

ENGLISH LANGUAGE, LARGE PRINT

RESOUND Ancient Bells
of China

Resound: Ancient Bells of China

Bells were among the first metal objects created in China. Beginning over 3,500 years ago, small, primitive noisemakers grew into gongs and further evolved into sets of hand bells for playing melodies. Centuries of technological experimentation later resulted in sophisticated bells that produced two pitches when struck at different spots.

Variations in size, shape, decoration, and sound also reveal regional differences across north and south China. By the late Bronze Age large sets of tuned bells were played in ensemble performances in both areas. Cast from bronze, these durable instruments preserve valuable hints about the character of early Chinese music.

Today we can use technology to explore these ancient bells and to explain their acoustical properties, but we know little about the actual sound of this early music. To bring the bells to life, we commissioned three composers to create soundscapes using the recorded tones of a 2,500-year-old bell set on display. Each of them also produced a video projection to interpret his composition with moving images that allow us to "see sound."

Unless otherwise indicated, all of these objects are from China, are made of bronze, and were the gift of the Dr. Paul Singer Collection of Chinese Art of the Arthur M. Sackler Gallery, Smithsonian Institution; a joint gift of the Arthur M. Sackler Foundation, Paul Singer, the AMS Foundation for the Arts, Sciences, and Humanities, and the Children of Arthur M. Sackler.

Symbols of Refinement

Chinese regional courts competed with one another on the battlefield and on the music stage. Dozens of bronze swords could have been made with the metal used to cast this massive bell. Weighing 138 pounds (62 kilograms), it is the largest in a set of four bells made to hang together from a rack. Musicians used mallets to strike bells on the outside. Accuracy was essential because each bell produces two different notes depending on where it is struck. Four bells in this set could thus produce eight deep bass notes. Watch the video for a large *bo* bell (with a distinctive flat bottom) being played near the center of the set.

Bell (*bo*) with birds and dragons; from a set of four Shanxi province, State of Jin, Houma foundry Eastern Zhou dynasty, late Spring and Autumn period, ca. 500–450 BCE
Purchase—Charles Lang Freer Endowment
F1941.9



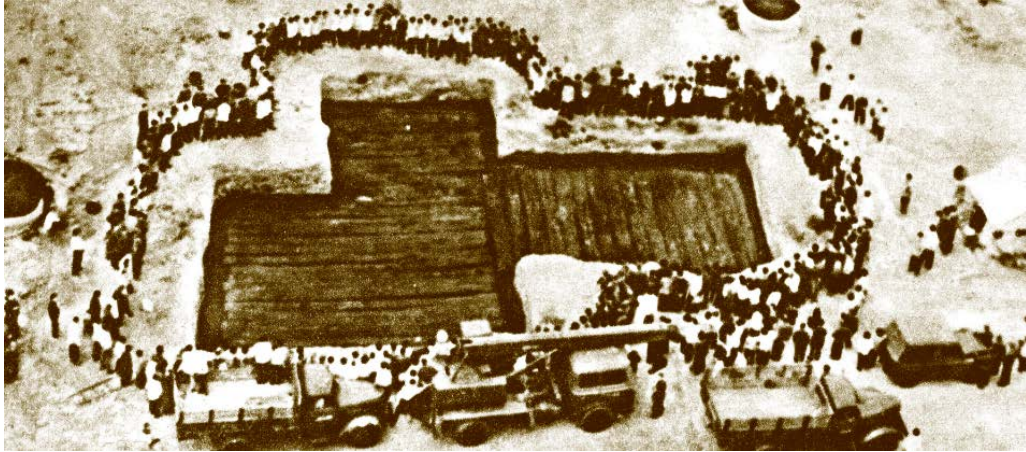
Marquis Yi of Zeng

A music lover to the very end, Marquis Yi of Zeng was buried with the musical instruments of his royal orchestra and with twenty-one women, possibly his court musicians, when he died around 433 BCE. The sixty-five bells being played in the video are full-size copies of those found in the tomb of this Chinese aristocrat.

The bells were placed in the central chamber of Yi's tomb along with other instruments and bronze banqueting vessels. Apparently accumulated over time, the assemblage of different bell types covered five octaves and required several musicians to play. Many of the bells bear inscriptions that outline the three distinctive tuning standards of Zeng in southern China, its patron state of Chu, and the royal Zhou court in the north. During this part of the later Zhou dynasty (770–221 BCE), metallurgists and musicians collaborated to create individual bells capable of producing two pitches, usually separated by a musical third, depending on where the bell is struck.

"Bamboo Song," a traditional Chinese melody, is being played. Video courtesy of the Hubei Provincial Museum.

(Below) Tomb of Marquis Yi of Zeng at Suixian, Hubei province, under excavation in 1977



The Earliest Bells

Small bells with clappers, made for horse harnesses and dog collars, were among the first bronze objects cast in ancient China. Their shape—a pointed oval in cross section—was made with an efficient two-part mold. These early three-legged wine warmers, used in rituals to honor ancestors, were cast in a similar way: vertical mold joins are obvious at the two points of the oval. Later ritual vessels assumed round or even square shapes, but bells retained this unusual shape throughout the Bronze Age.

(Above) Clapper bell (*ling*) with flange
Probably Henan province,
Yanshi, Late Erlitou culture, ca.
1800–1600 BCE
S1999.120.16



Ritual wine warmers (*jue*)
Late Erlitou culture, ca. 1800–
1600 BCE
S2012.9.568



Early Shang dynasty, ca.
1600–1500 BCE, Purchase—
Charles Lang Freer Endowment
Freer Gallery of Art
F1986.6



Hand Bells

Grasped by their tubular handles, these bells were struck on the outside with a mallet. Holding the bell with the mouth up also made it easier to see the animal mask decoration of snout, horns, and eyes that stare straight ahead. Archaeologists have found different sizes of these hand bells in groups of three or five, suggesting they were used musically perhaps with other instruments.

Hollow shaft bells (*nao*) with
taotie masks from two
different sets

Late Shang dynasty, Anyang
period, ca. 1300–1050 BCE

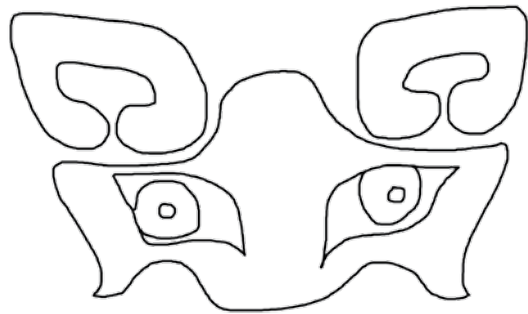
S1999.120.17

S2012.9.629





Taotie mask on Sackler
hand bell



Heads Up

Weighing more than 200 pounds (90 kilograms), this is the heaviest bell here. Its hollow shaft anchored the bell with its mouth upward. This makes it easier to see the relationship between the abstract, swirling decoration and the earlier *taotie* masks and dragon designs. The rows of raised knobs that punctuate the decorative scheme became a characteristic feature of Chinese bells throughout the Bronze Age. They might be purely ornamental, or they may have served a now-forgotten acoustical purpose.

