String instrument from the Sinchang-dong site

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THE MUSICAL INSTRUMENTS OF PREHISTORIC KOREA

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[ABSTRACT]

This paper introduces the different types of musical instruments which have been discovered at prehistoric sites in the Korean peninsula and examines their characteristic features. It considers the social meaning of these instruments, thereby opening new avenues of archaeological research methods and interpretation.

Bronze musical instruments mainly appear in the Korean Dagger Culture, and were closely associated with the various ritual activities which took place in the Bronze Age. String instruments are seen to illustrate a broadening of instrument function, from objects which were solely intended to communicate with the gods to instruments producing various sounds which were also intended to be enjoyed by the participants of the rituals. This development is interpreted as representing the diversification of ritual practices which accompanied changes in the social structure.

[KEYWORDS]

Bronze Age, musical instrument, society, agricultural ritual, ceremonial rites

I INTRODUCTION

The world's oldest known musical instrument is a flute found at a Neanderthal habitation site in Slovenia which was made around 82,000-43,000 years ago from the bone of a cave bear. Bone flutes dating to approximately 9,000~7,000 years ago have also been excavated from Jiahu (賈湖) in Henan (河南) Province, and Hemudu (河姆渡) in Zhejiang (浙江) Province, China. However, it is very likely that use of percussion instruments, in which sounds were made by striking stones or pieces of wood, preceded the appearance of wind instruments, such as flutes made of bone or horn, and string instruments. This is because stones and wood would have been easily found and do not require special manufacture.

Prehistoric instruments found in the Korean peninsula include a bone flute from Seopohang and a small bell (小鐸, *sotak*) from Chodo, Najin, both of which can be dated to the Bronze Age. Instruments dating to the Korean Dagger Culture period (4th century BC – 1st century AD) consist of bronze bells with clappers (銅鐸, *dongtak*), moulds for bronze bells (銅範, *dongbeom*), bronze bells with beads (銅鈴, *dongnyeong*), and circular bronze instruments (圓形銅器). Finally, a type of large zither called *se* (瑟, i.e. a string instrument), clay bells, and instruments made of wood, antler or horn which were rubbed together to make sounds have been identified from the earlier part of the Proto-Three Kingdoms period. It is believed that such instruments would have been used to communicate with supernatural beings during ceremonies of a shamanistic nature, in which fertility and success in hunting were prayed for, or for other types of ritual ceremonies, such as ancestral rites. This is because most of the instruments from this period are thought to have been objects owned and used by shamans or by chiefs in charge of the rituals. Thus the appearance and development of musical instruments were organically intertwined with the social structure of the time.

As mentioned above, the oldest instrument to have been found in the Korean peninsula is a Bronze Age bone flute which comes from the site of Seopohang, in Unggi, Hamgyeongbuk-do (Figure 1). Excavated by the Institute of Archaeology of North Korea in 1961, this flute was made from the leg bone of a bird.[1]

The flute was displayed by the Korean Central History Museum (조선중앙력사박물관) in Pyeongyang as part of its collection. In April 2006, during a visit to the museum in which the loan of artefacts to be displayed at an exhibition in Seoul was negotiated, an opportunity arose to examine the actual bone flute. The flute, which was broken into several pieces at the time of its excavation, had been reconstructed almost perfectly to its original state. It had been made by boring holes into a hollow bone from a large bird such as a crane; the boring method,

using a pump drill or bow drill, could be identified through a close examination of the flute holes.

Of the artefacts on display in the current exhibition, the Early Iron Age bronze bell mould (銅鐸範, *dongtakbeom*), said to have come from Pyeongyang,[2] and a bronze bell of unknown provenance are also from the collection of the Korean Central History Museum. The importance of all three artefacts cannot be overstated, especially as the bronze bell mould and bone flute are seen as being of National Treasure and Semi-National Treasure status, respectively. Consequently, this article will focus on their significance as prehistoric musical instruments. In addition, musical instruments which have been found at other prehistoric sites in Korea will be considered according to instrument type[3], and their context of discovery, characteristics, social function and meaning will be briefly examined.[4]

II TYPES OF MUSICAL INSTRUMENTS

The musical instruments examined here have been divided into wind instruments, percussion instruments, string instruments and friction instruments. Although friction instruments may be seen as a sub-category of percussion instrument, they have been examined separately here in order to focus on their distinctive form.

01 WIND INSTRUMENTS

In the case of wind instruments, sound is made when air is blown across the holes in the body of the instrument. The only example to have been discovered in Korea is the bone flute from the Seopohang site. An image of a man blowing a horn[5] has also been identified on a rock engraving from Bangudae (盤龜臺).

1) Bone Flute

The Seopohang site is located in Seopohang-dong, Gulpo-ri, Seonbong in Raseon City (previously Unggi), Hamgyeongbuk-do. Five seasons of excavations were carried out at the site from 1960 to 1964, and nine cultural layers from the Paleolithic to Neolithic to Bronze Age were identified. Not only is Seopohang the first Paleolithic site to have been discovered in Korea following liberation from Japanese occupation, it is a key site in understanding the Neolithic culture of the peninsula's northeast region and in the study of the transition to the Bronze Age. The top two cultural layers of this site belong to the Bronze Age; the lower layer has been dated to the earlier part and the upper layer to the later part of the second millennium BC.

The bone flute was discovered in 1961, during the second season of excavation (Figure 1). Its pieces were found in the deposit around Bronze Age Burial No. 1 and House No. 15, located in Area 4. As this deposit corresponded to the lower (i.e. earlier) Bronze Age cultural layer, the flute was identified as the oldest musical instrument from Korea. The flute is shaped like a slender tube and is 18 centimeters long. It is completely hollow inside. It was discovered with one end intact and the other end broken off.

The flute has a diameter of 1.0-1.5 centimeters. Thirteen evenly-spaced holes, which form a straight line, have been bored into the body of the flute. The holes measure approximately 0.3-0.45 centimeters in diameter and are located at intervals of 0.7-1.0 centimeters. It was observed that the flute holes were relatively numerous and spaced at short intervals; it has been suggested that this would not have affected the harmony of the sounds made.[6] The holes were bored using a drill of similar size, and it is thought that a pump drill or a bow drill, such as *hwalbibi*, was used to make them. Based on the traces of friction found on the holes, it appears that the holes were made before the bone was completely dry. Burial No. 1 from this site yielded a bone needle case decorated with a band of triangle motifs filled with slanting lines, illustrating the high quality of bone tool manufacturing techniques at the time.

However, in the case of bone flutes recently discovered in China, they were found to have approximately six to eight holes, and it has been observed that the ulna (尺骨) from the wing of a red crane was used.[7] Therefore, further studies need to be carried out in order to identify the particular bone used to make the Seopohang bone flute, as well as to understand the positioning of the holes and their number.

