

TRADITIONS

The construction and use of the knobbed gong in Taiwan

by Han Kuo-Huang

Of all the names for musical instruments, "gong" is perhaps one of the most confusing. It has been applied to many different objects: metal discs, metal bowls, iron bells, bronze drums, steel drums, hollowed-out wooden troughs, sounding rocks, and more.

Sachs and Hornbostel described the gong as a percussion vessel made of a sonorous material in which "the vibrations are strongest near the vertex or centre" (1961:15). Based on this criterion, Jeremy Montagu, curator of the Bates Instrument Collection in Oxford, England, established a five-type gong classification system, illustrated in Figure 1 (1965:19).

Type A—a metal disc, which is 1) slightly dished with a rim curved back about an inch or more, such as most Chinese gongs and Western orchestral tam-tams; or 2) a flat bronze dish without a rim, like Indian gongs.

Type B—a metal disc in which the rim is 1) turned back at a sharp (usually 45 degree) angle and much deeper than A-1, like the *gansas* of the Kalingas in Northern Philippines; or 2) turned back and the surface has a knob or boss at the center, like the vertically-suspended Indonesian gongs and *kempul*.

Type C—a gong in which the face is raised with a center knob on the top like a mount and the rim is very deep, usually deeper than the radius; examples are kettle-gongs like the horizontally-suspended *bonang* and *kenong* in a Javanese gamelan.

Type D—a hollowed-out rectangular wooden "drum" that is struck on the top surface above a small rectangular hollow cut in the lower surface, like the wooden gongs of the Fijian Islands.

Type E—the steel drum of the Caribbean Islands; each area on the drum surface vibrates centrally and separately like an independent gong.

Most Southeast Asian gongs, such as those found in Indonesia, are type B-2, whereas most Chinese gongs are type A-1. One notable exception is a knobbed gong of type B-2 used extensively in Taiwan; its history, manufacture,