Testing shows this bell is a single-note instrument, although additional pitches are audible as faint overtones.

Hollow shaft bell (*nao*) with
taotie masks and dragons
Yangzi River valley, ca.
1200–1100 BCE
S1999.120.1



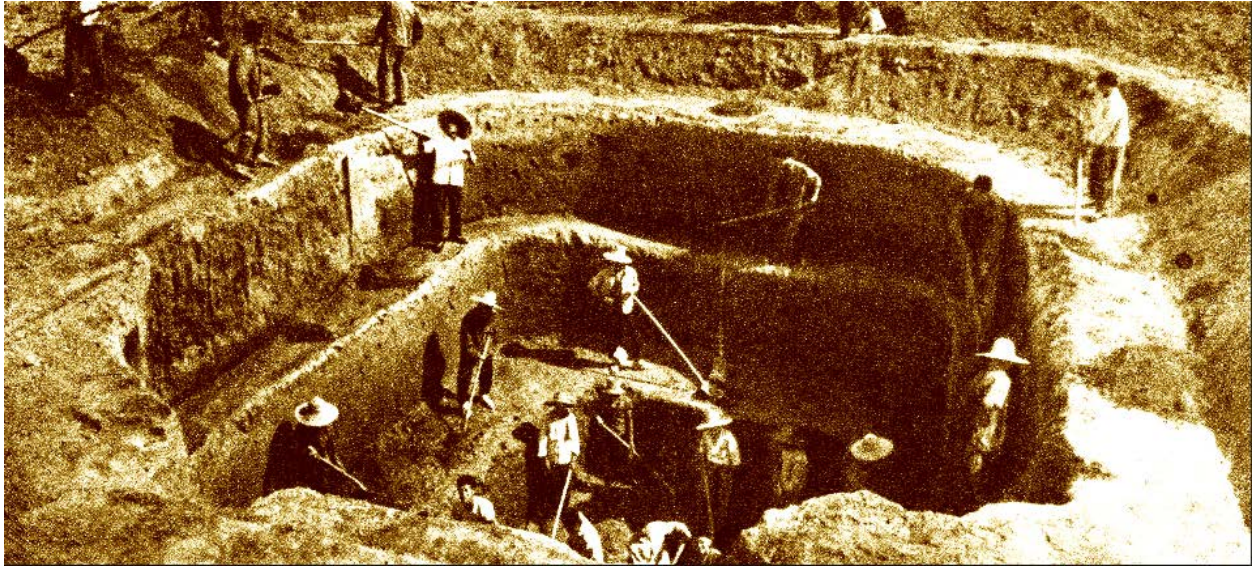
Sound: Music or Noise?

Sound is caused by vibrations that spread in waves. With these ancient metal objects, vibrations begin by shaking a rattle or striking a bell with a clapper or mallet.

Labeling different sounds as “music” or “noise” is a personal or cultural matter. Military music, for example, was intended to motivate troops and alarm the enemy. The clang of a bell worn by a farm animal might be a pleasant or unwelcome reminder of rural life. Amid shouts to “turn down that noise,” generations of parents and teenagers have disagreed on what constitutes music, from Elvis Presley and the Beatles to heavy metal, rap, techno, and beyond. It has been said, music consists of melody, harmony, rhythm, and a thousand associations of the heart.

Whether viewed as producing music or noise, jingles, rattles, and hand bells were found together in the richly furnished tomb of Lady Hao, who died around 1200 BCE. When it was discovered in 1976, her burial contained eighteen small hanging bells with internal clappers, six chariot rein guides with rattles, and a set of five hand bells without clappers. All of these types are shown in this gallery. No large bells,

however, were buried with Lady Hao, presumably because they were unknown or not valued in the north.



Tomb of Lady Hao at Yinxu, Anyang, Henan province, under excavation in 1976

Noisemakers

Different kinds of metal bells and rattles were made for pets, draft animals, and chariots and their drivers in the early Bronze Age. By producing sound through motion, such noisemakers signaled the location of domesticated animals and the arrival of impressive horse-drawn chariots in ceremony or in war.

(Above)
Clapper bells (*ling*) with *taotie*
masks
S2012.9.630–631



Unless indicated otherwise, all of these objects probably come from Henan province, Anyang, and are late Shang dynasty, Anyang period, ca. 1300–1050 BCE

Yoke rattle in the form of a bird
S2012.9.615



Chariot rein guide with elephants and rattles
S2012.9.612



Yoke rattles
Late Shang dynasty,
Anyang period or early
Western Zhou dynasty,
ca. 1300–950 BCE
Gift of Charles Lang Freer
Freer Gallery of Art
F1916.459
RLS1997.48.757



Seeing Sound: Chladni Plates

What happens when sound waves pass through a thin, flexible plate? As this video shows, waves are produced when a bow agitates the metal sheet. Sand sprinkled on the plate surface reveals the geometric vibration patterns of sound. Grains of sand gather where the plate is not moving (nodes), leaving exposed the areas of vibrating metal that produce sound. A cross traced in the sand represents the pattern associated with the fundamental tone. Larger sheets, those of different shapes, and bowing harder and faster—or at various locations—produce diverse patterns.

Ernest Chladni (1756–1827), an early German physicist, pioneered this way of studying acoustics. His “Chladni plates” help us to see the causal relationship between vibration patterns and sound perception.

Video courtesy of the National Museum of American History, Smithsonian Institution

Early Southern Bells

These dramatic bells had humble beginnings: small collar jingles made in north China. Each of these larger versions has a hanging loop at the top and might have had a clapper that is now missing. The *taotie* masks in the main panel, however, lack the visual coherence seen on bells from the north, a hint they were made elsewhere. In fact, such bells are typically found singly (not in sets) in burials in south China, chiefly along the Yangzi River. Their original function remains a mystery.

Bell (*bo*) with *taotie* masks
and birds
Yangzi River valley, ca.
1300–1100 BCE
Gift of Arthur M. Sackler
S1987.10



Bell (*bo*) with *taotie* mask,
birds, and tigers
Yangzi River valley, ca.
1050–900 BCE
Gift of Arthur M. Sackler
S1987.36



Bell (*bo*) with birds
Yangzi River valley, ca.
1000–800 BCE
S1999.120.18



Topsy Turvy

A significant innovation in Chinese bell design occurred in the century following the fall of the Shang dynasty around 1050 BCE. At that time, a ring was added to the shaft of the traditional southern *nao*, which allowed it to be suspended, mouth down. This advance coincided with the appearance of the first matching sets of large, decorated bells. These changes, initiated in the southern Yangzi River valley, soon appeared in administrative centers of the Zhou dynasty in north China.

