COMMUNITY OF PRACTICE IN THE BRASS GONG FOUNDRIES OF TAMPAWADY, MANDALAY

Lei Shwe Sin Myint

Understanding Myanmar's Development
RESEARCH REPORT No. 15

RCSD IDRC | CRDI Canada

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Copy Editor: Colin Roth
Cover Photo: Jeff Moynihan
Design and Layout: Jeff Moynihan

Published in December 2019 by:
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Foreword

The Understanding Myanmar's Development (UMD) Fellowship program, supported by the International Development and Research Centre (IDRC), Canada, is designed to the enhance knowledge of Myanmar's development processes, strengthen the capacity of Burmese researchers, and encourage them to actively engage the study of development policy and practice. The fellowship seeks to promote sustainable academic exchange and dialogue among researchers from Myanmar, Thailand, and other GMS countries. Under this program, 30 fellowships have been awarded to midcareer researchers in their respective areas of social and economic transformation, agricultural, environment and climate change, health and health care systems, and social media and innovations.

The transformations happening throughout Myanmar society are visible even in the seemingly peripheral community of brass-gong artisans of the Tampawady quarter of Mandalay city. Brass gongs have long played a role in the ritual and ceremonial life of Myanmar's millions of Buddhists. Brass gong artisans have enjoyed royal patronage for centuries, and from the 19th century a brass-gong artisan community has existed in Tampawady. Dr. Lei Shwe Sin Myint has engaged the craftsmen of this community in her research which explores not just the ritual use of brass gongs, but also the unique society that has developed among brass-gong workers.

Working over hot furnaces, brass gong craftsmen have developed unique daily and seasonal schedules—working through the coolest hours of night and into early morning, and avoiding work entirely during the hottest summer months. The craftsmen work under

grueling physical conditions but also develop an artistic sensibility to appreciate sound and tone, key to their craft. Their close quarters, working conditions, required skillset and unusual isolation from day-time society has allowed them to develop a unique community with elements of cottage industry, blue collar labor, religious community and artistic practice, rolled into one. Dr. Lei Shwe Sin Myint takes a close look at this community of practice that has developed among the craftsmen under the guidance of their masters.

However, the outward expansion of rapidly urbanizing Mandalay city, along with new technological innovations, threatens to drastically change the methods of brass gong production and with it, the community that has grown up in the Tampawady quarter. Dr. Lei Shwe Sin Myint has talked with craftsmen and foundry owners to see how their livelihoods and art will be impacted, and how the character of urban Mandalay will change as well.

I want to take this opportunity to acknowledge the intellectual support given by Dr. Malee Sitthikriangkrai which enormously helped Dr. Lei Shwe Sin in collecting detailed data from the brass gong craftsmen, and thank the latter for her strong commitment in field data collection and writing this interesting research report.

Chayan Vaddhanaphuti, PhD
Director, RCSDS

Acknowledgements

First, I would like to express my deepest gratitude to Dr. Chayan Vaddhanaphuti, Director of the Regional Center for Social Science and Sustainable Development, Chiang Mai University for his enthusiasm about this study through his stimulating comments and suggestions.

I would like to express my great appreciation to Dr. Malee Sitthikriengkrai, Center for Ethnic Studies and Development, Chiang Mai University for her diligence in critically assessing this study and making very useful suggestions; and to Dr. Thida Htwe Win, Professor and Head, Department of Anthropology, University of Mandalay, for her invaluable suggestions and patient scrutinizing of my research. Special thanks to the University of Mandalay and Chiang Mai University for granting me a scholarship and research funds without which this study would have been impossible.

I also would like to thank all the owners, craftsmen of Industrial Zone (2), Pyi-Gyi-Dagon Township and all craftsmen and owners in Tampawady Quarter, Mandalay Region who answered patiently my questions for this research.

Glossary

kyat	Burmese currency. 1 USD = about 1,500 kyat
nat	spirits worshipped in Myanmar in conjunction with Buddhism; spirits of trees, water, etc., or human beings who met violent deaths
tin	Burmese measure of volume = 40.9148 litres
Triple gems	The Three Jewels of Buddhism are: The Buddha, the fully enlightened one; the Dhamma, the teachings expounded by the Buddha; and the Sangha, the monastic order of Buddhism that practice the Dharmas.
uposatha	Uposatha days are times of renewed dedication to Dhamma practice, observed by lay followers and monastics on several days each month.

Abstract

This paper deals with brass gong making and its community of practice in the Tampawady quarter of Mandalay region in Myanmar. The specific objectives are to examine the history of gong production, to elicit the current situation of gong production in the community, to analyze the skill-learning process for gong craftsmen, and to explore the relationships between owners and craftsmen. Research was conducted from 2016 to 2017. Participant observation and qualitative method were applied for data collection.

Community of practice in the manufacture of brass gongs manifests itself as a learning process whereby young craftsmen acquire, through practice, different skill levels ranging up to the level of master. It includes collaborative learning with good contact and empathy among the craftsmen and masters.

The recent introduction of a pneumatic hammer in one of the workshops has resulted in a significant manpower saving by obviating the need for manual hammering, formerly a skill needing years of training followed by years of hard physical effort. A side effect of this break with tradition has been to facilitate recruitment to the craft.

Keywords: community of practice, brass gong, Mandalay, Tampawady, Buddhism

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INTRODUCTION

The term "community of practice" is of relatively recent coinage, even though the phenomenon it refers to is age-old. Communities of practice are formed by people who engage in a process of collective learning in a shared domain of human endeavor: a tribe learning to survive, a band of artists seeking new forms of expression, a group of engineers working on similar problems, a clique of pupils defining their identity in the school, a network of surgeons exploring novel techniques, a gathering of first-time managers helping each other cope. In a nutshell: communities of practice are groups of people who share a concern or a passion for something they do, and learn how to do it better as they interact regularly (Wenger, 2011). And we can add a group of artisans in Myanmar making brass gongs.

This research will focus on the Myanmar traditional handicraft of brass gong manufacture, in Tampawady, Mandalay.

A brass gong foundry employs between 3 and 7 craftsmen. Their work relies on knowledge and good mutual relations: they have to learn their craft and work harmoniously together. "The craftsmen have to learn the system and on the other hand also to practice it; that is the way to maintain the development of the handicraft for the long term. Performing within a certain community, collaborating, inter-connecting with each other and learning together, can be creative, and lead to greater achievements for the art. The practice of working as learning through practice is a start to developing a community".

For centuries making brass gongs was all manual work. But recently the owner of one of the three foundries making large gongs has invested in a pneumatic hammer from China (see Figure 1). This replaces three hammer-holders, cutting the workforce from seven to four. His new foundry is out of town in an industrial zone. In 2008 the government of the time – the SPDC[1] – had ordered all foundries to move there, but none of them did as it was too difficult for workers to get there.

Other foundries are using furnaces with electrically powered air-pressure-motors (see Figure 1) instead of manually operated air-pumps. The furnace worker still has to watch and control the temperature, but now does it with the touch of a switch.

This research will study the attitude of handicraftsmen to their craft, to the introduction of technology, to moving to the industrial zone, and to how the owners provide for their craftsmen within the brass gong casting community and how craftsmen solve their family's livelihood with their income from the foundries. The research will also look into which parts of the process have been industrialized, at moving to the industrial zone, and at how these changes affect the way the craftsmen interact with each other, with the master, and with their attitudes to their craft.

Figure 1: Air-pressure furnace and pneumatic hammer source: author

1. The State Peace and Development Council, the former military government, which lasted from 1997-2011, replacing the State Law and Order Restoration Council (SLORC), which ran from 1988-1997.

Figure 2: Four craftsmen placing the brass-plate Source: Jeff Moynihan

Research aim and objectives

The main purpose of this project is to identify the tradition of brass gong culture and practice in community.