2) Musical Instruments Depicted in Rock Engravings

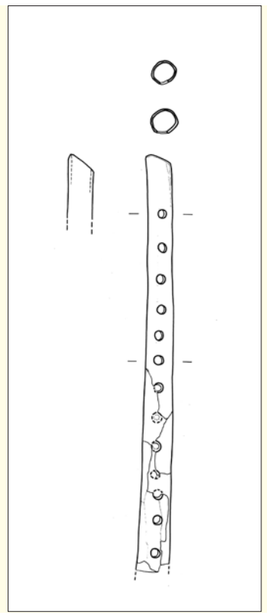
The Bangudae rock engraving, located in Eonyang-eup, Ulju-gun, Ulsan, includes an image of a figure blowing an instrument (Figure 2). The figure is realistically represented, with legs spread slightly apart and holding with both hands a horn-like instrument to his mouth. The figure is depicted in a naked state with his phallus emphasized. At first sight, the length of the instrument depicted in the rock art carving appears to be greater than the height of the figure. However, closer examination suggests that not all of the extended section can be regarded as forming a single instrument, such as a horn. In terms of form, the section of the instrument from the mouthpiece to where it is held has been described as being short and straight; beyond that point, it curves slightly and its outline consists of a ragged silhouette. One possible explanation is that this last section is a deliberate visual representation of high and low sounds vibrating strongly and spreading afar. If this interpretation is indeed correct, it may be that the type of instrument being played by the figure was a short flute, rather than a horn.

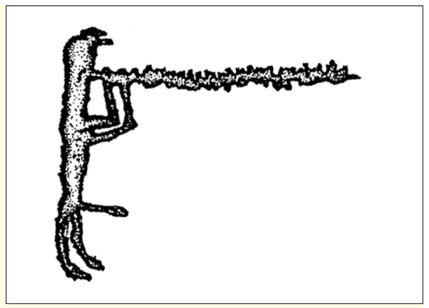
Regarding the identity of the figure, several possibilities have been suggested, but it is most likely that he was a magician playing the instrument as

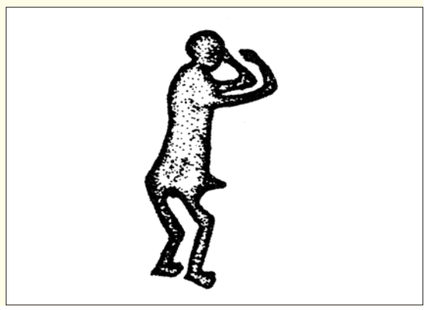
(Figure 1)
Left: Bone flute from the Seopohang site

(Figure 2)
Top Right: Figure with an instrument from Bangudae rock engraving

(Figure 3)
Bottom Right: Chief priest from Bangudae rock engraving







part of a ritual. Another rock engraving from Bangudae (Figure 3) has been interpreted as a chief priest carrying out a ceremony before hunting.[8] In other words, the instrument can be regarded as a sacred object which provided its owner with high status and sanctity. A similar image of a male figure with an exposed phallus and a bird's feather in his head (Figure 22), ploughing a field, can be found on a ritual bronze object, said to have come from Daejeon and now in the collection of the National Museum of Korea.[9] Therefore, the figure playing the instrument may also be associated with agricultural fertility rituals.[10] In other words, the act of blowing an instrument and thus producing a mystical sound while naked and exposing one's phallus may be regarded as an act intended to obtain supernatural power, while the act of ploughing while naked can be regarded as an act intended to stimulate and satisfy the Earth Goddess and thus boost food production and ensure a bountiful harvest. These rock engravings are believed to have been made mostly from the 10th century BC to the 1st century AD (during the Bronze Age to Early Iron Age).

02 PERCUSSION INSTRUMENTS

Prehistoric percussion instruments, which made sounds when struck or shaken, consist of the following three types: bells with a clapper (鐸類, *tak* bells); bells with pellets (鈴類, *ryeong* bells); and circular bronze dishes (圓形銅器). The *tak* bell consists of an elongated cylindrical body, open at the bottom; sounds were made when a clapper, made of bronze or iron, struck the lower part of the bell. The *ryeong* bell consists of a hollow, round or cylindrical body which enclosed a pellet made of clay, bronze or iron; sounds were made when the instrument was shaken. Both types of bells were ritual bronze objects of the Korean Bronze Age, but these instruments differ in both form and function. The majority of bells discovered so far have been made of bronze; stone moulds for bells, clay bells and clay replicas of bells have also been identified.

(Figure 4)
Bronze *tak* bell from the Hapsong-ri site, Buyeo

1) *Tak* Bells

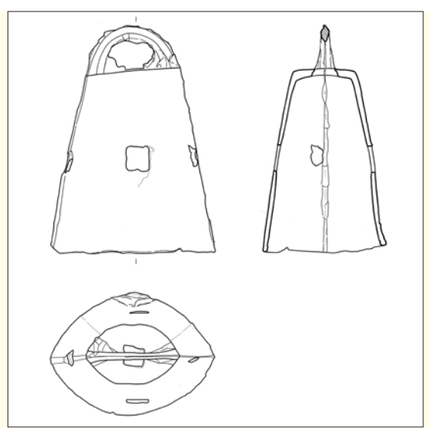
The *tak* bells and associated artefacts which have been identified are as follows: bronze *tak* bells; small bronze *tak* bells (also known as horse bells, 馬鐸, *matak*); clappers (鐸舌, *takseol*); bronze *tak* bell moulds (銅鐸範, *dongtakbeom*); and bronze-bell-shaped objects made of clay. In the case of *tak* bells, sounds are made when the clapper, which is suspended from the top of the bell, is made to strike the body of the bell. This type of bell is found in later Bronze Age sites in the Korean peninsula.

The base of *tak* bells found in Korea tends to extend outwards and is a flattened circle in cross-section when viewed from below. A semi-circular knop is attached to the top of the bell, while the clapper, which makes the sound, is suspended within. The clapper is usually attached to two holes bored into the upper part of the bell, but sometimes it is directly attached to the knop though a single circular hole located in the center of the top part of the bell. The knops are generally round or oval shaped in cross section and in many cases show evidence of wear. It is thought that this is because the bells were hung from their knops and shaken to make sounds. Evidence of wear can also be found on the protruding band which goes along the inner base of the bell. The bells are generally undecorated and range from 10 to 16 centimeters in size – the largest *tak* bell to have been found, which comes from Hapsong-ri, Buyeo (Figure 4), measures 16.1 centimeters in height. Smaller *tak* bells (i.e. *matak*), which are decorated and measure around 5 centimeters in height, appear relatively later, in the Early Iron Age, and continue to be used into

the Proto-Three Kingdoms period (ca. 1 – 300 AD). A large *tak* bell clapper, 20.7 centimeters long, was excavated from the site of Pyeongni-dong, Daegu, making it possible to infer the existence of large *tak* bells, but an actual example has yet to be found. The body of the *tak* bell also contained square or rhomboid holes which served to attach the inner core, which formed the hollow space within the bell body, to the outer mould; they therefore provide key evidence regarding the casting process. With regard to silhouette, the sides of earlier *tak* bells descended in a straight line. Clappers were first made of bronze, but then came to be made of iron. Soon afterwards, smaller horse *tak* bells appeared, the lower part of which curved inwards. These smaller *tak* bells have been found in association with vehicle trappings and therefore tend to be regarded as horse trappings rather than instruments. However, we cannot be certain about this since similar small bells found in bundles, which are shaken, can be found in the assemblage of ritual objects still used today by chiefs of ritual ceremonies. The appearance of metal percussion instruments led to the creation of pure metallic sounds, which would have opened the way for new concepts of space and time. The main audience for whom the sounds were made would most surely have been the gods associated with agriculture. Indeed, it has been suggested, based on the imagery of the ritual bronze from Daejeon (Figure 22), that the *tak* bells would have functioned to tell the gods, who came from afar riding on birds, where to descend.[11]