Hollow shaft bell (*nao*)
with spirals
Yangzi River valley, ca.
1050–900 BCE
Gift of Arthur M. Sackler
S1987.278



Shaft bell (*yong*) with
spirals and dragons; from
a set

Late Western Zhou
dynasty, ca. 900–770
BCE

Gift of Arthur M. Sackler
S1987.915



Getting in Tune

Without clappers, these bells were played by striking them on the outside with wooden mallets. Modifications indicate early craftsmen tried to alter pitches after the bronze objects were cast. Look inside the mouth of the large bell to see grinding marks on its inner edges; wedge-shaped thicknesses were added inside the small one. Such alterations imply the bells were tuned and used musically.

Loop suspended bells
(*niu*) with scrolls and
eyes; from two different
sets

Early to middle Western
Zhou dynasty, ca. 1000–
800 BCE

RLS1997.48.656

RLS1997.48.658





Mix and Match

Marquis Yi of Zeng amassed an impressive collection of sixty-four bells before he died around 433 BCE. One final bell was added as a memorial gift from King Hui of Chu after Yi's death. Three types of bells—*niu*, *yong*, and *bo*—form this amazing set, by far the largest in the world.

Niu Bells

Nineteen small bells are arranged in three groups at the top of the stand. They produce the highest notes. Each hangs from a *niu*, or loop.

Archaeologists have found sets of six to ten *niu* bells buried together, suggesting the size of sets varied.

Yong Bells

Most of Marquis Yi's bells are of the *yong* type. Each one of the forty-five bells is suspended from a ring attached to the side of its vertical shaft (*yong*). Look at the matched set of six *yong* bells to your left to see how the rings are secured.

Bo Bells

The third type is the large memorial bell given by King Hui of Chu. A *bo* bell has a flat bottom and hangs by a loop. Produced in different sizes, *bo*

bells are frequently quite large to generate deep bass notes.

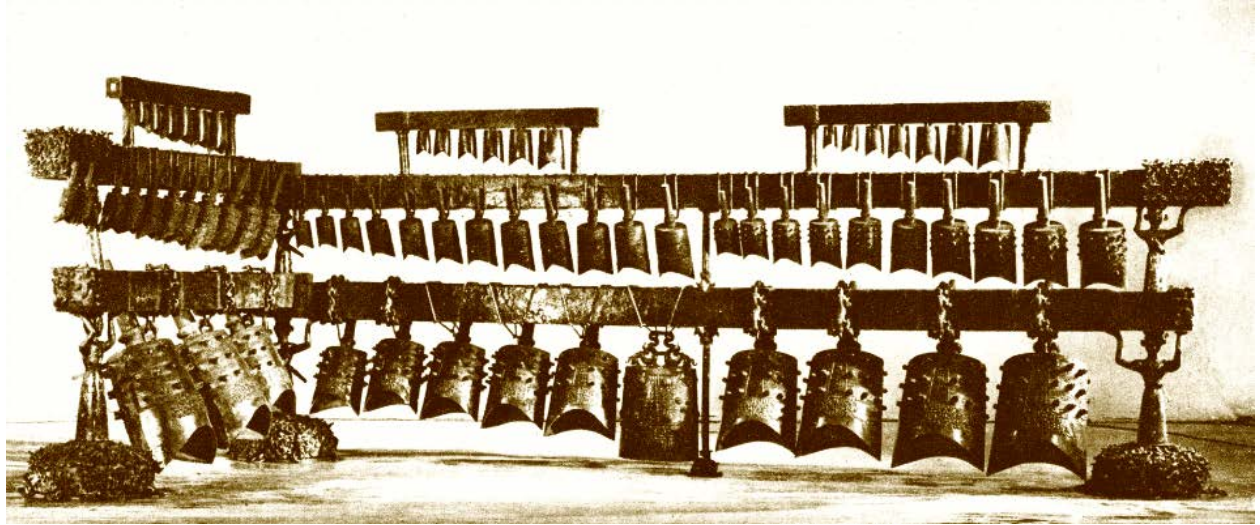


Photo of a reproduction set of Marquis Yi of Zeng bells. Courtesy of the Hubei Provincial Museum

Crouching Tigers, Coiled Dragons

These growling tigers were purportedly unearthed in 1923 at Baoji in the capital district of the Western Zhou dynasty (circa 1050–770 BCE), which ruled northern China. No similar pieces have been found since then.

The specific function of these creatures is a mystery. Each solid-cast tiger weighs about 50 pounds (23 kilograms), suggesting they may have been made to carry a heavy structure on their backs. Common animals in south China, tigers were viewed as exotic beasts in the north. This may have made them an attractive subject for the base of a rack of bells, possibly imported or inspired by southern models.

Two tigers, possibly the base supports for a bell stand

Shaanxi province, Baoji, Middle Western Zhou dynasty, ca. 950–850 BCE

Purchase—Charles Lang Freer Endowment
Freer Gallery of Art
F1935.21



F1935.22



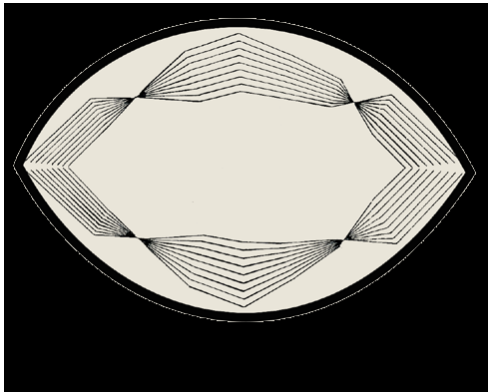
Tigers in China

Now occupying a diminished habitat, South China tigers (*Panthera tigris amoyensis*) flourished during the Bronze Age. They first inspired sculpted or flat decorations on bronzes created in south China around the year 1400 BCE. Look for pairs of them enlivening the surface of a nearby bell. While never as popular as dragons or birds as decorative motifs, they occur on bronzes and jades produced in the late Shang dynasty capital of Anyang (circa 1300–1050 BCE). Their continued appeal in the Zhou dynasty reflects ongoing cultural contact between the Yangzi River valley and the Zhou homeland.

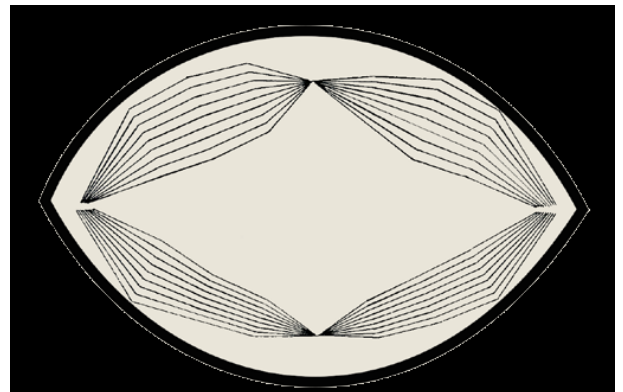
Two-tones

Like the ancient Chinese bells displayed around you, this modern replica has a pointed oval when viewed from below or above. This distinctive shape produces two primary vibration patterns—and thus two tones—depending on where you strike it.