The objectives are:

- to examine the history of gong production
- to elicit the current situation of gong production in their community
- to analyze the learning process of gong craftsmanship in developing their skill
- to examine the relationships between owner and craftsmen, and outsiders

Research questions

- How can the brass gong culture survive?
- What is the community of practice of gong craftsmen?
- Who buys gongs? Who uses the gongs?
- What are the social relationships between owner and craftsmen, older and younger generation of craftsmen?

Research methodology

The main methodology will be an applied qualitative approach. Data was collected by using available information. Direct observation (DO), in-depth interviews (IDI), key-informant interviews (KII) and focus group discussions (FGD) were used.

1. Direct observation (DO) was undertaken in brass gong foundries in Tampawady, where production processes were observed.
2. In-depth interviews (IDI) were constructed to capture the experience of participants in the process - 15 persons in all. The objective was to understand the attitudes of the foundry owner

to the craftsmen and vice versa, and the craftsmen's interactions with each other.

3. Key informants were chosen according to their knowledge of brass gong foundries and the learning processes there. They included 2 brass gong traders, and 5 people knowledgeable about the functional concept of brass gong culture in religious activities.

4. Focus group discussion (FGD) was used to confirm the data supplied by the individuals and to interpret the behavior, facial expressions, and speech in order to better understand their feelings and values. There were 2 FGDs conducted with craftsmen from two foundries, with 6 persons in each group.

Study site

The field area is a foundry, using manual labor, in Tampawady, Chanmyathazi Township[2], Mandalay Region, Upper Myanmar – the only place in Myanmar where brass gong foundries exist. The study was conducted between 2016 and 2017.

2. See Appendix 2

Conceptual framework

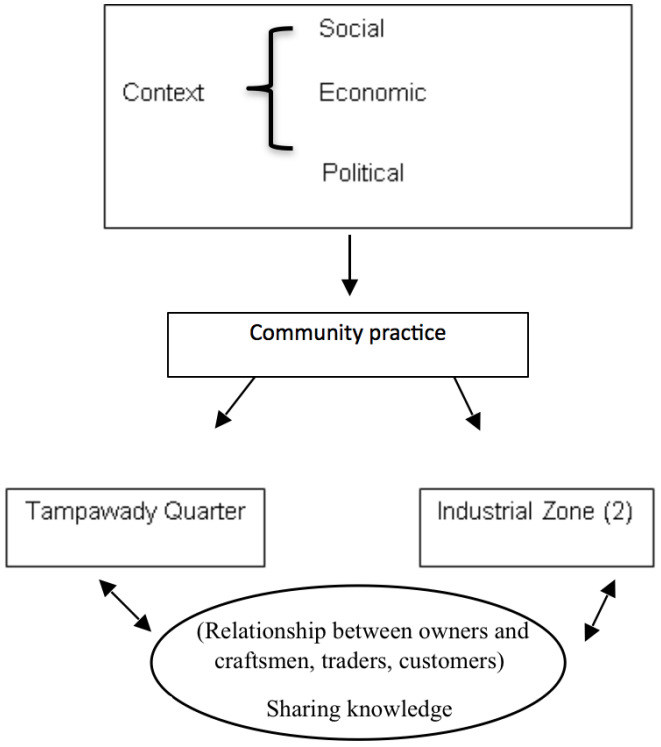

Chart 1: Conceptual Framework: Community Practice in a Brass Gong Foundry

2

BRASS GONGS IN MYANMAR: HISTORY AND USAGE IN BUDDHISM AND ANIMISM

Bronze work is one of Myanmar's ten traditional handicrafts. According to literature, brass gong handicraft started there some 2000 years ago. The tradition of bronze casting in Myanmar can certainly be traced back to the Pyu era. Bronze casting materials were discovered by archaeologists excavating their ancient city of Srikistra[3].

It has operated continuously since the time of the ancient Myanmar Kings[4]. In the 19th century King Mindon (1808-1878) ordered all the foundries to move to Tampawady, Mandalay, which is now the only place in Myanmar where brass gongs are made.

King Mindon designated Mandalay as a royal city in 1859, and gathered many artisans and craftsmen to work on the construction of the Mandalay palace. In addition to brass workers, there were gold-leaf makers, umbrella makers, fabric weavers, stone sculptors, and many more. There were up to 33 brass craftsmen who lived in the palace and worked for the king. They were paid with 12728.02 kg (610 tin: in Myanmar) of rice monthly (Htun Shein, 1979). After the palace was completed in 1862, the king moved these

3. The Pyu are the earliest inhabitants of Burma of whom records exist. Srikistra, a Pyu city state, was founded between the 5th and 7th centuries CE.
4. Myanmar kings are known to date from the Pagan dynasty (9th century CE).

non-royal workers out of the palace grounds to various quarters of the city, and the brass workers were moved to Tampawady, about 6 km away.

Tampawady was named after the industries which are prevalent in the area; the Pali word "tampa" means "brass", and "wady" means "region", so the name literally means "the region for brass casting."

In 1972-73 there were thirty brass gong foundries in Tampawady (Htun-Shein, 1979). But by 2015 there were only 9, with six owners: three for large brass gongs, two for medium size and four for small ones.

Classification of brass gongs

The brass gong is a musical instrument. When it is struck with a stick padded with a piece of cloth at one end, it resounds, with a sound like hmaung---hmaung (Dictionary of Myanmar Performing and Plastic Arts, 2001). Brass gongs are used not only as musical instruments but also on religious and social occasions.

A large gong is defined as one weighing over 4.123 kg., and is usually 43.18 cm in diameter. The largest gong that has ever been made weighs 26.39 kg and is 91.44 cm in diameter.

Medium-sized gongs usually weigh between 0.577 kg and 3.298 kg. The smallest medium- sized gongs are 33.02 cm in diameter and the largest 40.64 cm.

Small-sized gongs usually weigh from 0.082 kg to 0.495 kg. The smallest are 15.24 cm in diameter and the biggest 27.94 cm.

Background of craftsmen

This is not a handicraft that has been been handed down generation by generation like some others. Few sons continue their parents' tradition. Nor is it a handicraft that can be learnt easily—10 to 15 years' experience is necessary in order to become a foundry master, and the work is hard. Although children rarely take on this daunting inheritance, they do not have to be the ones who carry

on the tradition. Anyone who wishes to learn the handicraft can do so. The craftsmen usually let outsiders into their family if they are keen to learn. But not many people seem to want to do so as it involves so much hard work. In fact, most of the craftsmen in brass gong production are there because they lack the skills for other jobs. But the recruitment situation is improving with mechanization.

History and significance of the brass gong in Myanmar culture and ritual

While the art of bronze work flourished in the West to produce artillery and ornaments, in the East it developed as a religious art (Natshin, 1976).

In Myanmar bronze work is divided into *kyaye-thun* - melting brass and pouring it into a mold; and *kyaye-khat* - hammering heated brass or bronze blocks to a required form (Chan, 2005). Bronze blocks are cast in molds and then hammered into musical instruments - round brass gongs, triangular brass gongs (kyeezee), bells, miniature objects such as jingle bells, timing bells, small bells, and culinary articles such as spoons, pots and pans.

Brass gongs were used by the former kings in administration and in royal musical concerts. The headmen of villages also used brass gongs for some social occasions. There are various names given to brass gongs used on different occasions and in different activities; the time-gong, the warning-gong, the auspicious golden gong, the silver gong, the victory gong and the flat gong. During the reign of Myanmar's monarchs, golden and silver gongs were played at royal ceremonies. Brass gongs were used as time-telling instruments, and to herald public announcements. Gold, silver, and brass gongs were used as royal musical instruments. Gongs also played an important role in administration. In villages, when the chief wanted to gather the people together, he banged the gong. This custom still exists in some regions in Myanmar.