1-1) The Bronze *Tak* Bell from the Korean Central History Museum Collection

This *dongtak* or bronze *tak* bell, which was found completely intact, is shaped like a trapezoid and is oval in horizontal cross-section (Figure 5). Areas of bluish-green bronze rust and black corrosion can be observed on its surface and the nature of casting is generally rough. It has a total height of 13.6 centimeters, of which the knop is 2.6 centimeters high, and the bell body approximately 11 centimeters. The bell width is around 3.6 centimeters at the top and 7.5 centimeters near the bottom. The comb-shaped knop attached to the top of the



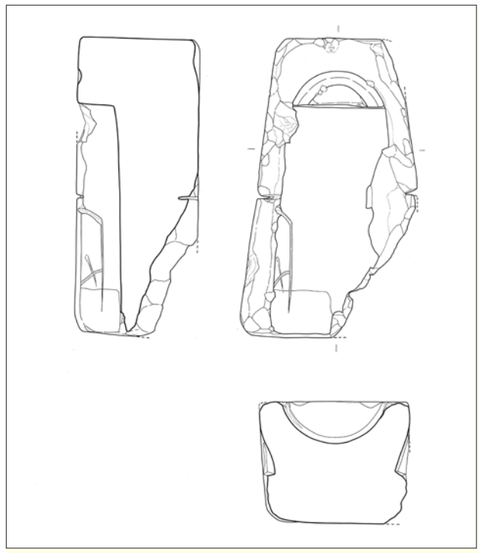
(Figure 5)
Bronze *tak* bells of unknown provenance

bell is oval in cross-section with a slightly protruding center. At its center, which is also its highest point, it is around 0.5 centimeters thick.

The walls of the bell are around 0.3 centimeters thick, with slight variations. The uppermost part of the bell, where the knop is attached, is its thickest section; it measures approximately 0.5 centimeters. Inside the bell body, a section of the bell clapper was identified; it was made of iron and the remaining 3.5 centimeter piece was found fixed to the bell. This piece is shaped like a rod and has a circular cross section measuring 0.8 centimeters in diameter. The uppermost part, around 2 centimeters in length, is curved into a ring-shape. It is thought that this part of the iron rod was bent so that the bell clapper could be attached inside the top of the *tak* bell. A protruding band, 0.3 centimeters wide and 0.1 centimeters thick, runs around the inner part of the bell body, near its base. It is thought that this is where the clapper would have struck the bell body, and that the band was installed in order to prevent damage to the bottom section of the bell.

This artefact was cast using a two-part mould and an inner core, which would probably have been carved from talc (Chinese bronze bells, however, were cast in earthenware moulds). It appears that the two moulds were not exactly identical in form, resulting in slight differences in the shape of the front and back sides of the bell – this can be clearly observed in the cross section of the knop. The two sides are seen to be slightly disjointed throughout the bell, and it is thought that this was the result of the two moulds not being perfectly aligned during casting. The protruding seam where the two moulds met was filed down after casting in the case of the bell body. However, this was not the case for the knop, and therefore the rough seam edges can still be seen.

In total, four holes used to fix the inner core in place during casting were observed: a square hole with rounded corners, 1.5 x 1.5 centimeters in size and a rectangular hole, 1.2 x 1.5 centimeters in size on the front and back sides of the bell body, respectively. One hole of irregular shape was also identified, 0.8-1.4 x 0.8-1.0 centimeters in size, on each side where the two outer moulds met, near the center of the moulding seam. In addition, a rectangular-shaped knop hole (1.1 x 1.3 centimeters in size) was found on the top of the bell. All of the holes used to fix the inner core in place were shaped at an angle so that each hole was wider inside than outside. It is thought that this way of shaping the holes so that they were trapezoid-shaped in cross-section was to facilitate the removal of the plugs or spacers after casting, by pushing them in. In addition, in the case of the holes located on the edges of the bell (i.e. along the casting seams), it is thought that they were originally intended to be both symmetrical and similar shape. However, due to the accidental moving of the plugs during casting, thereby allowing the molten metal to seep in, they ended up becoming irregularly shaped. This can also be taken as evidence indicating that the plugs were attached to the inner core during casting. Vertical bands, 1.0-1.5 millimeters wide, were observed on sections of the bell surface; it is believed that they derived from traces made on the outer surface of the core when it was carved. Thin protruding lines are also seen on sections of the surface; these are believed to reflect cracks in the mould.



(Figure 6)
Talc mould for a bronze *tak* bell presumably from Pyeongyang

In addition, a protrusion 2.5 centimeters long, 1.4 centimeters high and shaped almost like a triangle was found located on the outer surface of the bell, near its base. This is thought to be the trace of the mould gate or sprue, through which the molten bronze alloy was poured.[12] The position of the mould gate can be also dimly observed based on the fact that the band-like protrusions found throughout the surface were trimmed around the base of the bell.

1-2) The Bronze *Tak* Bell Mould from the Korean Central History Museum Collection

Although the provenance of this artefact is unknown, it has been introduced as an artefact found near Pyeongyang during the Japanese colonial period.[13] It therefore appears to be a *dongbeom* or mould for bronze *tak* bell which originated in Pyeongyang. Upon hearing from Koizumi Akio that this mould was in the collection of the Governor General Office Museum, Umehara Sueji came to Korea and noted that the mould was one of several artefacts collected by Nakamura Shinzaburo; it had been stored along with artefacts from Nangnang (樂浪, Chinese: Lelang) purchased by the Museum of the Government General of Joseon and was said to have been found around Pyeongyang.

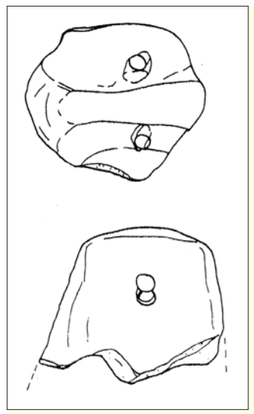
The artefact comprises one part (Figure 6) of a two-part *tak* bell mould made of talc. Overall, it is missing several pieces but the cavity of the mould is relatively intact, making it possible to infer the form of the finished bronze *tak* bell. The bell would have been 26.7 centimeters long, 6.9 centimeters wide at its top, and an estimated 12.7 centimeters wide at its base; it would have had a height of 8.8 centimeters. The silhouette of the bell would have been trapezoid-shaped, as was its mould. The mould was made from a piece of stone which formed a hexahedron, and was trapezoid-shaped in cross-section. One half of the *tak* bell was carved into the upper surface of the mould, making it concave; the lower section of the mould had rounded edges.