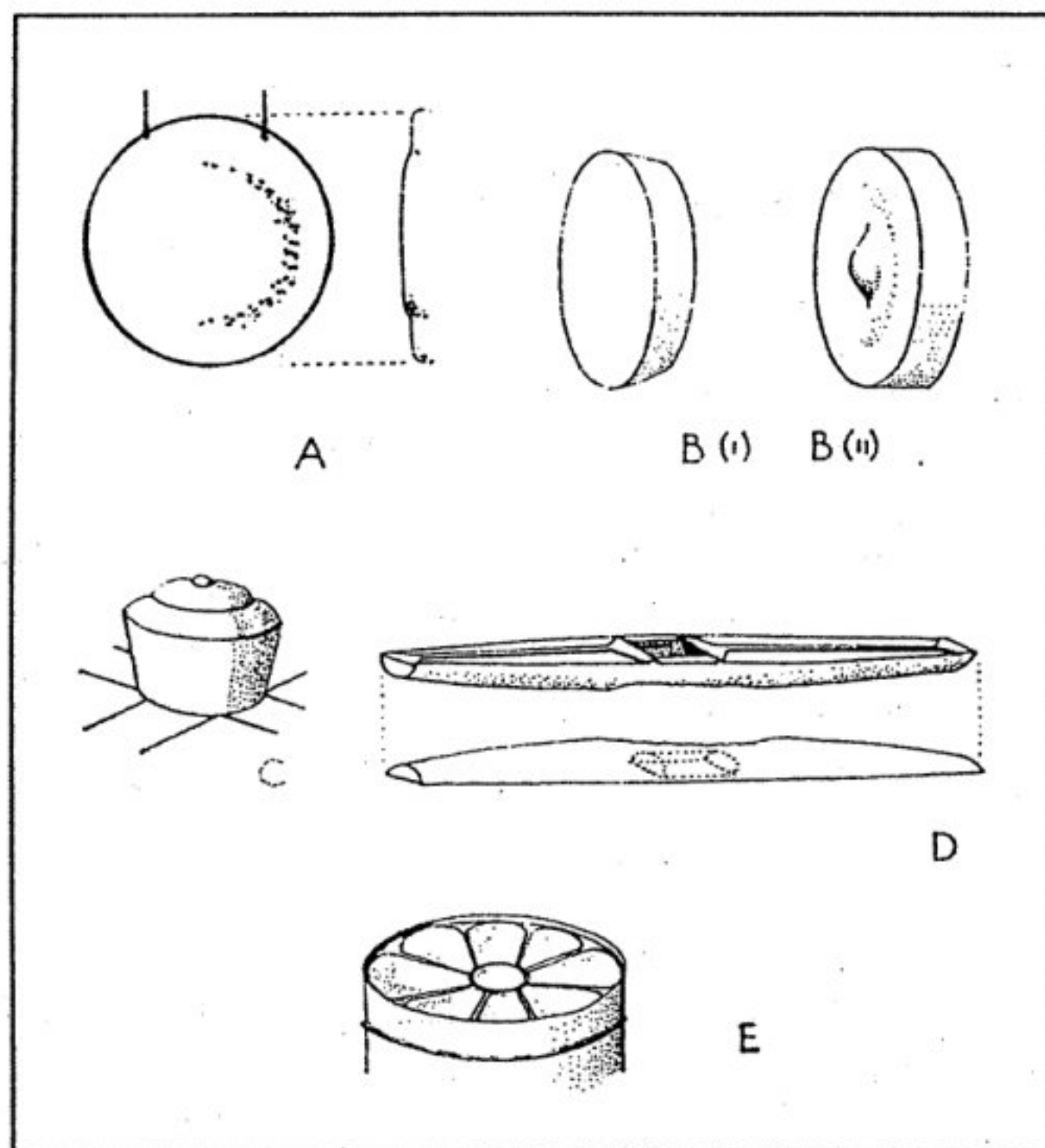


Figure 1. The five types of gong.

and use are discussed in this article.

In contemporary practice, the majority of Chinese gongs do not have knobs. Exceptions are the knobbed gongs used in the drum music of Shaanxi Province in northern China, the Beiguan Opera and processional music in Taiwan, and the Chaozhou Gong and Drum Music of Guangdong Province in southeast China. Since most Taiwanese came from Fujian and Guangdong provinces in southeast China, it is likely that the Chaozhou knobbed gong might be one example of an older type of Taiwanese knobbed gong.

Lin Wu and knobbed gongs in Taiwan

The Lin Wu Iron Factory in Yilan, a city on the northeastern coast of the island, is the source for about 80% of the knobbed gongs used in Taiwan. The shop, which is named for the owner, produces mainly gongs and cymbals. Occasionally, the shop provides spare parts for refrigerators or bars for doors and windows. At age 71, Lin Wu enjoys collecting rocks and cultivating orchids more than making

K. H. Han is professor of world music at Northern Illinois University, where he teaches Balinese and Javanese gamelan as well as Chinese music. This paper was first presented at the Society for Ethnomusicology Midwest Chapter meeting held at the University of Wisconsin-Green Bay, April 12, 1987.

gongs, but his sons and grandsons have carried on his work, and his sixth son is presently in charge of the business.

Mr. Lin began his career at age sixteen, as an apprentice in an iron factory. By the time he was twenty-eight, he decided to concentrate on gong making and began to experiment with different techniques for improving instrument construction. At that time, all gongs in Taiwan were made of iron, with low knobs and narrow rims. In the early 1930's, the Jingyue Xuan Music Club of Yilan City imported a bronze gong from Java. Lin examined the gong and discovered construction methods that were new to him.

Using the Javanese gong as a model, he used imported brass instead of iron to make his knobbed gongs. According to Mr. Lin, the older gongs vibrated only at the vertex, but his improvements made the gong vibrate both at the vertex and the rim. This change is due to enlarging the width of the rim, changing the rim angle to about 45 degrees, smoothing out the edge connecting the rim and the surface of the gong, and raising the knob¹. In addition to these changes in design, Mr. Lin felt his gongs had a particularly deep, solid, and long-lasting sound, which was much appreciated in the city of Yilan (Wang 1986:102)².