Practices of brass gong culture in Buddhist belief and practice

Brass gongs are widely used for religious and social purposes. At some Buddhist temples, brass gongs are used when monks go out to receive alms - when people give donations, the sound of the gongs is a symbol of wholesome deeds. Alongside Buddhism, some people practice traditional spirit-worship (animism). In some spirit-worship acts, brass gongs are played in honor of the deities. Brass gongs have played an important role in Myanmar society since the time of the Myanmar kings, and are still a symbol of Myanmar culture.

Brass gongs are found at the top of Buddhist pagodas. Buddhists take refuge in the Triple Gems – the Buddha, the Dhamma, and the Sanghā (the monkhood). To represent the Buddha, they build pagodas and temples as symbols of their devotion. Umbrellas are fixed at the pinnacles of pagodas.

The umbrellas are of five kinds, the most common type being the one shaped like the crested headdress forming part of the ceremonial regalia of a monarch. An umbrella with this shape has nine tiers. The first tier is usually decorated with various objects, including nine gongs or bowls, with flowers in between (see Figure 3).

Figure 3: Bowls or brass gongs, and pagoda umbrellas source: author

Venerable Kavisāra from Shwe Thein Daw Monastery in Ywa Missa Village, Ye Oo Township, Sagaing, explained the reason for fixing bowls on the umbrella instead of gongs (see Figure 3). He said,

> The nine brass gongs fixed at the pagoda are known by people as bowls. However, what is important is the intention of the donors who donate the umbrella. The number nine represents the nine attributes of the Buddha. Although bowls are used in the donations, the donors take them to be gongs. It is because gongs can produce a sweet sound which can announce the donation to the people around, and especially, they wish that their donation should be heard by the beings above.

A large (3,556 kg) gong was donated at the Mahamyatmuni Pagoda in Chanmyathasi Township, Mandalay region. It was donated by U Nyaing and Daw Shi-Shi from Mandalay in 1971 (see Figure 4). This gong is considered to be the gong of conquest. Since this brass gong was made using the traditional brass gong casting technique, it cannot produce a sound. People pay respect at the brass gong, folding their palms on their foreheads, and rubbing the brass gong with their hands (see Figure 4).

A woman, thirty years old, from Pyigyidagon Township[5], Mandalay, made good wishes for her brother at the gong. Her brother had applied for a job at a company. She made the wish rubbing on the face of the gong and said, "May my brother be successful." She said it twenty-seven times as her brother was twenty-seven years old.

A twenty-year-old woman from Mahaaungmyae Township, Mandalay, made a wish for her brother who was about to take the matriculation examination. She rubbed the gong nine times saying, "May my brother pass the exam".

5. See Appendix 2

Figure 4: Big brass gong; people paying respect with a big gong at Mahamyatmuni pagoda source: author

People believe that making wishes while rubbing the brass gong will make their dreams come true. They believe that the brass gong can bring them good luck. Therefore, it can be seen that brass gongs, whether they produce sound or not, are considered something sacred in the practice of Myanmar Buddhists. This kind of practice is a unique part of the culture in Myanmar. Brass gongs are religious objects for Myanmar Buddhists.

Brass gongs can be seen hanging in some places at temples (see Figure 5). Buddhists who visit the temples strike the gongs after they have said their prayers. In striking the brass gongs, they share their merit to all beings including other people who may hear the sound, or unseen beings. There are teams who, on religious occasions, chant the discourses taught by the Buddha. They usually chant discourses such as the wheel of Dharma, the first sermon given by the Lord Buddha on attainment of Buddhahood, and Pali verses comprising the eleven prescribed suttas (see Figure 5). After chanting, they strike the gong and the drum three times while sharing their merit with other beings (see Figure 6).

Figure 5: Hanging gong at pagoda; Pali verse of the eleven prescribed *sutta* source: author

Figure 6: Brass gong and drum

Figure 7: Striking the gong before alms giving source: author

Some meditation centers still use brass gongs. Brass gongs and brass bells are played three times before meditation sessions in order to gather the practicants together, and again after the sessions as a symbol of sharing merit; another tradition that helps maintain the handicraft of casting brass gongs.

Most Buddhist monasteries in Myanmar have brass gongs that are struck before the monks go out to accept offerings of food (see Figure 7). Before dawn, a team of people go around the area carrying a big brass gong. A monastic school pupil shouts "Please get up to prepare offerings for monks, *Bavanto* ... oh ... good people." Another person in the team then strikes the brass gong. At the sound of the brass gong, people get up and prepare breakfast for the monks who come to their houses for alms round about dawn - the tradition known as Bavanto (*ba-wun-to* in Burmese). It used to be common in most villages and towns for the monks to be accompanied by a music group. In some villages and towns this tradition can still be seen. Previously, the group would use short drums, a musical instrument consisting of a set of graduated series of gongs (*maun:-saing* in Burmese), big gongs and oboes. People no longer use all these musical instruments, but they still use big brass gongs.

The sound of a brass gong can be heard for some distance. The sound is associated with religious practices. It can be said that as

gongs have been used in religious practices they have become a symbol of the religion.

In some villages and towns, during the rainy retreats which last for the three rainy months - the period of the Buddhist lent - each month every eve of each of the four days of observance (*Uposatha*) is filled with the sound of brass gongs when groups of people go around to collect donations. The donations are to support the monasteries and Dhamma organizations in the area. Monks walk in line preceded by young boys carrying a brass gong on their shoulders and striking it from time to time (see Figure 7). The sound of brass gongs can arouse devotion in the minds of people. Brass gongs have played an important role as a bridge between the religion and Myanmar traditional practices.

Figure 8: Community for donations

Figure 9: Donations with music (*byaw*) source: author

When people volunteer to collect donations in their community

hall in towns and villages (see Figure 8), they usually play musical instruments (see Figures 9-11). The sound of the *byaw* (see Figure 10) is said to be similar to the sound of the fruits from Eugenia trees falling in the water – a sound like *pjou-pjou-pjoun*. According to the history of Myanmar, this instrument was invented during the reign of King Alonsithu (1113-1167). In a *si-byaw* team, the musical instruments used to include two zither-like stringed instruments, one big drum, a set of cymbals, one to five big saxophones, three to eleven small saxophones, and seven to fifteen trumpet-shaped wind instruments (*khaja*). Since the end of the Myanmar monarchical period, *byaw* music has been heard only at ordination and donation ceremonies.

Figure 10: *Byaw* (drum played with stick); hanging gong at Shwe Thein Daw pagoda source: author

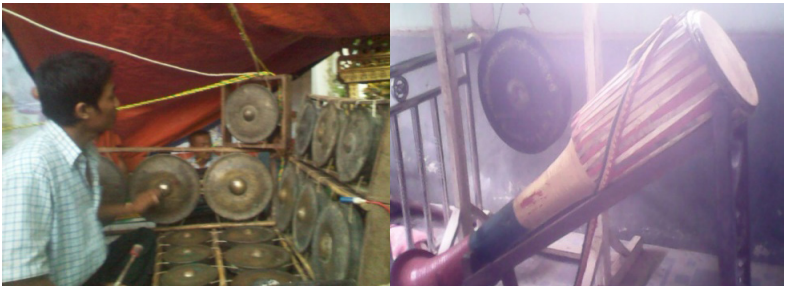

Figure 11: Set of graduated gongs; a long drum (*byaw*) source: author

Some people make wishes at certain pagodas known as "the wish that is made at such pagodas will be fulfilled". They wish for success in business or other aspects of their lives. There are some pagodas that are considered to be special in this respect. People take some meditation retreats or donations at those pagodas,

believing that their wishes will be fulfilled by the power of their wholesome deeds and the power of the pagodas. Drums and brass gongs called "the drums and brass gongs that can bring success in life" can be seen at those pagodas. One such pagoda, for instance, is located in Thintaunggyi Village, Kyaukse Township, Mandalay. It was a donation from King Anawratha (1014-1078, founder of the Pagan Empire). The pagoda area is consecrated as an ordination place (*sïmā*). The pagoda is known as "Su Taung Pyae Shwe Thein (*sïmā*)-Daw" in Myanmar. People make offerings with sets of bananas and coconuts in bowls. They believe that this kind of offering can result in their wishes being granted. A man who works at the pagoda described how people make wishes:

> They make offerings at the temple and say, "May my business be successful? May I have good luck in my business? If my wishes are fulfilled, within a month (or some people say "two months or a year"), I will come back here again and make another offering."