Located above this was the comb-shaped (櫛形) cavity for the knop. At its widest point, the bell knop was 6.7 centimeters wide – the same as the upper width of the bell – and 2.7 centimeters high. The cast knop would have formed a semi-circle; its cross-section was oval and 1.0 centimeters across. Based on the cavity carved into the mould, it can be inferred that the bronze *tak* bell was cylindrical in form, albeit narrower at the top than at the bottom. Its horizontal cross-section was shaped like an oval. The upper width of the bell was 6.7 centimeters and its exact height is unknown. If we compare the cavity carved into the mould with other bronze *tak* bells, it is possible to confirm that the cavity for the knop is relatively greater than that of other actual bells of similar height. The mould therefore demonstrates a different ratio between knop and bell. However, it appears that the bronze *tak* bell cast using the bell mould would have been approximately 16 centimeters tall, making it similar in height to the bell from Goejeong-dong. The casting surface (i.e. cavity) of the mould was found to have

been blackened during the casting process. However, there was a 3 centimeter wide section near the lower part of the cavity which was not blackened and did not demonstrate any change in color due to heat. It is thought that this was where the inner core was joined to the outer mould, so that this part was not affected by the molten bronze. This can therefore be used as important evidence, based on which the length of the cast bronze *tak* bell can be inferred. If we apply this logic, the body of the bronze *tak* bell (i.e. not including its knop) can be estimated to be approximately 16 centimeters long.

The back and right sides of the mould were damaged, but it was still possible to identify markings that appear to have been associated with the production process. The markings would have been used to note the position of the two pieces of the mould so that they would be perfectly aligned. It is thought that the upper, lower, right and left side of each mould piece (but not the front and back) would have contained a pair of markings, although at present, it is only the left and upper side of the mould which has two markings. In the case of the right and lower side of the mould, only a single mark remains. In addition, the back side of the mould, as well as its left and right sides, was found to contain a linear groove 0.2 centimeters wide and 0.9 centimeters deep which was cut into the stone. It appears that the cord used to tie together and fasten the two outer mould parts during casting would have fitted into this groove. Another characteristic feature of the mould is a groove, which measures approximately 7 x 3 centimeters, located on the center-left section of the mould. It is L-shaped forming a raised spot towards the back of the mould. It is thought that its function was to make it easy to grip the mould, thereby facilitating the separation of the two mould assembly following casting.

Bronze *tak* bells are generally found to contain a single hole at the top of the body through which the bell clapper was attached, as well as additional holes used to hold the inner core in place during casting. However, the shape and location of these holes cannot be identified from the mould. There may be two possible reasons for this: firstly, the outer mould, inner core and spacers consisted of separate pieces which were assembled; secondly, the spacers used to keep the inner core apart from the outer mould existed as protrusions on the former. In terms of the quality of the finished product, it would have been more efficient to have the spacers attached to the inner core. Indeed, it was observed that, in the case of the bronze *tak* bell from the same collection, the spacers would have been attached to the inner core (Figure 5). Finally, it may be suggested that the mould gate, which is a necessary component of the casting process, allowing the molten alloy to be poured into the mould assembly, was installed after the two outer mould sections were assembled around the inner core, with mould positioned so that the lower part of the bell faced upwards. This is because it is impossible to find any traces of the mould gate on the present mould piece, particularly near the bell knop. Of course, we cannot discount the possibility that the mould gate would have been located on the other outer section of the whole mould assembly.



(Figure 7)
Clay object shaped like a bronze *tak* bell from the Sinchang-dong site

(Figure 8)
Various bronze *ryeong* bells presumably from Deoksan

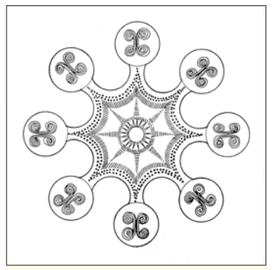
1-3) Clay Object Shaped Like a Bronze *Tak* Bell

Only one example of a clay object shaped like a *dongtak* or bronze *tak* bell has been discovered in Korea; it comes from Sinchang-dong, Gwangju (Figure 7).[14]

It is only the relatively flat and oval-shaped upper section of this clay object which remains. However it is here that the traces of knop holes were found. Although the body of the bell is damaged, the inner surface contains evidence of a hollow space. Overall, it appears that the clay object was made in an attempt to imitate the form of the bronze *tak* bell. It is significant that the object was found within a settlement context, in contrast to the majority of bronze *tak* bells which, as ritual bronzes, were deposited in burials.

2) *Ryeong* Bells (鈴類)

The *ryeong* bells unearthed at prehistoric sites in Korea appear to have been ritual objects used by chief shamans in the period of the Korean Dagger Culture (Figure 8). Their distribution is limited to the central and southern regions of the Korean peninsula. Chronologically, their appearance follows after that of the bronze *tak* bell. Artefacts which can be regarded as *ryeong* bells include eight-branched *ryeong* bells (八珠鈴, *paljuryeong*), double-headed *ryeong* bells (雙頭鈴, *ssangduryeong*), composite double-headed *ryeong* bells, elongated pole-top *ryeong* bells (竿頭鈴, *ganduryeong*), round staff-end *ryeong* bells (柄附銅鈴, *byeongbudongryeong)*, silkworm cocoon-shaped *ryeong* bells (蠶形鈴, *jamhyeongryeong*), all of which were made of bronze, and clay *ryeong* bells (土鈴, toryeong).



(Figure 9)
Eight-branched *ryeong* bell from the Daegok-ri site

2-1) Double-Headed *Ryeong* Bell

The eight-branched *ryeong* bell consists of an octagonal bronze plate which has a *ryeong* bell attached to each of the eight protruding corners. So far, this type of bell has been discovered at Daegok-ri in Hwasun, Jeollanam-do (Figure 9); other examples are said to have come from Deoksan and Nonsan. It appears that this type of bell usually occurs in sets of two. Of these, the eight-branched *ryeong* bell from Daegok-ri shows decoration of superior quality and is the only example of certain provenance. The central section is decorated with a radiating sunbeam motif, and the edges of the octagonal plate are again decorated with a sunbeam motif, formed by engraving a band of short lines. A small ring was made on the back of the bell, through which a cord would have likely been threaded; the bell would have been held by hand or attached to clothing via this cord,

and sounds would have been made when the bell was shaken. A pair of symmetrical fern leaf motifs were incised onto the surface of each small bell. In the case of the Daegok-ri eight-branched *ryeong* bell, the backs of the small bells were left undecorated. However, identical motifs were found decorating the front and back surface of each small bell in the case of the eight-branched *ryeong* bell said to have come from Nonsan. Such eight-branched *ryeong* bells are not found in contemporary archaeological contexts from surrounding areas, such as China and Japan, and therefore may be understood as a distinctive type of bronze artefact found only in Korea.