Lower tone (*gu*) vibration



Higher tone (*sui*) vibration



Use the hammer to lightly tap the Chinese bell and find the best strike locations for the low (*gu*) tone and the high (*sui*) tone.

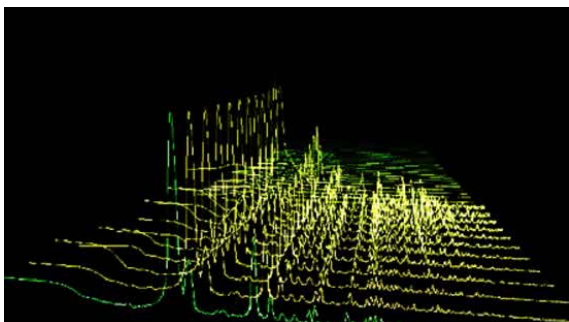
Seeing Sound: Spectrum Reports

Spectrum reports illustrate what your ears are hearing. They show the fundamental pitch and other frequencies as well as the volume and the decay of sound over time. The highest peaks represent the fundamental—or most audible—pitch. The lower peaks stretching to the right are overtones mixed in.

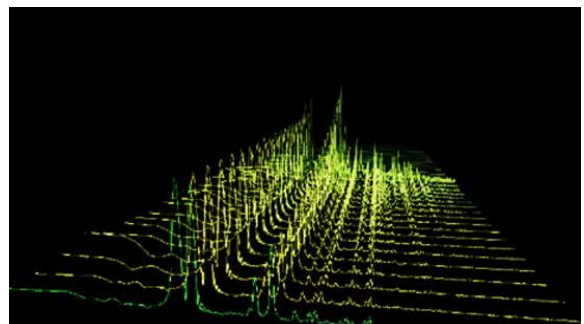
Notice how the graph on the flat screen changes as you tap the bell at different locations.

If you find the ideal tapping points, the lower *gu* and higher *sui* tones differ by a musical third, which is roughly equivalent to three or four half steps on a piano keyboard.

Try to reproduce these patterns by finding the ideal *gu* and *sui* points.



Gu tone

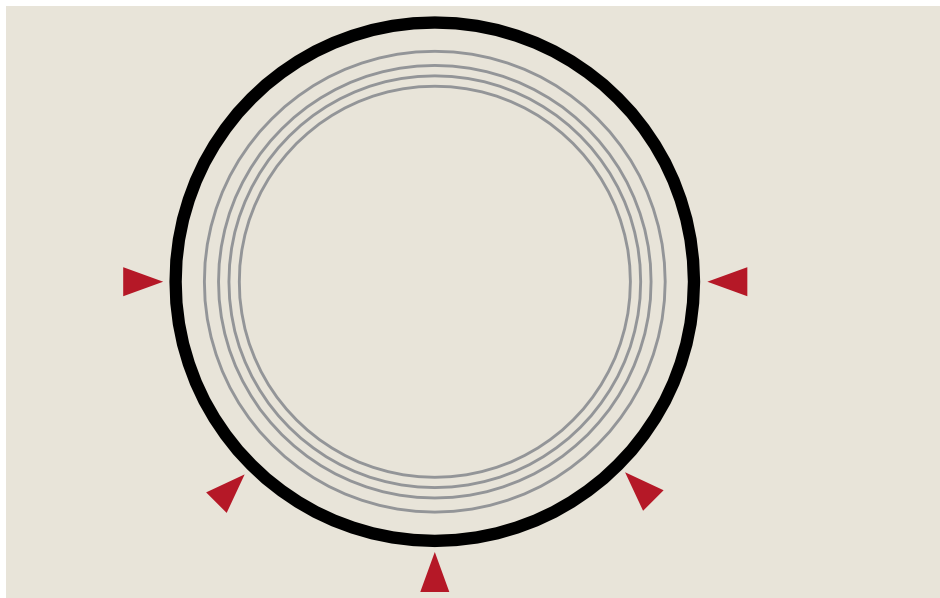


Sui tone

One Tone

We hear bells a lot—at school, from church towers, on boats and trolley cars. Typical Western bells, such as musical hand bells or the Liberty Bell, are circular in shape when viewed from the top or bottom. They produce only one primary tone.

One-tone vibration

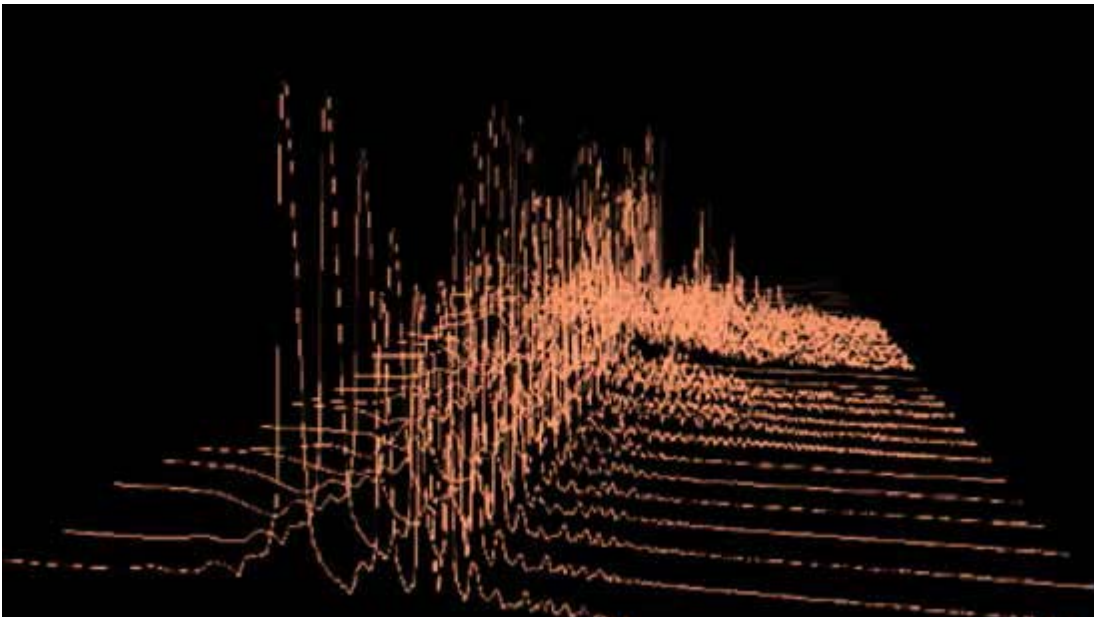


Use the hammer to lightly tap the rim of the round Western bell. No matter where you hit the rim, you hear a single primary tone.