People prepare bowls of coconuts and bananas, donate them to the pagodas, play brass gongs three times and say *sādhu* three times. People believe that after the sound of the brass gong after their sacrificial offerings.

Gongs used in spirit-worship practices

Spirits (*nat*[6] in Myanmar) are beings whom some people worship with the belief that they can give the worshippers rewards and protection. Spirit-worship is a practice common around the world, with a long history. Some Myanmar Buddhists seem to respect nats almost as much as they respect the triple gems (Myaing, 1993). In many discourses taught by the Buddha, the Buddha approved traditional spirit-worship, saying that one should not neglect worshipping or honoring traditional nats (Myaing, 1993). People believe that nats have greater power than

6. The word *nat* derives from the Pāḷi word *nātha* meaning "the object of taking refuge".

human beings (Myanmar Encyclopedia, 1962).

People of Myanmar accept spirit-worship as a practice that can produce good results in their lives. People talk about five kinds of honoring. People who believe in traditional *nat* say: "there are five kinds of honoring or making offerings: (1) making offerings to nats, (2) making offerings to guests, (3) making offerings to one's relatives, (4) making offerings in the names of late relatives and sharing the merit with them, and (5) giving taxes to the government."

There are various nats in Myanmar that people worship. The thirty-seven inner nats (*atwin-nat*) and thirty-seven outer nats[7] (*apyin-nat*) are the most common. Nat festivals are seen throughout the country. Most popular is the one held every year in Taung Pyone Village, Mattaya Township, Mandalay region, from the eighth day of the waxing moon in August to the full moon day of the same month. The festival includes events such as bathing the nats, hunting rabbits[8], an offering festival, and offering alms to the monks. It is the biggest nat festival in Myanmar. Spirit-mediums who know the traditions and sacrificial methods lead the festivals. They are led by a chief who is called "Queen", and the other members act as royal members - the silver brass gong player, the gold brass gong player, and the inner and outer brass gong carriers. A message concerned with marching to the battlefront is read, according to tradition, by a spirit-medium. As soon as the reading is finished, a silver brass gong is struck, followed by the brass gong of conquest (Figure 12). The musical team at the shrine then begins to play the special music played for nats at the time of their propitiation. With this music, the inner and outer brass gong carriers and the "Queen" lead people to go around the shrine seven times.

Nowadays festivals in Taung Pyone do not have as many participants as before. But "they try to have as many as possible", according to

7. The inner nats appear on the inside of the Shwezigon Pagoda near Bagan and are a mixture of Buddhist nats and Hindu deities. The outer nats appear in another shrine nearby and are ordinary spirits of deceased humans.

8. See *Burmese Supernaturalism* by Melford E Spiro (1967), chapter 7, for explanation.

the spirit-mediums. They can no longer afford the silver brass gong carriers, gold brass gong carriers, and inner and outer brass gong carriers; they can only afford ordinary brass gong carriers.

The brass gong is kept in the shrine of the two Taung Pyone nats[9]. People who come to the festival offer the two Taung Pyone nats money or flowers according to what they have promised. As this is the biggest and the most crowded of the nat festivals in Myanmar, hundreds of thousands of people come there yearly. Not everyone can go into the shrine since there are too many of them. The people who come to the festival are basically of two kinds – those who follow the tradition of their families' elders, and those who come to make an offering with the hope of success in their business or to keep their promises to the nats. Only those who can manage to go into the shrine or those who have special permission can see the faces of the two nats. The spirit-mediums announce that it is not possible to sound the gong for everyone who comes to the festival. That would break their arms! So, they bang the gong on the last day of the festival, making good wishes for everyone who comes. Many people push one another happily around the shrine; they try to strike the gong with the flowers in their hands, reaching the gong through the iron bars (see Figure 12). Brass gong culture is part of traditional spirit-worship (see Figures 13).

9. For explanation of legend, see Shwe Mann Maung. "The Taung Byone Nat Festival". *Perspective (August 1997)*

Figure 12: Hanging gong in *nat* shrine; striking the gong with flowers

source: author

Figure 13: After Taung-pyone-nat festival; after offering, striking the gong

source: author

The second biggest *nat* festival is that of *popa*-mother (*popa* is a mountain) (*pou-pa:-medo-pwe* in Burmese). This festival is also known as the Ratanagu pagoda festival. The festival takes place yearly at an area near four villages in the west of Amarapura Township in Mandalay. The festival used to be a pagoda festival, but has been a *nat* festival since 1821 during the reign of King

Bagyidaw, when Queen Nanmadaw and the Salintown chief organized a nat festival alongside the pagoda festival. This festival takes place straight after the Taung Pyone festival, that is to say from the eighth to the fourteenth day of the waning moon of August. People who go to the Taung Pyone festival also go to the Ratanagu festival. The Ratanagu festival is the festival of the mother of the two Taung Pyone nats. Thus, people come to pay respects to the mother after they have paid respects to the sons. The festival has shrines for all three *nat*. Each *nat* shrine has a celebration where people try to outdo the celebrations at the other shrines. Music teams try to win the attention of the audience. There are many spirit-mediums and people dancing like spirit-mediums. There are believers who gather at shrines to hear their futures predicted by the nats through spirit-mediums. Some of the shrines have brass gongs. The spirit-mediums make offerings on behalf of the believers and bang the brass gongs each time (see Figure 13).

Mandalay Bo Bo Gyi[10] is a famous *nat* well-known in Mandalay. His shrine is frequently visited by Mandalay people. It is located at the foot of Mandalay Hill. Mandalay Bo Bo Gyi is a local *nat*. There is no fixed date for a festival. However, people from Mandalay visit the site occasionally when they have some important business, buy a vehicle or have a job interview. They make a wish at the shrine and make offerings to Mandalay Bo Bo Gyi. People go to Bo Bo Gyi's shrine with their new vehicles, and make offerings so that Bo Bo Gyi will keep them free of road accidents. Some business people make offerings wishing for good business. Some wish for stable jobs or promotion.

A business person said:

> Car-owners usually wish to have good businesses. They make promises at the shrine that they would make certain offerings to Bo Bo Gyi if the business meets their expectation. If they are successful, they pay a visit to the shrine and make the offerings they

10. Meaning "great grandfather", traditionally refers to the name of the guardian spirit unique to each Burmese Buddhist temple or pagoda.

> promised. When they make a promise, they usually strike the gong three times.

Some government officer workers said:

> We make offerings and a wish at the shrine when we want certain things in our work. Some might want to prolong their rank or get promoted, or some want a transfer. If they have problems at work, they come to Bo Bo and ask for blessings. They also make promises that they will come to make offerings if their wishes are granted. They usually strike the gong three times after making their wishes.

People believe that their wishes will be fulfilled after making offerings at Bo Bo Gyi's shrine. One can witness people making wishes and promises and striking the gong (see Figure 14).