2-2) Eight-Branched *Ryeong* Bell

The double-headed *ryeong* bell consists of a tubular bronze rod with a *ryeong* bell attached at each end. These have normally been found in pairs. One was found at the Chopo-ri site, in Hampyeong, while others are said to have come from Duksan and Nonsan. The single example illustrated here was excavated from Daegok-ri, in Hwasun (Figure 10). Although some have been left undecorated, others have been decorated using short slanting lines and triangular motifs. A rectangular hole pierces the center of the rod which connects the two *ryeong* bells and it is thought that a wooden staff or a cord would have been inserted into this hole. The connecting rod was also decorated using motifs similar to those found on the bells.

2-3) Composite Double- Headed *Ryeong* Bell

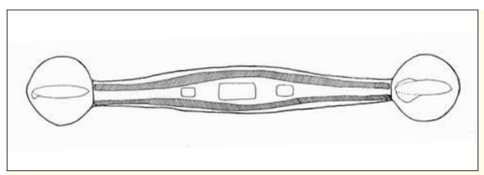
The composite double-headed *ryeong* bell was made by joining and intersecting two bronze rods, each of which had a *ryeong* bell attached to one end (Figure 11). The section where the two rods met, located at the opposite end, formed a tongue and groove structure through which the ends were joined. The bell would have been held by this section and shaken. Three examples have been identified so far, which are from Daegok-ri in Hwasun, and Chopo-ri in Hampyeong, and presumably from Nonsan.

2-4) Elongated Pole-Top *Ryeong* Bell

This instrument was attached as a finial to the end of a pole and shaken to make a sound. It is also called a yeongbyeongdu. At the base of the elongated *ryeong* bell was a hollow space into which the pole was inserted. A protruding band went around its center and a torpedo-shaped bell formed the upper section of this instrument. Radiating slits and a cross-shaped sunbeam motif are found decorating this upper section, while stamped triangle and square patterns decorate the lower section. The decorative nature of elongated pole-top *ryeong* bells appears to have become stronger with time, as can be seen from the Nonsan example, which was followed by the Chopo-ri example (Figure 12), and finally the Jukdong-ri example.

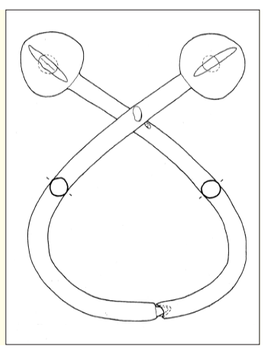
2-5) Round Staff-End *Ryeong* Bell

The round staff-end *ryeong* bell consists of a *ryeong* bell attached to a hollow socketed extension, into which a wooden staff could be inserted. The earliest example, which is also the best known, comes from the site of Chopo-ri, in Hampyeong. Another example was found at Ipsil-ri. The round staff-end *ryeong* bell from



(Figure 10)
Double-headed *ryeong* bell from the Daegok-ri site

(Figure 11)
Composite double-headed *ryeong* bell from the Chopo-ri site



Chopo-ri is of the mother-and-son type, in which a smaller inner bell is located within the larger outer bell. Located at the top of the outer bell is a square-shaped protrusion which is pierced by a hole; it appears that threads used to decorate the bell were inserted into this hole. The socketed extension located at the bottom of the bell extends in a straight manner, becoming wider at the end. Based on the fact that a piece of wood was found within this socketed extension, it is likely that a wooden staff would have been inserted when using the bell (Figure 13).

2-6) Silkworm Cocoon-Shaped *Ryeong* Bell

This type of *ryeong* bell in the shape of a silkworm cocoon was found in the Jeongbaek-dong area of Pyeongyang (Figure 14); another example comes from a collection from Gyeongju or the surrounding area. Overall, the bell is shaped like a peanut, with a slender central section flanked to the left and right by rounded sections. A circular ring sits on the top of the bell. Based on its form, it is highly likely that the bell was used as an ornament to embellish the hilt of a sword used by a ritual chief. The sounds of the bell would have been made by the beads put into either side of the slender central section of the bell. This type of bell emerged around the end of the Early Iron Age but soon disappeared.

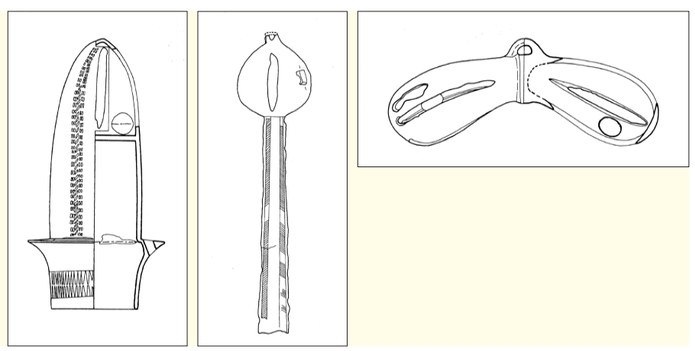
2-7) Clay *Ryeong* Bell

Clay *ryeong* bells dating to the prehistoric period consist of the elongated egg-shaped bell (Figure 15) and the bell with a face motif (Figure 16) both from Sinchang-dong, Gwangju. The former was found in a half-destroyed state, but it was possible to identify the presence of a knop hole, which suggests that the clay bell would have been hung or attached to a cord. The artefact was found to contain a small pellet within its hollow inner space, allowing the bell to make a sound when shaken. The clay bell with a face seems to be associated with a godly appearance; the top and base of the object was flat and an eyebrow was drawn near the center of its body, thereby giving it the appearance of a face. This bell was also hollow and also contained a small pellet which made a sound when the bell was shaken. A

(Figure 12)
Left: Elongated pole-finial *ryeong* bell from the Chopo-ri site

(Figure 13)
Center: Round staff-end *ryeong* bell from the Chopo-ri site

(Figure 14)
Right: Silkworm cocoon-shaped *ryeong* bell from the Sinchang-dong site



similar example of a face can be found on the shell mask from the Neolithic site of Dongsam-dong, although the function of this artefact would have been different to that of the *ryeong* bell. Such faces, in which the eye or face of a god was expressed, appear to have been associated with rituals; they usually demonstrate stern or stiff expressions.