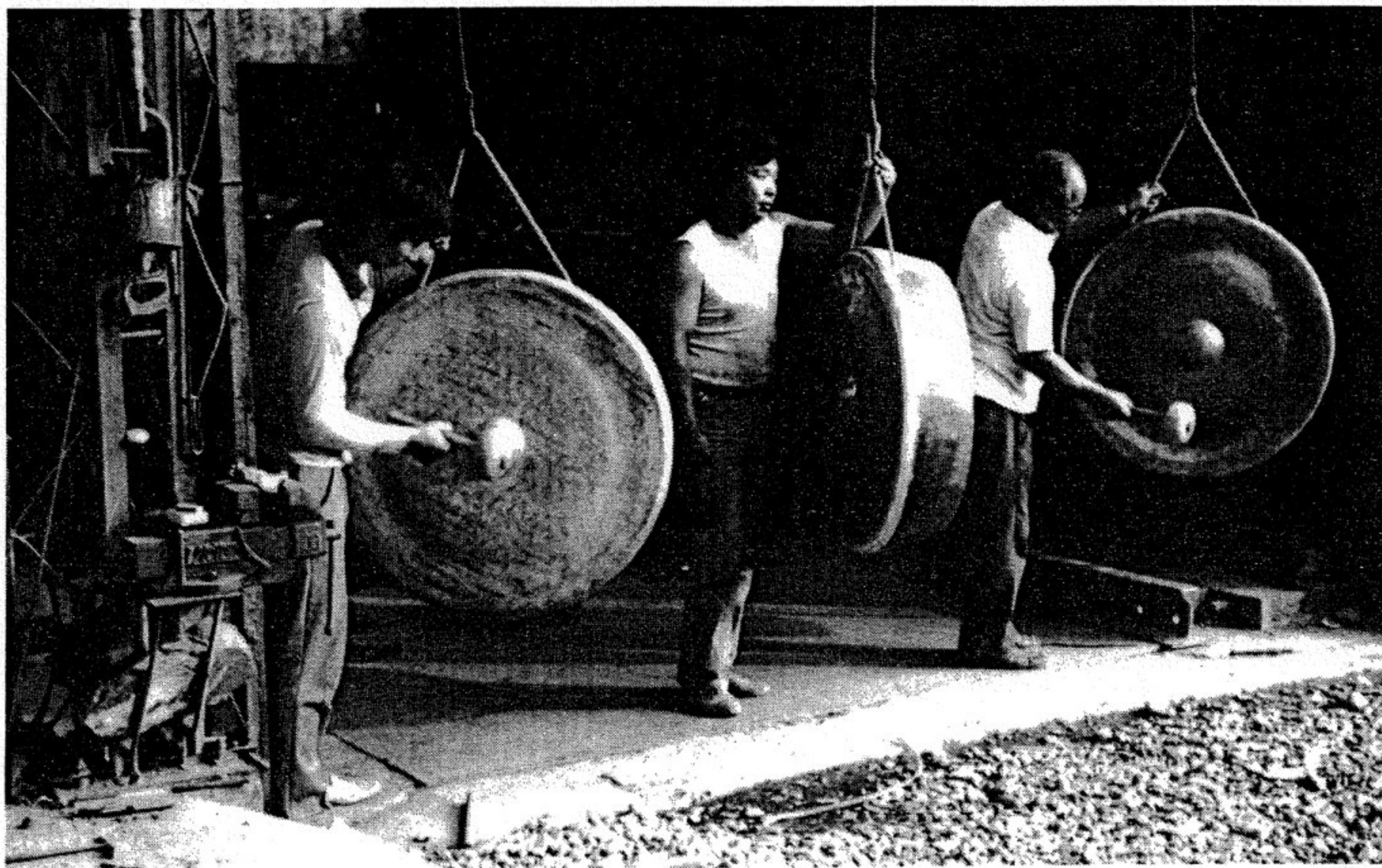
Two types of gongs are produced by the Lin Wu Iron Factory: flat gongs with deep rims (type B-1), and knobbed gongs (type B-2). Each is made in several sizes. The normal flat gong, called "Horse Gong" (*Maluo*), is 14 inches in diameter with a rim of 1 1/2 inches. This is used as a signal gong in mountain villages, or as an instrument in religious dances and parades. It looks very much like the *gansa* of the

Kalinga people of the northern Philippines. The smaller flat "Cake Gong" (*Bingluo*) is only 6 inches in diameter. The factory produces four sizes of knobbed gongs, with diameters of 6 inches, 10 inches (called *Tongzhong luo*, "Bronze Bell Gong"), 24 inches, and 28 inches. On one occasion, in 1985, the Lin factory made a huge 70-inch gong, perhaps the largest of its kind in the world. All four sizes of the knobbed gong type were made for the author during several visits in 1985-86.