In Shwe Sar Yan village, Pathein Gyi Township, Mandalay, there is a pagoda named after the village. It was built with a donation from Saw Mon Hla, a Shan queen, during the time of King Anawrahta. Successive kings renovated the pagoda many times. The pagoda festival takes place in March every year. The pagoda was previously known by most people as Shwe Sar Yan, but later it was more commonly known as the Saw Mon Hla pagoda, after the donor. Since the pagoda donation and the wish of Saw Mon Hla have a well-known connection[11], people considered it to be a place where they can also make wishes that will come true. Later, people made an image of Saw Mon Hla that is housed in a shrine. It has become a spirit-shrine where people come to pay respects to her. Although the festival is in March, the pagoda is visited by many people every day throughout the year. Traditional spirit-worship is only meant for secular purposes, and it is said that those who come to Saw Mon Hla shrine come to have their secular wishes granted. A spirit-medium who attends the shrine has a formula for expressing a wish which is basically as follows:

11. See https://en.wikipedia.org/wiki/Saw_Mon_Hla for an account of the legend.

> The woman, (for example, a Wednesday-born woman), has given a donation in the name of her Sister Saw Mon Hla. Please protect her and grant her good luck.

The spirit-medium strikes the brass gong on which the name Saw-mon-hla was inscribed as its donor (see Figure 14). The traditional belief is that the offering having been completed the wish will be fulfilled. Every day, the Saw Mon Hla shrine is crowded with spirit-mediums and people performing a nat-dance. A musical team plays songs composed about Saw Mon Hla or related to her.

Figure 14: Playing gong at the Bo-Bo-Gyi shrine; striking the Saw Mon Hla gong source: author

Taboos of brass gong foundries

Foundries have a guardian spirit - Pabe Maung Tint Tel[12] - to

12. Pabe Maung Tint Tel is one of the 37 inner *nat* (see footnote 3). The Tagaung King was concerned lest Maung Tint Tel, who was extremely strong, usurp the throne. The king captured him, but he escaped. The King later flattered him with the offer of a governorship. Maung Tint Tel fell for the trick and came back. The King tried to kill him using knives and other weapons. When that didn't work, he had him tied to a champak tree and set fire to it. Maung Tint Tel died and became a *nat*.

which gong craftsmen make propitiatory offerings. They also follow certain rules. In the foundry they avoid conversations about snakes or dragons, believing that the gong being made will be broken if they talk about such things. Likewise, they avoid saying "*zaw*"; if one of the craftsmen has a name with *zaw* in it, he has to take a different one: if his name is "Pho Zaw," he may be called "Pho Chaw". They avoid talking about the guardian spirit lest it might be disrespectful towards the spirit and make him angry, in which case there will be disturbances at work. The researcher discovered this rule when she inadvertently asked the craftsmen about Pabe Maung Tint Tel while observing the work; she was led out of the foundry and they answered the question outside.

Figure 15: Offering to the *nat* (Pabe Maung Tint Tel) source: author

3

METHOD OF BRASS GONG PRODUCTION

The craftsmen

The brass gong manufacturing process is led by the master – the ”master of tongs”, so-called because he has to manoeuvre the red-hot brass with his various sets of tongs while it goes through the various procedures. He is supported by three hammer-holders, whose job is to hammer the brass into shape; a furnace worker who controls the furnace and watches for signs from the master to lower or raise the heat; a string-puller who rotates the brass block to put it into the position the master wants; and sometimes a shield holder, to protect the master from the heat.

A full team of craftsmen must be present when work is in progress. Each and every craftsman has a vital part to play. If one of them is absent for a day, work has to stop unless a substitute can be found for the missing one. The substitute has to be another skilled craftsman, and often there is no-one available.

Fire is used in the process and the work requires high temperatures. For this reason, craftsmen usually cast especially big gongs between midnight and dawn. In winter, they begin their work at four o’clock in the morning and in summer at one o’clock in the morning.

The material and process of making gongs

Size of gongs

Brass gongs are cast basically in three sizes - large, medium and small (Oo, 2005). Large gongs usually weigh over 4.123 kg. The methods used in brass gong casting are the same for all sizes; only the numbers of craftsmen are different. The process described here is for a large gong.

A gong weighing 4.123kg would begin as a solid brass block 22.86cm thick, which would be hammered down to a brass plate 6.35cm thick. For dimensions of other large gongs, see Appendix 3.

The process

There are five steps in the process:

1. Melting the brass

2. Casting the brass, to get a brass block.

3. Shaping the brass block into a plate and then into a gong

4. Shaping the "Knob"

5. Tuning up the gong

Materials

The materials used in brass gong manufacture are brass and tin (See Figure 16). The foundries produce gongs only when they receive orders from brassware traders, who receive the orders from prospective purchasers. The traders (usually shopkeepers) have to acquire the metal needed to complete the order, and place the order at the foundry together with the metal. During the time of the State Law and Order Restoration Council, the government sold brass and tin to the factories in order to support Myanmar traditional arts and handicrafts. But now buying this material is not easy, and the foundries often face shortages. Perhaps the foundries need to find the material themselves, although at present they lack contacts with suppliers.

Figure 16: Brass and pure tin source: author

Essential tools

The tools that are essential in the gong-casting foundries are as follows:

Furnace (See Figure 17)

Hammers (iron and wooden) (See Figure 18)

Anvils (See Figures 19)

Tongs (left hand and right hand) (See Figure 20)

Some tools are made by the craftsmen themselves. They can get iron hammers and tongs in the required shapes and sizes from the blacksmiths. These are specialist tools for use in the gong foundries. The most important tool in the foundry is the air pressure furnace, which has to produce intense heat.

Figure 17: Furnace with pots; air pressure furnace source: author

Figure 18: Iron back hammer and wooden hammers source: author

Figure 19: Iron anvil source: author

Figures 20: Tongs source: author

Step one: melting the brass

This must be done one or more days before the next steps. It involves mixing brass with tin to produce the required basic material, a brass and tin mixture sufficiently hard to make a gong with a unique sound. The materials have to be pure. Otherwise the gong might break while it is being made, and even if it survives it will not produce a melodious sound. A good mixture means a good quality, long lasting, gong. A particular skill is needed when the craftsmen mix the materials. The ratio of brass to tin is three parts to one. The craftsmen have to decide how much material is needed to cast a particular size of gong. They need to add some extra tin because some of it will be burnt up in the fire.

In order to mix the brass and the tin, first the brass is weighed out. Then the tin is melted and poured onto clean ground until it solidifies (see Figure 16). Melting the tin is necessary to check whether it is pure or not. If the tin, after melting, looks shiny, it is pure. Pure tin is good for casting gongs. If the color is silver or white, it is a sign that the tin is not pure. Impure tin is not good for casting gongs, and using impure tin can produce a gong that is easily broken (see Figure 23). If the tin is impure, it must be thrown away. If the tin is found to be pure, the required amount is mixed with the brass in the ratio of 3 parts brass to 1 part tin. Then the brass and the tin are melted together on the air pressure furnace. First the brass and the tin are measured and put into the pot (see Figures 17 and 24). Some charcoal is also put into the pot

in order to get more heat (see Figure 24). Then air is pumped into the pot. This increases the temperature and melts the materials together. The molten liquid flows into a second pot (see Figure 25). This liquid is mixed with some pieces of charcoal. It usually takes about twenty minutes to melt the material.

After that the upper pot has to be removed, so that the craftsmen can move the lower pot with the molten liquid to the mold. The craftsmen carry the pot with tongs and place it on an iron stretcher. The stretcher is made with long iron pipes, fixed parallel to each other, with iron bars fixed crosswise in the middle to hold the pot stable. Two men have to carry the stretcher (see Figure 25). The pot has a pour spout from which the liquid is poured slowly into the mold. Another man holds a piece of rough cloth under the pot so that the liquid passes through the cloth on its way into the mold (see Figure 26). The cloth serves as a sieve which removes the pieces of charcoal that were mixed with the liquid - this way only pure liquid flows into the mold (see Figure 26).

