed sacred music. The location of certain instruments was sometimes prescribed, in relation either to other instruments or to sacrificial animals and cult objects. Musicians such as the GALA = *kalû* (lamentation priest-singers; see above, §6) collected and rehearsed musical compositions. Some male cult musicians were often depicted with effeminate bodies and non-masculine coiffures, suggesting that they may have been castratos.

8. Theory and practice.

Mesopotamian music theory and practice were passed down from the Early Sumerian dynasties in an uninterrupted stream of tradition. Many technical terms for stringing, tuning and playing string instruments were collected in Sumerian lexical lists beginning in the second half of the 3rd millennium, and texts devoted exclusively to music appeared after 2000 BCE. The technical vocabulary specifically relating to heptatonic diatonic scales is recorded in Akkadian (and bilingual Sumerian-Akkadian) lexical lists, but was probably based on earlier unrecorded Sumerian traditions, as many of the later Akkadian terms have Sumerian logographic equivalents. Nevertheless, it is possible to isolate a Sumerian musical system that equated composition type with prescribed performing style and used special rubrics also related to detailed aspects of performing practice (see Wilcke, 1975).

(i) Sumerian composition types.

Sumerian music may be divided into three general composition types, each of which probably had its own set of melodic and rhythmic patterns (see Hartmann, 1960) and used special rubrics. (1) Hymns derived their nomenclature from the names of specific percussion instruments: ADAB; BALAG; TIGI; and ÉR.ŠÈM.MA. (2) Five types of song are distinguished by names beginning with the word ŠÌR (‘song’), for example, ŠÌR.NAM.UR.SAG.GÁ (‘heroism song’). (3) There are also three composition types of uncertain meaning: BAL.BAL.E (perhaps indicating multi-modalism within a single song); Ù.LU.LU.MA.MA (perhaps a cowherd’s song); and Ù.LÍL.LÁ (meaning unclear). For a description of the Sumerian rubrics and technical terms describing instrumental and vocal performance see Kilmer (1995).

A bilingual text gives us the Sumerian terms TÉŠ.BI (‘their oneness’; Akkadian *ištēniš šutešmû*: ‘made to be heard like one’), which is said of unison singing, and NÍG.KI.LÁ.A AN.TAG.GE.NE (‘they are playing in balance’; Akkadian *ṣimdassunu šaqlat*: ‘their joining/teamwork is balanced’), which is said of many voices and possibly means ‘in harmony’ or part singing.

(ii) Akkadian tuning systems.

From the Old Babylonian to the Neo-Babylonian periods a standard corpus of Akkadian terms was used to describe seven heptatonic diatonic tuning sets or ‘scales’. Knowledge of technical, ‘theoretical’ aspects of Mesopotamian music derives from nearly 100 cuneiform tablets, some well preserved, others fragmentary. The tablets can be classified according to the type of text they contain: lexical lists; a mathematical text; tuning instructions relating to string instruments; song catalogues; and hymnodic instructions. A key term derived from these texts is SA = *pitnu,* which denotes the individual string as well as ‘dichord/interval’ and ‘mode/tuning’ (for a detailed discussion of these various Sumerian and Akkadian texts see Kilmer, 1995).

The mathematical text CBS 10996, which contains a section dealing with musical strings, was the document that led to the recovery of ancient Mesopotamian tuning systems. **Table 1** displays the arrangement on that tablet of the names of 14 string pairs or dichords together with the names of specific strings. The progression of numbers from one to seven and the substitution of string 8 by 1 and string 9 by 2 may indicate that heptatonic scales were involved, that the dichords represented intervals of 5ths, 4ths, 3rds and 6ths, and that the concept of the octave was known.