3) Circular Bronze Dishes

Other types of percussion instruments include circular bronze dishes with relatively thin walls. In Korean, it is also called a *wongae* type (圓蓋, round cover) or *wonpan* (圓板, round disc) bronze instrument. It is a round object, shaped like a plate, and gently convex in the center. A single knop adorns this convex area, allowing it to be held by a threaded cord. Larger examples of this instrument, from Goejeong-dong (Figure 17), Dongseo-ri and Hapsong-ri, were found to contain cracks or were slightly broken, making it possible to infer that the instruments may have been held in one hand using a cord and hit with a rod, as with the gong. A small circular instrument excavated from Chodo, Najin, may be not be directly related. Another circular bronze instrument excavated from Iksan is decorated, in its central concave section, with crosses surrounded by radiating sunbeams. This ornamental motif is similar to the cross-shaped sunbeam motif found on bronze mirrors and eight-branched *ryeong* bells. The back of the Iksan instrument contained a double row of dotted lines forming a circle; the trace of a knop can be found in its center.[15]

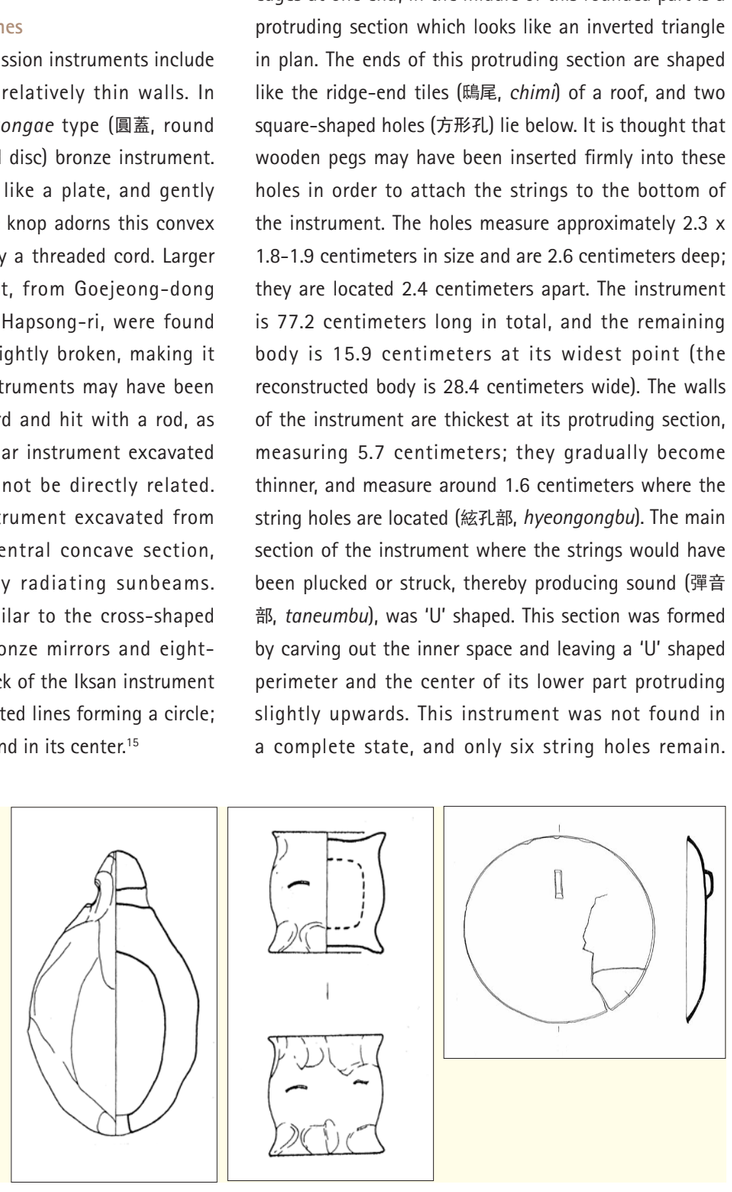
03 STRING INSTRUMENT FROM THE SINCHANG-DONG SITE

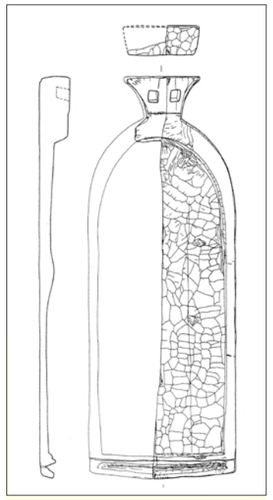
A stringed instrument was discovered at the wetland site of Sinchang-dong, Gwangju, in 1997 (Figure 18). It has a total length of 77.2 centimeters. Its main body is shaped, in plan, like a rectangle with rounded edges at one end; in the middle of this rounded part is a protruding section which looks like an inverted triangle in plan. The ends of this protruding section are shaped like the ridge-end tiles (鴟尾, *chimi*) of a roof, and two square-shaped holes (方形孔) lie below. It is thought that wooden pegs may have been inserted firmly into these holes in order to attach the strings to the bottom of the instrument. The holes measure approximately 2.3 x 1.8-1.9 centimeters in size and are 2.6 centimeters deep; they are located 2.4 centimeters apart. The instrument is 77.2 centimeters long in total, and the remaining body is 15.9 centimeters at its widest point (the reconstructed body is 28.4 centimeters wide). The walls of the instrument are thickest at its protruding section, measuring 5.7 centimeters; they gradually become thinner, and measure around 1.6 centimeters where the string holes are located (絃孔部, *hyeongongbu*). The main section of the instrument where the strings would have been plucked or struck, thereby producing sound (彈音部, *taneumbu*), was 'U' shaped. This section was formed by carving out the inner space and leaving a 'U' shaped perimeter and the center of its lower part protruding slightly upwards. This instrument was not found in a complete state, and only six string holes remain.

(Figure 15)
Left: Clay *ryeong* bell from the Sinchang-dong site

(Figure 16)
Center: Clay *ryeong* bell from the Sinchang-dong site

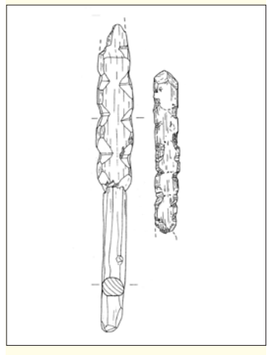
(Figure 17)
Right: Round bronze instrument from the Goejeong-dong site





(Figure 18)
String instrument from the Sinchang-dong site

(Figure 19)
Various notched bone objects from the Jodo shell mound



(Figure 20)
Friction instrument from the Sinchang-dong site

However, based on its structure and form, it appears that ten string holes would have existed. In other words, this artefact from Sinchang-dong was originally a ten-stringed instrument. An actual example of such a string instrument, similar to the one from Sinchang-dong, has also been discovered at the Imdang site, in Gyeongsan, in the wooden coffin burial No. A-I-121.[16]

Evidence of a lacquered musical instrument was also identified in a wooden coffin burial at the Daho-ri site. It therefore appears that such string instruments were deposited in the burials of high status individuals, such as chiefs. This may suggest that the string instruments were played during funerary rituals and were buried afterwards as offerings.