Seeing Sound: Spectrum Reports

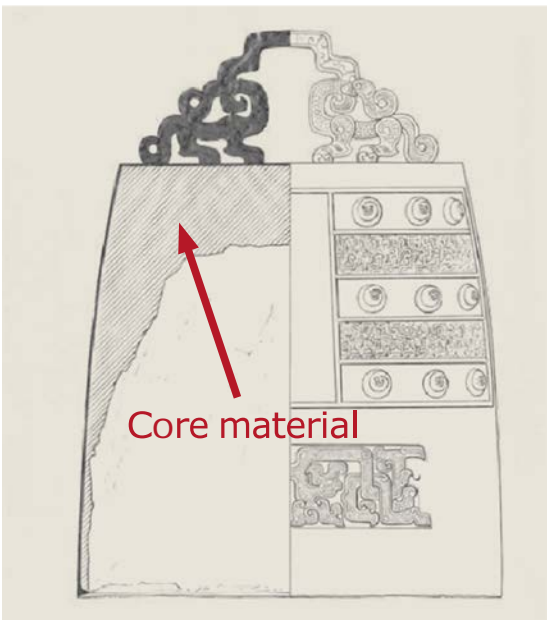
Spectrum reports illustrate what your ears are hearing. They show the fundamental pitch and other frequencies as well as the volume and the decay of sound over time. The highest peaks represent the fundamental—or most audible—pitch. The lower peaks stretching to the right are overtones mixed in.

Notice how the graph is basically the same no matter where you tap the bell. Also look for the rising and falling peaks moving from the back to the front of the graph. This shows sound reverberating or pulsing through the bell.



For the Living and the Dead

The four large *bo* bells behind you belong to three different sets that apparently included four members each. The largest bell (bottom left) is covered with crisp designs of interlaced dragons and birds created with pattern blocks. This repeated decoration is easiest to see on the bell's flat top, where motifs are abruptly cut off at the outer edge. Pattern blocks were first used at the Houma foundry in the northern State of Jin, where this bell must have been cast. Its superb quality indicates the bell was made for performance. This might not be true with the other three *bo*.



Look for two identical bells that slightly differ in size (top row). Together since antiquity, they

come from the same set. Surprisingly, they are still partially filled with the clay core material that was used to cast them around 500 BCE. Their thin walls and the dulling sound effect of the clay indicate these instruments probably were never played but instead served as extravagant burial objects.

The fourth bell (bottom right) was reportedly found at Jincun, the burial ground of the last kings of the Zhou dynasty. Its decoration is both simpler and less refined than the others. Notice how the horizontal patterns between the raised knobs do not neatly fit their frames. This bell might also have been made solely for burial.

(Top row) Pair of bells (*bo*) with felines and dragons; probably from a set of four North China, Eastern Zhou dynasty, late Spring and Autumn period, ca. 550–500 BCE
Gift of Arthur M. Sackler
S1987.274
S1987.307





(Bottom left) Bell (*bo*) with felines and dragons; probably from a set of four Shanxi province, State of Jin, Houma foundry Eastern Zhou dynasty, late Spring and Autumn period, ca. 550–500 BCE
Gift of Arthur M. Sackler
S1987.287



(Bottom row) Bell (*bo*) with dragons; probably from a set of four Henan province, Luoyang, Jincun Eastern Zhou dynasty, Warring States period, ca. 400–300 BCE
Gift of Arthur M. Sackler
S1987.302



A Golden Age for Music

Advances in acoustics and metal casting led to a greater standardization of the types, proportions, and pitches of bronze bells. The second half of the Zhou dynasty, which includes the Spring and Autumn (770–456 BCE) and Warring States (456–256 BCE) periods, emerged as the most important era of bell production in Chinese history. Indeed, casting a perfectly tuned set of bells was thought to have political implications signaling good government and a proper relationship with heaven.

Depictions of court performances show musicians in long robes striking suspended bells and stone chimes (*qing*). Other musicians play mouth organs (*sheng*), pan pipes, and drums. Since pitches of bronze bells were difficult to adjust once cast, other instruments might have been tuned to harmonize with them. The standard Zhou scale was pentatonic, comprised of the five major-scale pitches *do*, *re*, *mi*, *sol*, and *la*. (The conventional Western scale uses seven tones: *do*, *re*, *mi*, *fa*, *sol*, *la*, and *ti*.)

This court tradition of bell sets was gradually overcome by popular music that did not utilize bells. Chinese political philosophers contributed to

this change in taste with their complaints about overly elaborate banquets and conventional bell music. In the end, the significance of this classical tradition lived on only symbolically, evinced by miniature effigies made solely for burial in tombs.



Musicians decorate a square wine vessel (*fanghu*) dating to the 5th century BCE and excavated at Baihuatan, Chengdu, Sichuan province. Drawing after Li Xiating

Higher Registers

Compared to standard sets of four large *bo* bells, these three are rather small. Representing different sets—all probably cast at the Houma foundry in the northern State of Jin—they were made to supply “alto” and “soprano” tonal ranges. Other members of these sets have not yet been located.

The compressed form of the bell displayed on its side may result from damage sustained when the tomb in which it was buried collapsed.

(Above) One of a set of bells (*bo*) with felines and dragons
Shanxi province, State of Jin,
Houma foundry
Eastern Zhou dynasty, late
Spring and Autumn period, ca.
550–500 BCE
Gift of Arthur M. Sackler
S1987.282



One of a set of bells (*bo*) with
felines and dragons
Shanxi province, State of Jin,
Houma foundry
Eastern Zhou dynasty, late
Spring and Autumn period, ca.
550–500 BCE
RLS1997.48.792



One of a set of bells (*bo*) with
felines and dragons
Shanxi province, State of Jin,
Houma foundry
Eastern Zhou dynasty, late
Spring and Autumn period, ca.
525–475 BCE
RLS1997.48.830



Many patterns, such as the interlocked wave, link these bells to the Houma foundry since ceramic mold fragments with identical designs have been found there.



Ceramic mold fragment from the Houma foundry site

Goudiao and Zheng Bells

During the Zhou period, various handheld, clapperless bells reminiscent of much earlier Shang hand bells were made in south China. Two types are named by inscriptions that also describe their use. *Goudiao*, capable of yielding two tones, were produced in graduated sets that were used musically in performances. *Zheng* were made singly but are customarily found together in tombs with a drum called a *chunyu*. Before burial, *zheng* and *chunyu* were used to signal troops in battle. Lying outside the main classical tradition, these types reflect local developments that were not adopted beyond the region.