TABLE 1: Interval names according to CBS 10996 (col. 1 obverse, lines 1' to 14')

1	1–5	*nīš tuḫri*	'rise of the heel'
a	7–5	*šēru*	'(main theme of a) song'
2	2–6	*išartu*	'normal'
b	1–6	*šalšatu*	'third'
3	3–7	*embūbu*	'reed pipe'
c	2–7	*rebūtu*	'fourth'
4	4–1	*nīd qabli*	'fall/place of the middle'
d	1–3	*isqu*	'throw stick/lot'
5	5–2	*qablītu*	'middle'
e	2–4	*titur qablītu*	'bridge of the middle'
6	6–3	*kitmu*	'closed'
f	3–5	*titur išartu*	'bridge of the normal'
7	7–4	*pītu*	'open'
g	4–6	*serdû*	'(name of a) lament'

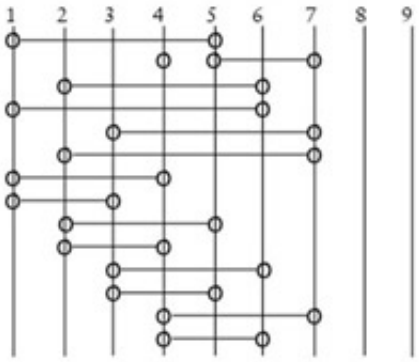

Table 1. Interval names according to CBS 10996 (col.1 obverse, lines 1' to 14')

This portion of the text may represent a kind of verbal tablature for a string instrument (lyre or harp) telling the player how to tune seven strings for each of the seven sets of tunings by using the cyclical pattern set forth as a model. It is also possible that the 3rds and 6ths were used as checks on the pitches in the just-tuned intervals, indicating that some kind of temperament may have been involved (see diagrams in Smith and Kilmer, 2000; see also West, 1993–4).

The most complicated text is the tuning instruction U.7/80 dating from about 1800 BCE or earlier; it convinced scholars that heptatonic diatonic scales must be the correct interpretation of this material (see Gurney, 1968, and 1994; Wulstan, 1968; Kümmel, 1970; and Crocker, 1997). It also demonstrates that the cycle of 5ths was known, and that the scales were named after the interval of a 5th or a 4th that initiated each of the seven tuning procedures (see Kümmel). A second fragment of the tuning instruction text confirms the reconstruction of the cycle of tuning procedures, which was presumed in the 1960s (Mirelman, 2010). The procedures may be carried out by going up or down the scale: **Table 2** shows the seven ancient Greek octave species matched with the Mesopotamian seven (assuming that string 1 is the lower pitch and string 7 the higher, and that string 8 is the octave of string 1 and string 9 the octave of string 2).

Table 2. Mesopotamian scales and their Greek equivalents

A Neo-Babylonian text features a drawing of a seven pointed star, where the known string names for strings 1–7 are written on each point. Below the drawing are columns of numbers which correspond to the number pairs detailed in Table 1. This text is most likely a visual tuning chart. Other Neo-Babylonian and Neo-Assyrian texts pair particular strings to the incipits of prayers, which are directed towards particular deities. Among the hymnic instruction texts only one (h.6 from Ras Shamra) is complete. It affords the opportunity to match the Hurrian words of a hymn to the moon goddess with the Akkadian musical instruction terms and the number signs that follow them. On this tablet the Hurrian words of the hymn are above the division line with the Akkadian musical instructions below; the latter consist of interval names followed by number signs (Kilmer, 1995, describes the various interpretations of this text, including the suggestion that the instructions constitute a tablature for the instrumentalist). The only mode or tuning name provided by the extant hymn fragments is *nīd qabli* ('fall of the middle'). The lack of reference to the interval *pītu* may suggest that both elements of the dichord were played simultaneously, and that a major scale is correct for *nīd qabli* tuning since the *pītu* interval/dichord is the tritone in that scale.

Bibliography

MGG2 (A.D. Kilmer, B. Lawergren)

H. Hartmann: *Die Musik der sumerischen Kultur* (diss., U. of Frankfurt, 1960)

A.D. Kilmer: 'Two New Lists of Key Numbers for Mathematical Operations', *Orientalia*, new ser., xxix (1960), 273–308

O.R. Gurney: ‘An Old Babylonian Treatise on the Tuning of the Harp’, *Iraq*, xxx (1968), 229–33

W.H. Hallo and J.J.A. van Dijk, trans.: *Enheduanna: The Exaltation of Inanna* (New Haven, CT, 1968)