The liquid is kept in the mold to cool down until it solidifies.

The mold (see Figure 21) is made of sticky red soil and rice husk, mixed 50/50. Molds are made in different shapes and sizes. The mold is fixed in a wooden frame, or sometimes old car wheels are used as a frame. Without the frame the mold would not keep its shape and size. Different sizes of mold are made for different sized gongs. Before the brass liquid is poured into the mold, the mold is thinly painted with oil dregs (see Figure 21). This helps the craftsman to remove the brass from the mold when the liquid gets cool, and enables them to get the brass with a harder surface on one side than the other. Impurities appear on the surface of the liquid (see Figure 22) and have to be removed by the craftsmen with a bamboo stick before the brass cools down. It is important to do this before it is too late, otherwise the metal may be damaged. Sometimes there may be a flame from the liquid because of the oil dregs - the craftsman must be very careful not to get burnt. It usually takes about twenty minutes to get the liquid cool to down, leaving a solid brass block with a clean and smooth surface. The block is called myo-khe in Myanmar, which means “the seed of the gong” (see Figure 22) - it is the seed from which the gong will grow.

Figure 21: Mold; oil dregs source: author

Figure 22: Removing impurities; molten figure; *Myo-khe* brass plate
source: author

Figure 23: Broken gongs source: author

Figure 24: Upper pot; increasing the heat source: author

Figure 25: Lower pot; carrying molten brass source: author

Figure 26: Rough cloth filter; Liquid flows into the mold source: author

Step two: making the brass plate

At this step, air pressure furnaces built into the ground are used to heat the brass. The brass plate is made on an anvil where the brass block is hammered into shape. The craftsmen fix an earthen scaffolding (see Figure 27) on the ground around the anvil. The scaffolding is necessary to shape the brass plate to the desired thickness and size. This is especially important in casting big gongs; the bigger the brass plate, the more scaffolding is necessary. Craftsmen use higher scaffolding when they need smoother brass plates and lower scaffolding when they need concave or convex plates. The height of the scaffolding and where it should be put is decided by the master and arranged by the middle hammer-holder (his number two).

When the brass block, the furnace and the scaffolding are ready, the first step is to make the block into a brass plate by heating it and hammering it with iron hammers. The next step is to repair the edge (see Figure 27). The plate is heated in the furnace. When it is hot enough, the craftsmen take it out of the furnace using tongs. It is put on the anvil and checked to see if the edges are smooth enough. The plate is circular. The master hammers it with a small hammer to make it as circular as possible. However, as the block was made in a circular mold there might be little to do – a block may need ten hits maximum to get the required smoothness. This is a preparation for the next step in which the brass plate will be hammered many times. If the plate is smoothly circular, it will remain in a circular shape after the craftsmen have hammered it repeatedly.

At the next step, the circular block with smooth edges is placed on the anvil and hammered. First, the string-holder lifts the brass block up with a pulley. The block has to be held in the middle. The master waits holding the right-hand tongs. As the brass block is put on the furnace, the master has to watch the furnace carefully. If the fire does not reach every part of the block equally, the plate can break. If the flame is stronger in only one part, that part may melt. When the block is heated to the desired temperature, the string-holder pulls it up and places it on the anvil. The master, using his tongs, holds the block and makes sure that it is placed on

the right spot on the anvil. The three hammer-holders (see Figure 28) then come into play. The front hammer-holder strikes the block three times to signal that their part of the work is about to begin. As the front hammer-holder raises his hammer, the middle hammer-holder hits the block. As the middle hammer-holder raises his hammer, the back hammer-holder hits the block. Again, while the back hammer-holder is raising his hammer, the front hammer-holder hits the block. They hit in turn on the center part of the block. When the block is placed on the anvil, the color is bright red, changing to brown when the plate gets cooler, at which point the hammering stops.

The number of hammer-strikes depends on the size of the gong. Bigger gongs need more strikes. For an 8.247 kg gong, there are usually twenty-five to thirty hammer-strikes before the colour changes to brown. All the hammer-holders have to hit on the same spot. The middle hammer-holder has to hit on the spot where the front hammer-holder has hit. The back hammer-holder has to do the same. In order to get the hammer-strikes on the same spot, the tong-holder holds the block with his tongs and moves it appropriately. This is necessary because otherwise the strikes may create holes in the block and may even break it. After one round of hammering, three circles appear on the plate. They look like the Olympic symbol (see Figure 29). In order for those circles to appear on the block, the tongs-holder has to move it correctly. The hammer-holders, as they are directed by the tongs-holder, hammer on the block. They begin hitting it on the center spot and then slowly move round and round clockwise until they have hammered the whole surface. If the block is big and heavy, it is usually heated two or three times. After hammering ten or eleven times, they have hammered the block to the edge. The block is now a flat-plate (see Figure 29) with a shallow concave part in the middle. Then hammering starts again from the center. After hammering four or five times, the shape is like a mixing bowl (see Figure 30). Hammering begins from the center again and after twenty or twenty-one strikes, the plate shapes like a pan (see Figure 30). If the plate is not wide enough, the craftsmen continue to hammer it. This time the pan-shaped brass is heated upside down on the furnace and then hammered upside down on

the anvil. As the craftsmen are heating and hammering the brass, the scaffolding must be fixed and re-fixed, so that the height is equal on both sides. If the height is not equal, the brass plate will not be smooth enough. The craftsmen say that strong scaffolding makes strong gongs.

For the brass block to become a brass plate of the required diameter to make an 8.247 kg gong, hammering is necessary about 55 times. Each time round, there are about 25 strikes on the plate at the center; as the hammering reaches the edge, the number of strikes increases. Approximately, 45 to 55 strikes are required on the edge. The block used to make an 8.247 kg gong is about 30.48 cm in diameter. The craftsmen have to hammer it wider and thinner, to a diameter of 63.50 cm. Then the craftsmen start to fold the edge. With an 8.247 kg gong of a diameter of 63.50 cm, 7.62 cm from the edge will be folded reducing the diameter of the unfolded center to 55.88cm. By hammering the inner part, the edge begins to turn upwards. The brass is heated on the furnace two or three more times and hammered again and again until the edge is upright. The brass plate now starts to look like a gong (see Figure 31).

When the edge is properly vertical, the craftsmen hammer the other parts with straight and smooth hammers. In this step, the soil around the anvil and the soil from both sides of the scaffolding are removed, so that the anvil is level with the ground. The middle hammer-holder undertakes this task. The craftsmen have to heat the brass and hammer the plate for about twelve more rounds. When the master thinks that they have made the gong satisfactorily, they heat it for the last time until the color becomes bright red. Then they take the gong out of the furnace and let it cool down, until the color becomes brown. As soon as that happens, the gong is put into a brick water tank. It is vital that the gong is put into the water at the right moment (see Figure 31). If the brass is too hot, it becomes too hard and can easily break. If it is too cool, the brass is not hard enough and again can easily break. Only if the gong is put in the water at the right time will the craftsmen be able hammer it again to complete their work. When iron is heated, then put in water, then hammered, it can break. But when brass is treated the same way it becomes soft enough to work on.