Goudiao bells

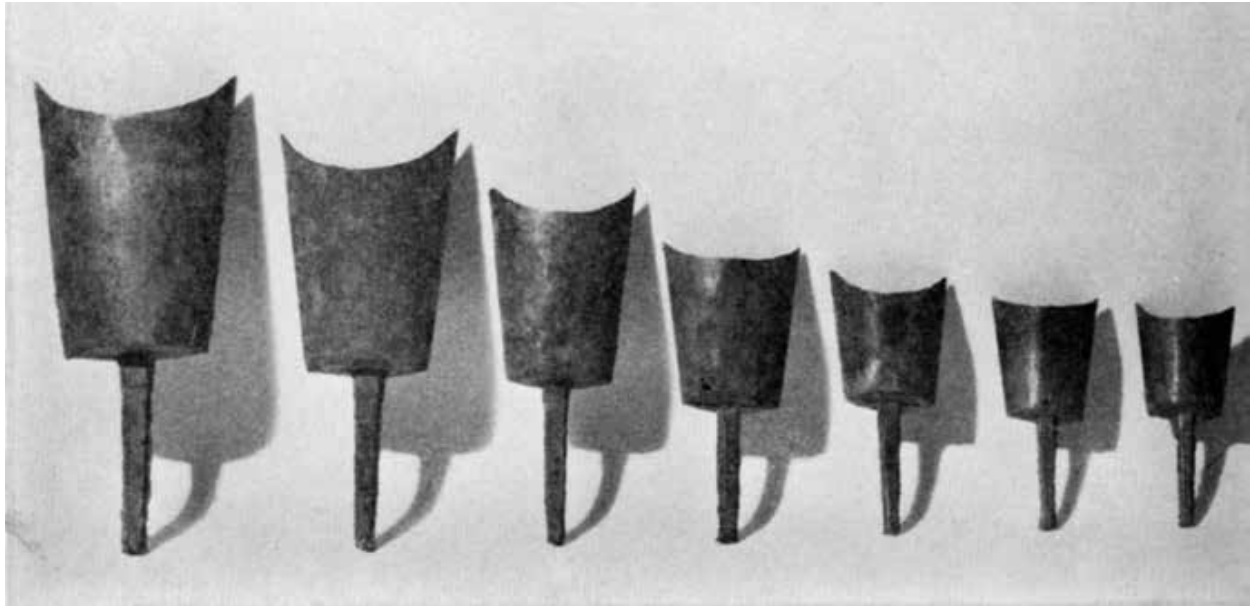
This bronze *goudiao* is nearly identical to sets found at sites within the ancient states of Wu (circa 1050–473 BCE) and Yue (extinguished 222 BCE) in the lower reaches of the Yangzi River. Related stoneware versions, not intended for performance, were made as cheaper burial surrogates since ceramics were less expensive than bronzes. Notice how the decoration of the “spirit object” (*mingqi*) carefully duplicates the bronze model.

Hand bell (*goudiao*)
Eastern Zhou dynasty, late
Spring and Autumn or
Warring States period, ca.
550–250 BCE
RLS1997.48.655



Funerary replica (*mingqi*) of
a hand bell (*goudiao*)
Stoneware partially covered
with ash glaze
Eastern Zhou dynasty, late
Spring and Autumn or
Warring States period, ca.
550–250 BCE
RLS1997.48.1902





Set of seven bronze *goudiao* bells unearthed at Wujin, Jiangsu province; the size of the Sackler bell places it near the middle of this range.

Zheng Bells

Signaling bell (*zheng*) with bear
South China, possibly State of Chu
Eastern Zhou dynasty, late
Warring States period, ca. 400–
300 BCE

Lent by the AMS Foundation for
the Arts, Sciences, and Humanities
MLS1797



These very tall signaling bells belong to a provincial tradition associated with the Ba culture.

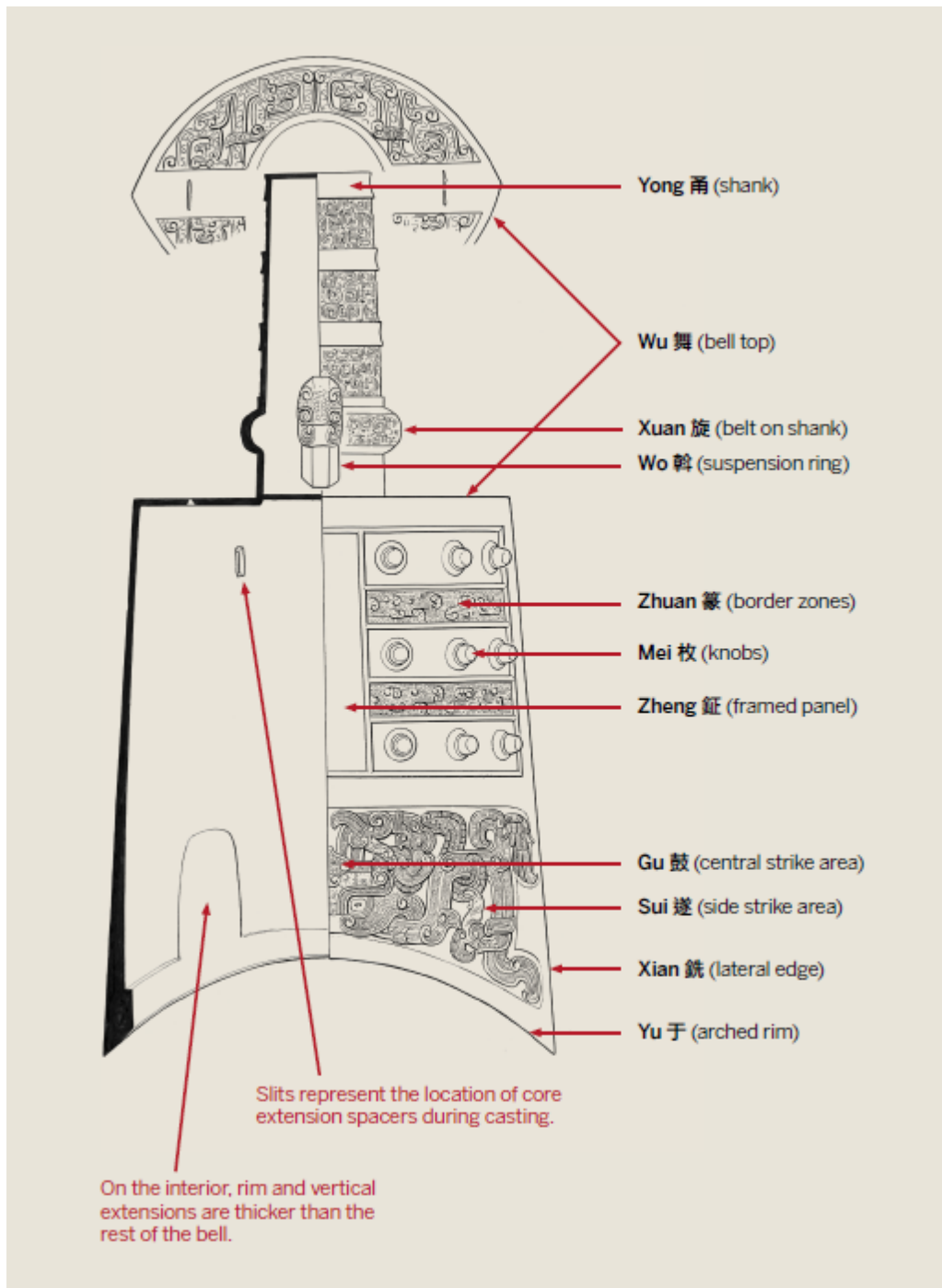
Although they are relatively plain, versions bearing inscribed symbols characteristic of Ba have been excavated in southwest China. The peculiar *yong* bell with 48 knobs, shown to your right at the end of the gallery, is also a product of the Ba culture.