04 FRICTION INSTRUMENTS FROM THE SINCHANG-DONG SITE

Friction instruments (擦音樂器) were made by cutting notches into the surface of rods made of antler or wood. Sounds were made when a pick was rubbed against the notched surface. The site of Sinchang-dong has yielded wooden friction instruments, while others made of antlers have been found at sites such as the Jodo shell mound in Busan (Figure 19), the Seongsan shell mound in Masan, and the Geumpyeong shell mound in Boseong, which can clearly be distinguished from knife handles (刀子柄) made of similar materials. The two wooden friction instruments from Sinchang-dong had, or are thought to have had, handles (柄部) (Figure 20). The main body of the instrument, attached to the handle, contained notches (刻目) which were relatively deeply cut and shaped like inverted triangles in cross-section. It is the depth and interval of these notches which determined the sounds made through friction, and differences in pick form and friction speed also produced various types of sounds. The friction picks (摩擦棒) were made of wood or bamboo, and different pick shapes were used according to the desired types of sounds. It is thought that such friction instruments were used to keep time when performing magical ceremonies or when singing songs during agricultural work. Although we do not know much about their origins, it appears that the notched bone objects (刻骨) found at various sites from the Bronze Age onwards may demonstrate genealogical links, in terms of form, to this instrument.

III INSTRUMENTS IN TEXTUAL RECORDS

The earliest recorded mention of instruments in Korea comes from the Dongyi-zhuan (東夷傳, Accounts of the Eastern Barbarians) of the *Weishu* (魏書, Wei History), which forms part of the *Sanguozhi* (三國志, History of Three Kingdoms) compiled by Chen Shou (陳壽). Given Chen Shou's dates of birth and death (233-97), it appears that this text of Chinese history was compiled during the late third century; in other words, this text represents the accumulation of

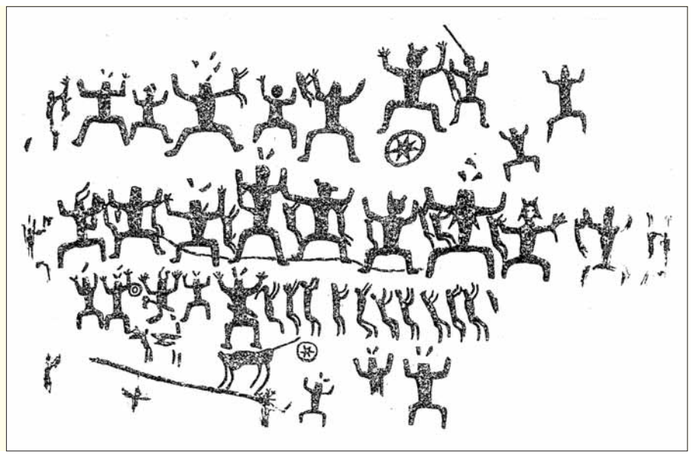
records made prior to this period. In particular, given that they chart how the division, consolidation and stratification of communities in the Korean peninsula progressed immensely following the introduction of iron, ultimately leading to the establishment of states, the records should be regarded as a chronicle of social developments accumulated over a long period of time, rather than as a single body of work produced at a single point in time. These changes, in fact, took place between the second century BC to the third century AD, which coincides with the archaeological periods of the Early Iron Age and Proto-Three Kingdoms period.

01 *TAK* BELL DANCE (鐸舞, *TAKMU*), *RYEONG* BELL AND DRUM (鈴鼓, *YEONGGO*) RITUAL

The "Monograph on the Han (韓條)" of the *Dongyi-zhuan* records that "Each year in May, after sowing, ancestral rites are carried out for the spirits. They come together and sing and dance and drink throughout the day and night. Dozens of people dance together, forming a line; they step on the ground, crouch and stand up, all the while keeping rhythm with their hands and feet; the noise produced by this makes it sound as if it were a *tak* bell dance. This takes place again after the harvest in October." Along with the record about the *sodo* (蘇塗, sacred place; Chinese: *sutu*),[17] this is the section most often quoted. It relates to the types of rituals that pray for an abundant harvest, which can be seen in the folk practices of agricultural societies; it may therefore be regarded as a record relevant to the nature of agricultural life around the time that the bronze *tak* bell appeared. In other words, this record describes the feasts of the agricultural community which took place after sowing in order to pray for an abundant harvest, as well as to celebrate the joy of harvesting and the promise of a similar harvest next year. This ritual was compared to a '*tak* bell dance', and it is therefore highly likely that this dance featured the bronze *tak* bell. Although the specific nature of the *tak* bell dance cannot be known, some have suggested that it would have been similar to the bronze drum rituals (銅鼓儀禮) of Yunnan Province (雲南省) in China.[18]

This ritual is usually accompanied by the act of dancing while stepping on the earth, in synchronization with a pair of [male and female] bronze drums. The rock art of the Zuo River (左江), in the Guangxi Zhuang Autonomous Region, also contains images of a similar form of bronze *tak* bell dance (Figure 21). Much of the rock panel depicts figures carrying out the bronze drum ritual; the images consist of figures standing in a row with arms and legs spread apart, coordinating movements, as well as figures sitting up and down, clapping.[19] This is consistent with the description of the *tak* bell dance which appears in the Dongyi-zhuan. In particular, it is of great interest that a figure has been depicted with bird feathers in his or her hair (鳥裝人物), similar to the figure which appears in the ritual bronze from Daejeon (Figure 22). Further research is required in order to better understand how this image may be related to the record in the Dongyi-zhuan, but it can be regarded as important material which can shed light on the nature of the society in which this type of agricultural ritual was carried out.

(Figure 21)
Zuo River rock art of the Guangxi Zhuang Autonomous Region

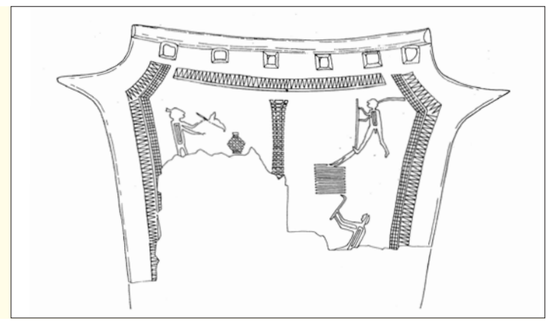


In addition, the Miao people (苗族) are said to plant, in the sacred square of the village, a windswept tree – regarded as a guardian tree – and hang upon its branches a bronze drum.[20] In the case of the Yao people (布努瑤族), they are said to always hang a pair of [male and female] bronze drums. These bronze drum rituals coincide with the account in the "Monograph on the Han" of the *Dongyi-zhuan* which records that "They plant a large tree upon which they hang bells and drums and carry out ancestral rites for the spirits." In particular, the fact that, at villages where the bronze drum ritual is carried out, the Miao people refer to the central square of the village as *lushengping* (盧笙坪),[21] "arena for the gourd flute" and regard it as a sacred place.[22] This also coincides with the account which notes that "... there is a special area called the *sodo*... anyone who seeks refuge there will not be turned away..." in relation to the existence of a holy place.[23] Of the instruments discovered at archaeological sites in Korea, a drum has yet to be found. However, given the presence of deer bones in shell mound sites, it is highly likely that instruments, such as drums, which utilized deer hides were present from an early period.