Two types of brass are used by the Lin Wu Iron Factory: local brass and imported Japanese brass. The gongs made for the author were made of imported Japanese brass, an alloy of 65% copper and 35% zinc³. In addition to having a knob in the center, all the gongs have a sunken circle along the edge on the surface—a feature which causes the gongs to resemble Javanese gongs, at least superficially.

The construction process for knobbed gongs

The entire process of making a small gong takes only 35 to 45 minutes. The smaller gongs of 6 and 10 inches in diameter are made from a single piece of brass cut from a large brass plate. After cutting the desired shape, the piece is heated for a few minutes with a kind of firegun. Small and large circles are drawn at the center and edge, respectively, as guides for the positions of the knob and the sunken circle. Then the hammering process begins. An iron anvil with a hole in the center serves as a template. The brass piece is placed on the anvil and is hammered at the center until the central portion is pushed down into the hole of the anvil to



form a knob. Then the piece is placed on a wooden anvil, used for hammering the curved rim and the sunken circle. During this process, the gong maker continuously hammers the surface to achieve the desired thickness and test the tone. No specific pitch is intended, but a clear tone is sought. A second person is needed from time to time to hold the edge of the brass piece. This step requires about 20 minutes. Then, two holes for hanging are drilled in the rim with an electric drill, and the edge of the rim is smoothed down with an electric-operated stone wheel. Finally, the finished product is polished with sand and oil.

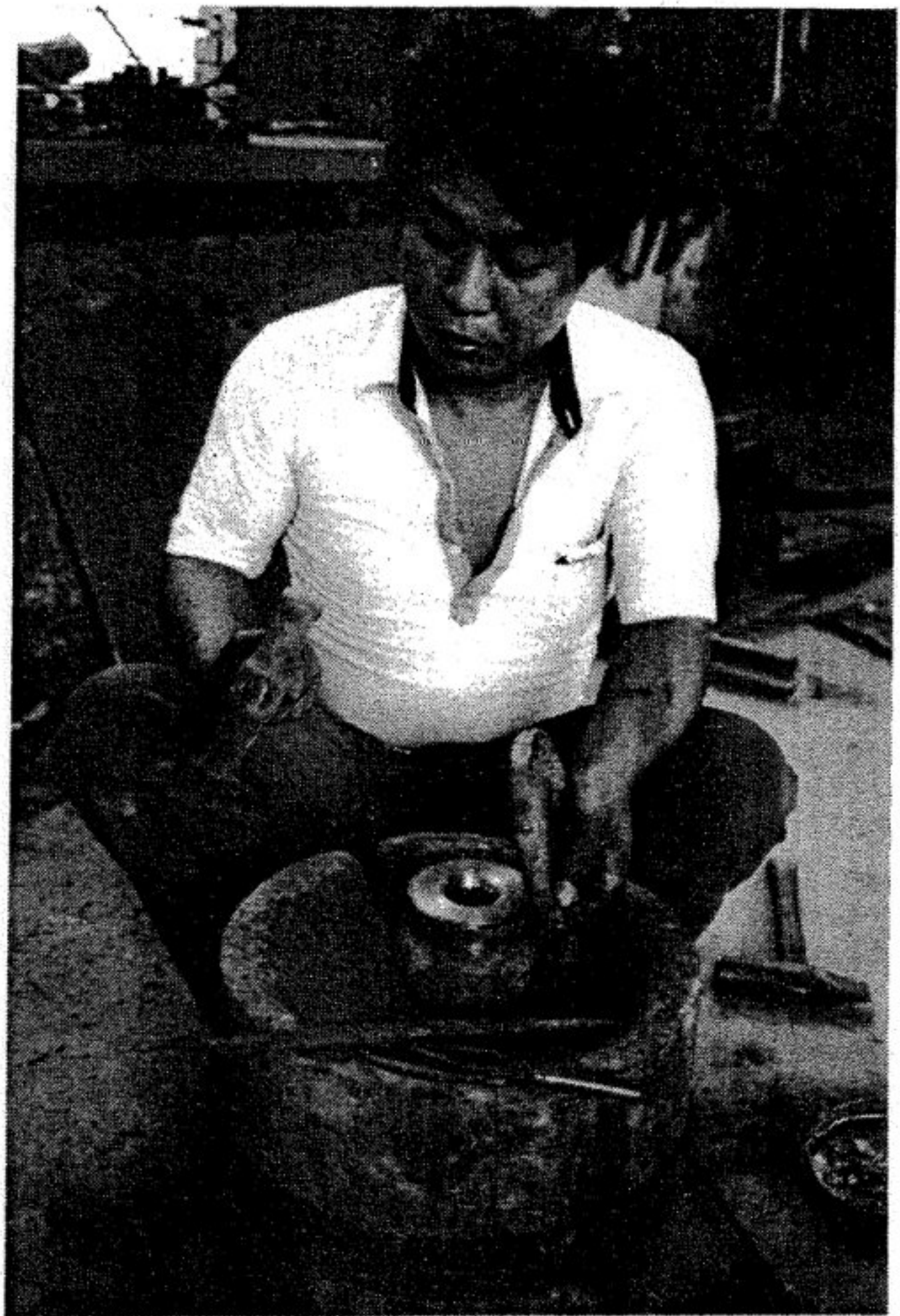
Construction of the larger gongs is somewhat different. There are two striking differences: first, the rim and surface are constructed from a separate pieces of brass; second, the surface can be made by joining two or three pieces of brass if no single large brass plates are available. The process requires two to three people working separately or together at all times. A large gong can be made in one day if necessary, although normally it takes two to three days to finish one.