Two signaling bells (*zheng*)
South China, possibly Sichuan
province, Ba culture
Eastern Zhou dynasty, late
Warring States period, ca. 300–
221 BCE
S1999.120.19
RLS1997.48.4029



Parts of a Yong Bell

This diagram shows the parts of a standard *yong* bell, including the strike zones that produce two pitches.



A Classic

Crisply cast animal masks, birds, and dragons—the most popular ornamental patterns millennia ago—cover this beautiful *yong* bell. Find the staring mask at the center, just above the bell's mouth. Now look for a pair of birds with open beaks. Shown in profile, they turn their heads away from the unblinking mask. The long, sinuous bodies of the birds stretch toward the edges of the bell. Writhing dragons fill the remaining decorated zones.

Bell (*yong*) with masks, birds, and dragons; from a set

Shanxi province, State of Jin, Houma foundry
Eastern Zhou dynasty,
late Spring and Autumn
period, ca. 500–450 BCE
Gift of Arthur M. Sackler
S1987.285



A Scaled Set

Intertwined dragons enliven the central strike zones (*gu*), horizontal border panels, flat tops, and shanks (*yong*) of the six bells in this scaled set, or *bianzhong*. Probably missing from this set are two, three, or four bells, most likely the larger ones that played the lowest notes. Since the bells were cast from an almost identical bronze alloy, they were possibly created at the same time around 500 BCE.

Musicians stood on this side of the bells, as you are. Hanging the instruments at an angle made it easier for them to hit the two strike points on each bell precisely.

When compared to Western musical scales, these bells play tones spread across an octave and one-half, beginning with the F above middle C. The interval between the two tones sounded by each bell is inexact and irregular, but it consistently falls between a minor third (such as F and A-flat) and a major third (such as F and A-natural).

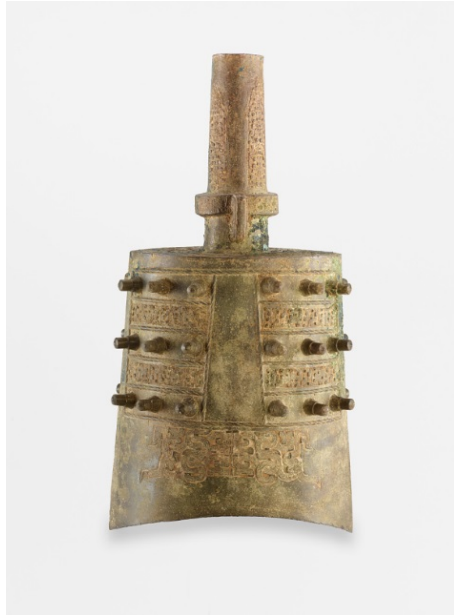
For the safety of these bells, modern steel mounts hold them in place and do not stress the corroded

suspension rings. This ensures the bells are preserved for future generations.

Set (*bianzhong*) of six *yong* bells with dragons
Eastern Zhou dynasty, late
Spring and Autumn period, ca.
525–475 BCE
Gift of Arthur M. Sackler
S1987.4–.9







Musical Properties

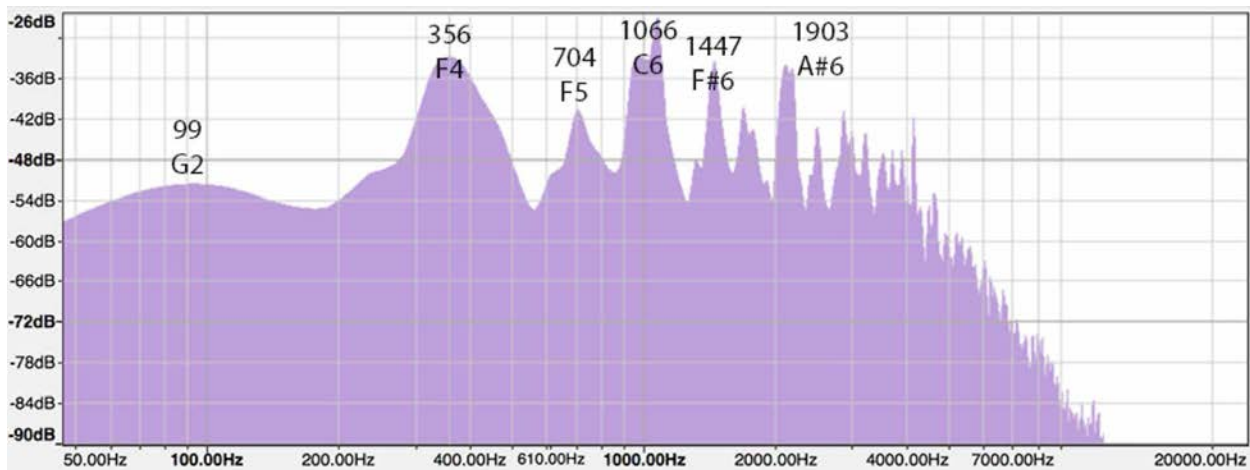
Although the bells in this ancient set of six seem solid, their corroded metal is fragile, and they are rarely struck. In 1991, however, a team of specialists safely investigated the physical and acoustical properties of these bells. Their findings contributed to a revised international understanding of ancient Chinese bells.

Recordings made in 1991 of the twelve tones produced by our set have been digitally remastered and analyzed. Acousticians now believe the corrosion has not significantly affected the bells' tuning. What you hear is very close to the way the bells sounded 2,500 years ago.

Seeing Sound: Spectrum Reports

The two tones of each bell can be represented in spectrum reports that show what your ears are hearing.

The greatest peak in each report indicates the most audible tone, which is accompanied by a complex overlay of additional frequencies. A frontal strike on the largest bell yields a fundamental of 356 Hz and comes close to the F above middle C (labeled F4). The graph shows other subtle audible tones, including F5 (an octave above F4) and C6 (a fifth above that).