02 THE *SE* (LARGE ZITHER)

The *Weishu* Dongyi zhuan[24] notes that "There is a tribe that likes dancing and drinking. They have an instrument called the *se* (瑟, strings, Korean: *seul*) the appearance of which is similar to that of the *zhu* (筑, ancient lute, Korean: *chuk*). Sounds are made when it is struck," which indicates that the zither was already in existence at the time. The issue remains, however, whether the string instruments found at the sites of Sinchang-dong and Imdang referred to above can be identified as the zither. The Dongyi-zhuan notes that the *se* was rectangular

(Figure 22)
Ritual bronze object with farming scene, presumably from Daejeon



in shape, over 160 centimeters long and 40 centimeters wide, and had a sound box, whereas one of the string instruments from Korea is, for example, only 77.2 centimeters long.[25] In addition, the annals say that the *se* was similar to the *zhu*, but the *zhu* is usually made of bamboo, is long and narrow, and has a simple structure. It has also been widely noted that the number of strings differs from that of the instrument from Sinchang-dong. An actual example of the Chinese *zhu* instrument was discovered at the Kofun period site of Tzunetake Nishiura, located in Shizuoka, Japan; it is clearly different in form to the instrument from Sinchang-dong. In addition, the Sinchang-dong instrument, at 77.2 centimeters, is too short to have been played with one end resting on the knee, as was the custom in early China. Therefore, if we accept the record which states that the *se* was similar to the *zhu*, there is still the possibility that the string instruments from Sinchang-dong and Imdang were instruments not related to the *se*, but indigenous to the Korean peninsula. A fresh and refined approach to the study of these instruments is thus keenly needed, which can overcome the paucity of the Korean material and the differences in form which exist. A comprehensive analysis which considers the nature of the material, remaining features, contexts of discovery, manufacturing techniques applied may be of use.

IV CONCLUSION: THE SOCIAL CONTEXT OF PREHISTORIC INSTRUMENTS

The aim of this paper has been to examine the different types of instruments found at prehistoric sites in the Korean peninsula, with focus on the actual artefacts which could be observed from the Korean Central History Museum in Pyeongyang. Artefacts associated with the production of artificial sounds include the bone flute, which is the oldest instrument to have been found in Korea, *tak* and *ryeong* bells which emerged during the later period of the Bronze Age, the string instrument from Sinchang-dong, clay bells and friction instruments made of notched wood and antler. With regard to the instrument depicted in the Bangudae rock engraving, it was interpreted as a flute-like object, although there remains the possibility that it may be portraying a horn. Even if the present paper could not provide further insight regarding the flute as the earliest-appearing instrument, it was able to confirm that the appearance of bronze musical instruments, which comprise the majority of surviving prehistoric musical instruments, was centered around the Korean Dagger Culture period. The bronze *tak* bells were in wide use during Phase I of the Korean Dagger Culture period, and the various types of bronze *ryeong* bells were prevalent during Phase II of the Korean Dagger Culture period.[26]

In terms of spatial distribution, bronze musical instruments first appeared around the western parts of the south-central region of the Korean peninsula; they gradually spread to the Yeongnam (i.e. Gyeongsang-do) region, and came to be made of iron. That these instruments were closely associated with various ritual practices which took place in the Bronze Age was suggested through several examples. Rituals which pray for abundance and give thanks for the harvest continue to this day, although times have changed. This is because acknowledging the limitation of human *vis-à-vis* the godly power of nature belongs to the realm of faith – of the gods – and becomes the basis for rituals.

It is widely accepted that the bronze objects found in archaeological contexts belonged to the shamans who presided over rituals in a theocratic society. Of these objects, the bronze *tak* bell made sounds when it was shaken and the clapper struck the side of the bell body. The *tak* bell first emerged, along with the bronze drum, during the Shang Dynasty of China; in the Korean peninsula, it appeared around the end of the Bronze Age. It was believed that, when the ceremonial chief rung the bronze *tak* bell during rituals, the sound was transmitted to the gods. This type of ritual is well documented in a ritual bronze object from the Bronze Age. In this bronze object, said to have come from Daejeon, a scene from an agricultural ritual is depicted, in which a male priest with a feather in his head and his phallus exposed is shown ploughing a field. Similar depictions of figures, thought to be priests, wearing bird feathers and bird masks can be found on Japanese ceramic jars of the Yayoi period[27] and the bronze vessel from the Gaoya tomb of the Chu state from the Warring States period, which is located in Huaiyin County, Jiangsu Province.[28] A bronze drum from Yunnan Province was also found to contain an image of a priest, dressed as a bird, riding a boat. The bronze *tak* bell dance recorded in the *Weishu* Dongyi zhuan can be understood in relation to the images of the bronze drum ritual depicted on the rock art of the Zuo River, in the Guangxi Zhuang Autonomous Region, in which dancing and the playing of instruments is shown to be coordinated by a figure dressed as a bird.

In addition, the discovery of a string instrument at Sinchang-dong indicates that percussion instruments, such as bronze *tak* bells, later came to be accompanied by string instruments. It may be suggested that this represents the broadening of instrument function; no longer were they merely objects intended to communicate with and please the gods, but were instruments, producing various sounds, which could also be enjoyed by the participants of the rituals. This can also be taken to indicate the diversification of ritual practices that accompanied changes in the structure of agricultural society, the latter emerging as a result of the widespread use of iron which brought about an expansion of farmlands and an increase in agricultural production. Such diversity in ritual practices can also be gleaned through the clay *ryeong* bell with a face, bird-shaped wooden object, pig-shaped clay figurine, clay *ryeong* bell, bronze *tak* bell (represented by the presence of a bell clapper), clay object shaped like a bronze *tak* bell, friction instrument, string instrument, and weapon-shaped wooden instrument from Sinchang-dong, as well as symbolic representations, such as that of the bird, which formed part of the ceremonial chief priest's dress. Such artefacts, which do not occur in earlier periods, are highly likely to have been associated with agricultural rituals. Moreover, when ancestral rites are included, the number of objects associated with rituals can be seen to increase greatly, encompassing oracle bones, snake-patterned lacquer objects which were used as talismans to protect against danger, and various miniatures which were used in a variety of contexts.

Of the archaeological material associated with the agricultural rituals of the time, the bird-shaped wooden figures are of particular interest. Two different types have been identified: those which have been sculptured three-dimensionally and those which are flatter, cut out from wooden boards. Although these figures do not contain peg holes into which the wings of the bird could have been inserted, it cannot be denied that they were indeed birds. These wooden bird figures can be understood in a similar way to the bird sitting on a tree on the ritual bronze said to come from Daejeon since both may be regarded as 'birds which call the gods', which were an important symbolic component of farming rituals. In addition, the agricultural landscape described in the *Weishu* Dongyi zhuan, in which every spring and autumn, bells and drums were utilized during ancestral rites which took place at special, sacred places called *sodo*, may be regarded as generally representing the reality of agricultural life in the Bronze Age villages of the Korean peninsula.

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