J. Krecher: ‘Die sumerischen Texte in “syllabischer Orthographie”’, *Welt des Orients*, iv (1968), 272–7

D. Wulstan: ‘The Tuning of the Babylonian Harp’, *Iraq*, xxx (1968), 215–28

P. Calmeyer: ‘Glocke’, *Reallexikon der Assyriologie und vorderasiatischen Archäologie*, iii, ed. E. Weidner and W. von Soden (Berlin, 1969), 427–31

J. Rimmer: *Ancient Musical Instruments of Western Asia in the Department of Western Asiatic Antiquities, British Museum* (London, 1969)

H.M. Kümmel: ‘Zur Stimmung der babylonischen Harfe’, *Orientalia*, new ser., xxxix (1970), 252–63

W.G. Lambert: ‘The Converse Tablet: a Litany with Musical Instruments’, *Near Eastern Studies in Honor of William Foxwell Albright*, ed. H. Goedicke (Baltimore, MD, 1971), 335–53

S.A. Rashid: ‘Zur Datierung der mesopotamischen Trommeln und Becken’, *Zeitschrift für Assyriologie*, lxi (1971), 89–105

W. Stauder: ‘Harfe’, *Reallexikon der Assyriologie und vorderasiatischen Archäologie*, iv, ed. D.O. Edzard (Berlin, 1973), 114–20

L. Manniche: *Ancient Egyptian Musical Instruments* (Munich, 1975)

C. Wilcke: ‘Formale Gesichtspunkte in der sumerischen Literatur’, *Assyriological Studies*, xx (1975), 205–316

A.D. Kilmer, R.L. Crocker and R.R. Brown: *Sounds from Silence: Recent Discoveries in Ancient Near Eastern Music*, Bīt Enki Records BTNK 101 (Berkeley, 1976) [disc notes and LP]

A.D. Kilmer and D. Collon: ‘Laute’, *Reallexikon der Assyriologie und vorderasiatischen Archäologie*, vi, ed. D.O. Edzard (Berlin, 1983), 512–17

M. Duchesne-Guillemin: ‘A Hurrian Musical Score from Ugarit: the Discovery of Mesopotamian Music’, *Sources from the Ancient Near East*, ii (Malibu, CA, 1984), 1–32 [incl. sound cassette]

A.D. Kilmer: ‘A Musical Tablet from Sippar?: BM 65217 + 66616’, *Iraq*, xlvi (1984), 69–80

S.A. Rashid: *Mesopotamien*, Musikgeschichte in Bildern, ii/2 (Leipzig, 1984)

F. Lasserre: ‘Musica babilonese e musica greca’, *La musica in Grecia: Urbino 1985*, 72–95

R. Eichmann: ‘Zur Konstruktion und Spielhaltung der altorientalische Spiesslauten: von den Anfängen bis in die seleukidisch-parthische Zeit’, *Baghdader Mitteilungen*, xix (1988), 583–625

R. Fink: ‘The Oldest Song in the World’, *Archaeologia musicalis*, ii (1988), 98–100

J.-M. Durand: ‘30) *Kirrum = ÁBxŠÀ* (kír)’, *Nouvelles assyriologiques brèves et utilitaires*, ii (1989), 20 only

T.J. Krispijn: ‘Beiträge zur altorientalischen Musikforschung, I: Šulgi und Musik’, *Akkadica*, lxx (1990), 1–27

E. Reiner: ‘Quelques voeux’, *Marchands, diplomates et empereurs: études sur la civilisation mésopotamienne offertes à Paul Garelli*, ed. D. Charpin and F. Joannès (Paris, 1991), 421–2

J. Arndt-Jeamart: ‘Zur Konstruktion und Stimmung von Saiteninstrumenten nach den musikalischen Keilschrifttexten’, *Orientali*a, lxi (1992), 425–47

M.L. West: ‘The Babylonian Musical Notation and the Hurrian Melodic Texts’, *ML*, lxxv (1993–4), 161–79

M.K. Černy: ‘Some Musicological Remarks on the Old Mesopotamian Music and its Terminology’, *Archív orientální*, lxii (1994), 17–26

O.R. Gurney: ‘Babylonian Music Again’, *Iraq*, liv (1994), 101–6

K. Volk: ‘Improvisierte Musik im alten Mesopotamien’, *Improvisation*, ii (1994), 160–202

A.D. Kilmer: ‘Musik, A: philologisch’, *Reallexikon der Assyriologie und vorderasiatischen Archäologie*, viii, ed. D.O. Edzard (Berlin, 1995), 463–82