The long rectangular brass pieces that will become the rim are first pounded, alternately with an electric pounder and hand-held hammer, in order to make them graduated in thickness. When the rim is connected to the gong surface, the thinner side is away from the surface, and thus is free to vibrate. The hammering of the rim takes more time and energy than the hammering of the gong surface. Two of these long rectangular brass pieces, welded together in a circle, are needed to match the circumference of the gong.

While one worker tends to the tedious hammering of the rim, two other men hammer out the knob on the gong surface in a manner similar to that for a small gong. The construction tools are proportionately larger. After shaping the knob, they draw circles on the inner side of the brass and hammer it to achieve a graduated thickness, a process which takes half an hour.

Next, the surface and the rim are welded together, and the inner surface and the rim of the gong are hammered further. Then the sharp edge of the joint is smoothed with an electric shaver. As with the smaller gongs, two holes are drilled in the rim and a rope for hanging tied through them.

There remains one more important step—tuning. This is done by alternately hanging and striking the gong to test the sound, and placing it back on the anvil for further hammering. In the gong-making observed by the author, two previously-made large gongs were brought in for comparison. Again, no specific pitch was sought. The makers were interested in a sound that was deep, solid, and long lasting. After repeated attempts, the pitch was brought down about a semitone, and the overtones were decreased. Then Mr. Lin Wu, his sixth son and one of his grandsons each played a large gong side by side as a gesture of completion of the project (although the gong was polished later) ⁴.



Comparison of Taiwanese and Javanese Gongs

There are many differences in the construction of Taiwanese brass and Javanese bronze gongs, despite the possible link which occurred some fifty years ago. First of all, the Taiwanese gongs are made of factory-produced brass plates, whereas the Javanese gongs are made from melted bronze. Taiwanese gongs are made from two separate pieces (i.e., rim and surface), whereas most Javanese gongs are made in one piece cast in a mold.