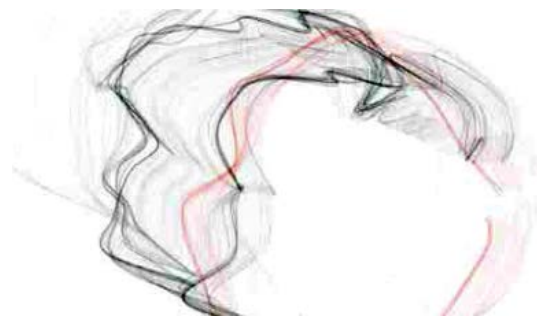


Spectrum report of the sound produced by a central (low-tone) strike on the largest bell of the Sackler set

A piano keyboard helps orient us to the tones of the ancient bell set despite different tuning standards. Use the touch screen behind you to explore these sounds and their combinations. The white and black keys represent approximations of the tones played by the bells.

Soundscapes

To bring China's ancient bell culture into the twenty-first century, we commissioned three composers to create illustrated soundscapes. These evocative contemporary compositions using our six-bell set substitute for now-lost ancient methods.



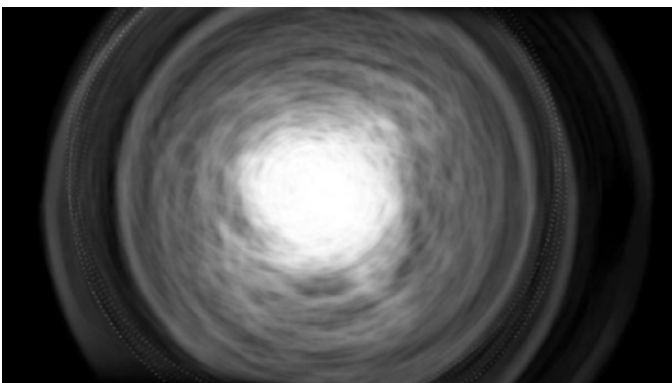
Hugh Livingston, a cellist and composer living in Oakland, California, put the voiceless bells back into conversation.

Alternating piano gestures and bell tones create a sense of opposition, disconnect, and anticipation. Drone tones derived from the decaying bell tones sustain the bridge across time. The visual component of the composition spins threads of color which modulate with the richness of the overtones, gently blowing in a breeze as the bells' subtlety is given a graphic presence.



Norman Lowrey, Professor Emeritus of Music at Drew University in New Jersey, is an unabashed animist. His soundscape evokes a powerful connection between the bells and nature.

After initially thinking that serious enhancement of the tone samples was necessary, I've decided to apply very little, coming to appreciate the gritty and even earthy sound that was either the result of the bells themselves or the recording quality, or both. The sound of the bells provides an excellent resource for helping to reveal the sacred essence in the mundane Northern New Jersey landscape in which I reside.



Doug Von Nort, an artist, researcher, composer, and improviser, is Canada Research Chair at York University in Toronto.

In this piece, all sounds are purely derived from the bell set. I chose to focus on extending harmonic layers drawn from the bells, with

rhythms that arise both from looping the bells as well as extending the inner textural quality of the bell sound itself. The visuals by my collaborator, Elysha Poirier, augment this approach by focusing on an impressionistic styling that is both driven by the sound and hints at the physical properties of the bells.

Provincial Taste

How does this bell differ from others on display? Its form is compressed, the balance of decoration and plain surface is modified, and it has one more row of knobs on each side. In addition, the suspension device is no longer a visible ring; instead, it is a bar tucked inside the tubular shank. Such bells are associated with the Ba culture, a provincial society centered in southwest China at the end of the Bronze Age. Far removed from metropolitan centers, the Ba people created their own variations of classic models.

Bell (*yong*)

Probably Sichuan province,
Ba culture

Eastern Zhou dynasty, late
Warring States period, ca.
300–250 BCE

RLS1997.48.3000



Evocative Substitutes

Unlike nearly all the other works included in this exhibition, these miniature bells were not made to be used in life but instead were produced solely for burial in tombs. The practice of creating such “spirit objects,” or *mingqi*, began in earnest in the Warring States period (475–221 BCE). By the Han dynasty (206 BCE–220 CE), funerary substitutes increased in number and variety. These miniatures, mostly from the Han period, blend characteristics of various bell types to make symbolic hybrids.

RLS1997.48.64



RLS1997.48.71



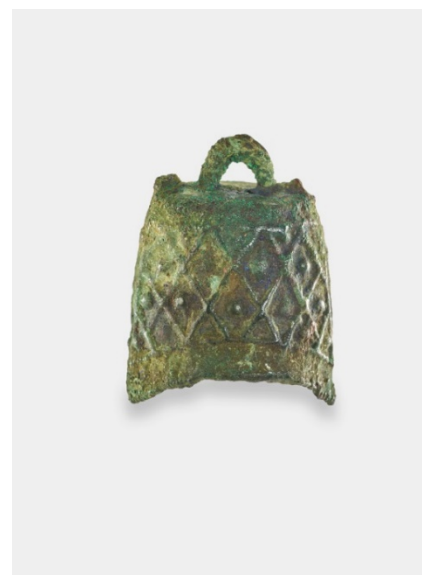
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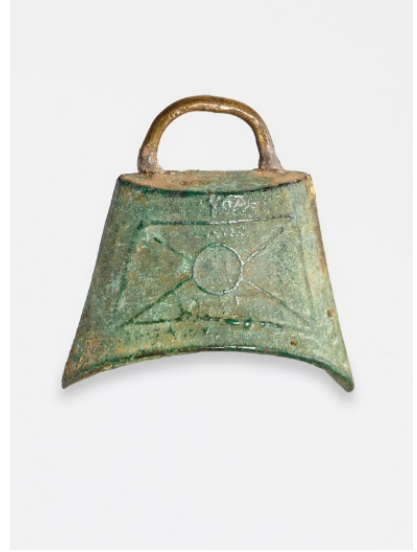
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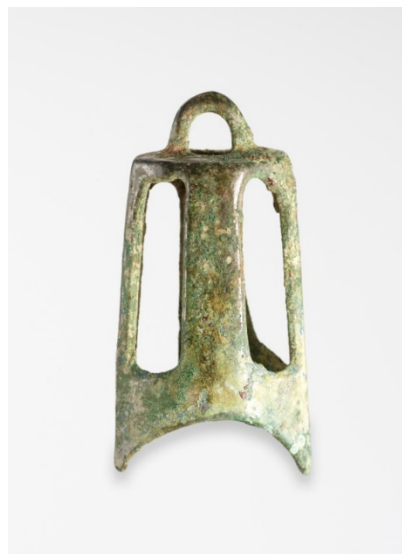
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FSC-B-231



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