Å. Norborg: *Ancient Middle Eastern Lyres* (Stockholm, 1995)

A.D. Kilmer and S. Tinney: ‘Old Babylonian Music Instruction Texts’, *Journal of Cuneiform Studies*, xlviii (1996), 49–56

H. Limet: ‘Le texte KAR 158’, *Collectanea orientalia: histoire, arts de l’espace et industrie de la terre: études offertes en hommage à Agnes Spycket*, ed. H. Gasche and B. Hrouda (Paris, 1996), 151–8

R.L. Crocker: ‘Mesopotamian Tonal Systems’, *Iraq*, lix (1997), 189–202

A.D. Kilmer and S. Tinney: ‘Correction to Kilmer/Tinney “Old Babylonian Music Instruction Texts” JCS 48 (1996)’, *Journal of Cuneiform Studies*, xlix (1997), 118 only

M . Koitabashi: Music in the Texts from Ugarit, *Ugarit-Forschungen*, xxx (1998), 363–96

J.C. Smith and A.D. Kilmer: ‘Laying the Rough, Testing the Fine’, *Studien zur Musikarchäologie I*, Orient-Archäologie, vi *(*Rahden, 2000), 127–40

T.J. Krispijn: ‘Beiträge zur altorientalischen Musikforschung, II: Musik in Keilschrift’, *Studien zur Musikarchäologie III*, Orient-Archäologie, x (Rahden, 2002), 465–79

M. de Schauensee: *Two Lyres from Ur* (Philadelphia, 2002)

U. Gabbay: *The Sumero-Akkadian Prayer ‘Eršema’: a Philological and Religious Analysis* (diss., Hebrew U., Jerusalem, 2007)

N. Ziegler: *Les Musiciens et la Musique d’après les archives de Mari* (Paris, 2007)

C. Waerzeggers and R. Siebes: ‘An Alternative Interpretation of the Seven-Pointed Star on CBS 1766’, *Nouvelles assyriologiques brèves et utilitaires*, no.40 (2007), 43–4

A.D. Kilmer and J. Peterson: ‘More Old Babylonian Music Instruction Fragments from Nippur’, *Journal of Cuneiform Studies*, lxi (2009), 93–6

S. Mirelman: ‘New Developments in the Social History of Music and Musicians in Ancient Iraq, Syria and Turkey’, *Yearbook for Traditional Music*, xli (2009), 12–22

D. Shehata: *Musiker und ihr vokales Repertoire: Untersuchungen zu Inhalt und Organisation von Musikerberufen und Liedgattungen in altbabylonischer Zeit* (Göttingen, 2009)

S. Mirelman: ‘A New Fragment of Music Theory from Ancient Iraq’, *AMw*, lxvii (2010), 45–51

S. Mirelman: ‘Performative Indications in Late Babylonian Texts’, *Musiker und Tradierung: Studien zur Rolle von Musikern bei der Verschriftlichung und Tradierung von literarischen Werken*, ed. D. Shehata and R. Pruzsinsky (Vienna, 2010), 241–64

S. Mirelman: ‘The False Decipherment of Cuneiform “Notation” in the Early Twentieth Century’, *The Historiography of Music in Global Perspective* (Piscataway, NJ, 2010), 135–44

S. Mirelman and W. Sallaberger: ‘The Performance of a Sumerian Wedding Song (CT 58, 12)’, *Zeitschrift für Assyriologie und vorderasiatische Archäologie*, c (2010), 177–96

E. Payne: ‘A New Addition to the Musical Corpus’, *Opening the Tablet Box: Near Eastern Studies in Honour of Benjamin R. Foster*, ed. S.C. Melville and A.L. Slotsky (Leiden and Boston, 2010), 291–300

S. Mirelman: ‘The ala-Instrument: its Identification and Role’, *Ancient Music in the Near East and the Mediterranean Worlds*, ed. Y. Maurey, E. Seroussi and J.G. Westenholz (Jerusalem, forthcoming)

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