Figure 27: Making the scaffolding; repairing the edge source: author

Figure 28: A strong flame; three hammer-holders source: author

Figure 29: "olympic symbol"; flat plate source: author

Figure 30: Mixing bowl and pan source: author

Figure 31: Starting to look like a gong; putting into water source: author

Step three: shaping the gong

A wooden anvil (see Figure 32) is used in this step instead of an iron one. Tamarind wood is used since it is hard enough to take the impact of the hammer blows. The hammers used in this step are also wooden. Craftsmen heat the gong and shape the upright edge with wooden hammers. It is important not to hammer the center part where the knob is going to be shaped because hammering at this stage might break it. The upright edge must be smooth (see Figure 32). For that purpose, the craftsmen use horseshoe shaped hammers. The next step is to cut a circular groove between the upright edge and the flat part of the gong (see Figure 33). This helps to improve the musical note. For that purpose, a wooden hammer called a carpenter-square hammer is

used. This hammer is shaped like an iron pin with a flat end. The blade of the flat edge is thin but not too sharp. The sharpness is just enough to make a groove. First, the gong is heated until it is bright red, when the craftsmen place it on the wooden anvil. Keeping the gong in the right position, the craftsmen create the groove using the carpenter-square hammer. Next, they have to hammer the upright edge and the flat part of the gong with a narrow horseshoe hammer and a wooden club, or a straight and smooth hammer with a flat surface, so that the surface of the gong becomes smooth. After repeated heating and hammering, the gong has a smooth surface. However, the last stage remains to be done; that is to shape the knob at the center of the gong.

Figure 32: Wooden anvil; upright edge source: author

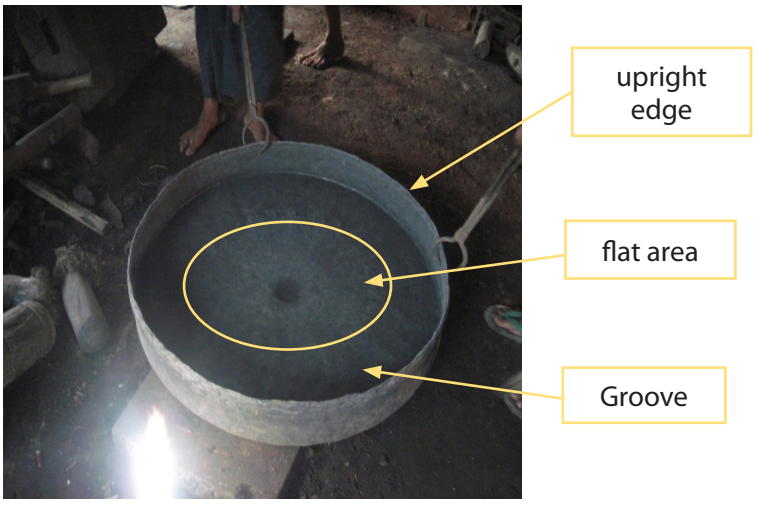

Figure 33: Cutting a groove source: author

Step four: shaping the knob

The knob is always at the center of the gong. The center point is shaped like a hemisphere pointing out from the face of the gong. As the knob is pointing out from the face, the opposite surface is shaped like a bowl. When someone strikes on the gong knob, the sound creates echoes which are deep and long. The knob is usually thicker metal than the rest of the gong; this is to prevent it breaking easily, as it is struck the most, and also to ensure a long deep sound. The tools used in this step are a wooden concave anvil (see Figure 34), wooden clubs, tongs and a wooden pestle. The concave part of the anvil is where the knob is shaped. Wooden clubs are hammers with rectangular surfaces. The anvils used to shape knobs are of three kinds used in the first, middle and last stages respectively. Likewise, the wooden clubs and pestles.

First, the gong is heated on the furnace. When the entire gong is bright red, the tongs-holder carries it with the tongs and places it on the wooden concave anvil. A hammer-holder then places a wooden pestle at the center of the gong and hammers it with wooden clubs. He has to hammer this way until they get the knob with the desired shape. If they are making a heavy gong, more craftsmen have to hold the gong and three hammer-holders have to work together.

There are three rounds. For the last stage, the anvil used, unlike other concaves, has an iron ring around the mouth. The iron ring is to keep the mouth of the knob in a circular shape (see Figures 35, 60 and 61). At the final stage, the master checks the knob to see whether it is exactly at the center or not, whether it is pointed out enough or not, and whether it is round enough (see Figure 34). If he thinks it is satisfactory, the gong is heated again on the furnace and the surface is smoothed by hammering with soft wooden clubs. This needs to be done once or twice. When the gong's surface is smooth enough, it is heated again and put in the water. This completes shaping the knob.

Figure 34: Wooden concave anvil; Wooden pestles source: author

Figure 35: Wooden concave anvil– iron ring; Shaping the knob
source: author

Step five: tuning up the gong

The musical note is an essential part of the gong. Xylophones are used to tune the notes, which are adjusted by filling the hollow boss (the knob) with a mixture of beeswax and lead filings. The total number of gongs in a chime is eighteen (Chan, 2005).

After shaping the knob, the gong is heated again and kept in the water for about thirty minutes. The next step is to tune up the gong. It is possible to do this without heating it again and putting it in the water. But that way of tuning does not last long, because the brass in some parts of the gong will still not be hard enough. Therefore, there is more work to be done. Firstly, the master shapes the knob properly. He has to do this himself as he is the only one who knows how. The master knows the spots on which the hammer-holders struck. He can visualize the spots as if he were seeing them. Without this skill, the work of tuning the gong may take too long. The craftsmen use a 243.84 cm long wooden bar. This bar is hung 50.8 cm from the ground. One end of the bar is securely fixed, while the other end is left unfixed. The gong is placed below the bar with its face upward. In the middle of the bar, a hard wooden rod is fixed with one end on the face of the gong. Some craftsmen sit on the unfixed end of the bar. One to three men have to sit there to add enough weight (see Figure 37). The wooden rod that had been placed vertically on the gong puts pressure on it (see Figure 37). The men on the bar move in order to reduce or increase the weight on the gong. The master gently hammers on the spot where the brass gong gets pressure from the pole. He uses a straight and smooth hammer this time (see Figure 37). This way, the master fixes the face of the gong in order to make it smooth and to tune it up. Then they remove the pole and test the sound. They have to do it about fifteen times until the master is satisfied. In this step, craftsmen do not use big iron hammers since that would damage the gong.

Any kind of brass percussion instrument must produce an echo that follows the sound produced by its being struck. When someone strikes a brass musical instrument, it usually produces a sound that lasts for a few seconds. In order to have that kind of echoing sound, craftsmen have to tune up the instrument. In

particular, gongs used to indicate the time or to call for public attention must produce echoing sounds.

In order to cast a gong that can produce good quality sound, craftsmen have to cast it with different thicknesses in different parts of the gong. They say that three thick parts and three thin parts are necessary characteristics of a good quality gong. The knob, the shoulder-tip (see Figure 36) and the fold of the edge are the parts that need to be thicker. In order to have the right thickness at the right part, the brass plate must be heated and hammered. Only then will the gong produce a melodious sound. One of the characteristics of brass gongs is that the surface of the gong must not be too thick. The thickness of the brass is an important characteristic of brass gongs.

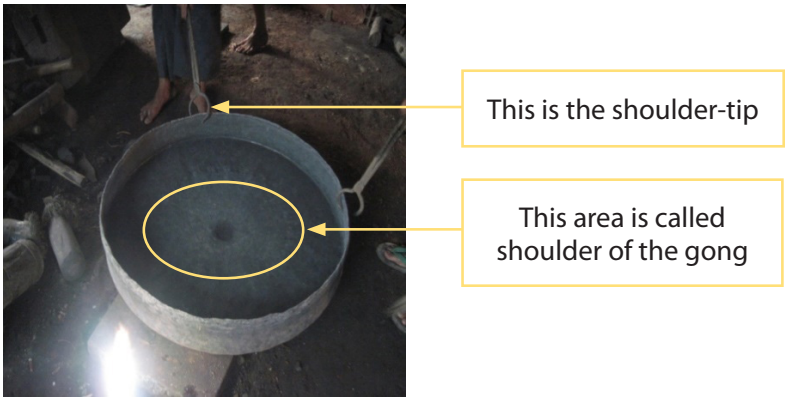

Figure 36: Gong shoulder tip source: author

When the craftsmen have tuned up the gong, they make two holes where a string will be fixed to hang the gong above the ground. The position of the holes on big gongs depends on the diameter of the gongs. The holes have a distance between them that is 2.54 cm less than an eighth of the diameter of the gong. The string is made with coconut fiber. While two men lift the gong, the master tunes the gong again and again using a padded hammer (see Figure 38) until he finds the sound satisfactory.