The Javanese gong is pounded after it is cast, but the Taiwanese gong, as we have seen, is made completely by hammering. There are visual differences as well. For example, the sunken circle in the Taiwanese gong is narrow and closer to the rim, while the Javanese counterpart is much wider and deeper. The edge of the Taiwanese gong is rounder and the Javanese is sharper. It should be noted, however, that Javanese gongs made of iron do come in two or three parts, i.e. rim, surface, and knob, and their construction process is more similar to that of the Taiwanese gongs.

There are differences in the ways that gongs are treated. The religious and mystical atmosphere which plays such an important role in a Javanese gong shop is completely missing in the Taiwanese shop. In Java, the instruments are held in religious reverence (Jacobson 1975),



but the Chinese do not have this custom. At one point during the testing of pitch, one of the makers stood on top of the gong in order to pound the sunken circle, which horrified this author (who had become accustomed to the Javanese custom of respect for gongs).

Use of the knobbed gong in Taiwan

As mentioned earlier, the knobbed gong is used in only a few Chinese musical genres. In Taiwan, it occurs in two genres: the *Beiguan* theater and the folk and religious parade music.

The *Beiguan* theater (lit., northern winds) is one of four major local theaters in Taiwan. The music is partially derived from Beijing opera and its speech is a kind of localized Mandarin. It first arrived in Taiwan from mainland China sometime during the middle of the Qing Dynasty, in the middle to late 18th century (Wang 1982:3).

Currently, only one professional Beigun Troupe has survived: the Xin Meiyuan Troupe in Taichung City. However, many amateur troupes exist. Performances are held in both theater and concert formats. The *luogu* (gongs and drums) section of Beiguan consists of several small woodblocks, two or three types of drums, one or two pairs of cymbals, a *xianjian* (small gong similar to the *xiaoluo* used in Beijing opera), and a *daluo*, a large knobbed gong. The knobbed gong plays syncopated beats or, more commonly, the even beats at regular intervals.

In folk and religious parade music, the knobbed gong is indispensable. (The huge 70-inch gong mentioned earlier was made for the opening ceremony and the following parade of the Mother Goddess Temple in Beigan City, held on May 8th, 1985.) In a funeral band, the knobbed gong is used with drums, cymbals, and several *suona* oboes. In performance, the knobbed gong is always struck on the even beats at regular intervals. One can hear and see this type of

ensemble in the backs of pickup trucks driving throughout the streets almost every day.

Although there are differences in construction and function of gongs in various areas the large knobbed gong, which is characteristic of Southeast Asia, is still an important instrument in Taiwan. ▀

Notes

1. Personal communication. This conclusion is subject to scientific testing.

2. Wang Wei-cheng's article is a result of the research trips she and several other friends made with me in 1985 and 1986.

3. I am in debt to Dr. Thomas Rossing of Northern Illinois University and Dr. Robert Frank of Augustana College for testing the alloy from a sample gong on an electron microscope. Dr. Rossing was of great assistance in describing the technical aspects of gong making.

4. The two large gongs made for me were made in three separate days coinciding with my visits so that I could videotape the process. I bought several smaller gongs and left the next larger gong there for a future customer. The largest one—28 inches in diameter, with a rim width of 7.3 inches, and a weight of 30 kilograms—was purchased by the National Institute of the Arts in Taipei. It was used as the large gong in the newly acquired Balinese gamelan *angklung*, for which I was the director during the beginning stage.

References

- Hornbostel, Erich and Curt Sachs
1961 "Classification of Musical Instruments." (trans. by Anthony Baines and Klaus Wachsmann.) *Galpin Society Journal*, Vol. 14:1-29.
- Jacobson, Edward and J. H. van Hasselt
1975 "The Manufacture of Gongs in Semarang." (trans. with an introduction by Andrew Toth.) *Indonesia*, Vol. 19:127-152.
- Montagu, Jeremy
1965 "What is a Gong?" *Man*, Vol. 65:18-21.
- Wang, Cheng-i
1982 *The Beiguan of Taiwan..* [Chinese] Taipei: Baiké Wenhua.
- Wang, Wai-cheng
1986 "Gong: An Interview of the Lin Wu Large Gong at Yilan." [Chinese] *Minsu Quui*, No. 40:100-116.