The holes are bigger in bigger gongs. Craftsmen use a drill to make the holes. The sound is mainly produced around the knob, and therefore the holes do not affect the sound. If the master does not

like the sound, the craftsmen place the gong on an iron anvil and re-tune it by hammering it with a wooden hammer. If it is still not satisfactory, they have to use the wooden bar and the pole to tune it up again. They have to keep on doing this until the gong produces the required western F - the fifth note in the Myanmar seven tone scale, or western E - the sixth note in the Myanmar scale.

Figure 37: Tuning up the gong source: author

Figure 38: Drilling a hole in the gong; testing the sound source: author

4

BRASS GONG COMMUNITY OF PRACTICE

The master (see Figure 39) gives guidance and leadership for all the workers in the foundry. It takes ten to fifteen years of experience to become a skillful master. He is also known as the tongs-holder or master of tongs, so-called because he has to manoeuvre the red-hot brass with his various sets of tongs while it goes through the various procedures. Tongs are necessary to handle the hot brass, and the tongs-holder's skill is in placing the brass correctly for the hammer strikes. To become a tongs-holder takes more than ten years' training; and that is not the end - it takes even longer to be able to make a gong with a melodious tone.

The masters who own the foundries in Tampawady are in their late fifties. According to a fifty-year-old master, it is not possible for a man to work as a tongs-holder after sixty. He said that years of this work have damaged his hearing and also caused backache.

A tongs-holder explained that learning the handicraft requires not only practical learning but also watching to get the skill of holding and striking the hammer:

> I teach at first to steady the hand when I teach them to strike the hammer. At first, I ask them to put the brass block on the anvil. My master taught us by using tin plate at first. At first, I practiced that way. My master put the tin plate onto the anvil and rotated it himself to teach us. I struck the tin plate that my

> master turned. I used the wooden hammer. I had to practice the hammer strike carefully. I trained the three hammer-holders about the input and output of hammer strokes until they got into harmony with each other. I asked them to practice with iron hammers after they have got the hang of it with wooden ones. Practicing with wooden hammers is not harmful for the craftsman. I have to practice for one hour 30 minutes or two hours at each training spell. We have to practice by using the wooden hammer for seven days at least. The fire does not need to be used in that training time.

The tongs-holder does not let beginners use the hammers. No one can strike without getting permission from the master. The master is concerned to avoid accidents. The master allows trainees to strike the hammer after they have watched and listened, and absorbed. Moreover, the hammer-holders have to keep in mind with eyes or ears when it is suitable to strike (e.g. one strike of front hammer-holder, one strike of middle hammer-holder and one strike of back hammer-holder etc.). When each hammer-holder reaches his turn, he has to count 1-2-3 in his head and if his turn is reached, say "three" out loud and strike the hammer. At this time, listening is important. Otherwise hammer-holders can lose the rhythm and their hands, and the plate, can break.

Figure 39: The master source: author

The next most important members of the team are the three

hammer-holders. The middle hammer-holder (see Figure 40) is the most experienced and skillful, and is the master's number two. Next comes the front hammer-holder (see Figure 40) and then the back hammer-holder (see Figure 40) who is the least experienced of the three. A back hammer-holder has to learn over two years, a front hammer-holder learns over about three years, and a middle hammer-holder over about five years. Hammers with different sizes and shapes are used; a particular stage requires a particular hammer. For example, three iron hammers – front, middle and back - are used to hammer the brass block into a plate. At other stages different wooden hammers are used. The hammer-holders have to strike the brass at the right place, and in turn. If they strike two or three times on the same place, the brass plate can be damaged and cannot be turned into a gong. If the hammer holders are not paying attention or are inexperienced, the whole process can be vitiated.

Figure 40: The three hammer-holders source: author

The middle hammer-holder told us how he learnt about the earthen scaffolding:

> My master taught me carefully about the preparation of earthen scaffolding. We made it in accordance with his teaching - indeed he taught us while we were doing the job. He also gave us verbal explanations. Sometime he taught us by pointing things out when he was chewing a betel nut. Sometimes he pointed out the site for the scaffolding with his iron stick.

The front hammer-holder kicks off the hammering process, followed by the middle hammer-holder and then the back

hammer-holder. They continue striking in sequence. The back hammer-holder has to strike harder than the others. The front and middle hammer-holders have to strike with equal force - their normal striking force. They aim to strike repeatedly at around the same place.

The three hammer-holders produce a regular "1-2-3" "1-2-3" sound as they work in harmony. The front hammer-holder has to know the signal to start hammering - when the tongs-holder pulls and turns the brass plate by using the right tongs with his right hand. As soon as the hammer-holder puts the brass plate on the earthen scaffolding, the front hammer-holder makes a sound like *dauk* and starts the hammer strike. Then, the middle hammer-holder and back hammer-holder strike the plate in rotation.

A middle hammer-holder, 42 years old with 15 years of experience in this foundry, explained his experience:

> I joined this handicraft at 24 years old. I began as a string-puller. Most of the work was taught by my master. But I also learned from the senior craftsmen by studying and watching their craft. When I learnt to be a furnace-worker, I imitated the hammer striking techniques while I was doing my work. I learned by watching for at least six months. Later, I tried to strike the hammer 4/5 hammer strikes to the get the hammer striking practice. My arm muscle was getting strong enough. At that time, I also got enough practice to be able to strike the hammer.

Hammer-holders need five years to get their hands adapted to the hammer. Hammer-holders usually suffer from aching arm muscles for a long time in the early stages of holding the hammer, which can weigh 5 kg or more. There is a saying among gong craftsmen "All brass gong craftsmen miss the morsel of rice". This means that when they begin striking the hammer, they can't lift a morsel of rice or get it into their mouths because their arm muscles are stiff and swollen. And then the skin of their palms becomes so cracked that they cannot hold the hammer. Therefore, hammer-holders need to rest for two or three days at the start of their career, and then gradually get used to the work while their hands and muscles recover.

The furnace-worker has to adjust the temperature of the furnace as instructed by the master. The temperature has to be right: too much heat, or too little, and the work can be spoilt. A furnace worker needs over a year's training. The worker has to be able to interpret signs and gestures from the master – it is too noisy in the foundry for spoken instructions. For example, when the master picks up the tongs with his left hand, this is a signal for the furnace worker to change the temperature of the furnace.

Figure 41: The string-puller source: author

The string-puller (see Figure 41) helps the master to move the heavy brass block, again following the master's instructions which may be given by signs or gestures. For example, if the master picks up one of the sets of tongs, this is a signal for the string-puller to pull up the brass plate. The string-puller has to learn for at least six months. U Soe Myin, a master with over 21 years of experience in this foundry talked about how he started work:

> I started this job as an apprentice when I was 18 years old. Before this job, I worked at a tea shop at the corner of 29 Street as snack master. The tea shops closed down and I returned to my native town, Innwa. When I reached home, I met a master who worked in a brass gong foundry near my house. He offered to teach me so I began this job. I was a newcomer so I did not work at once in the foundry. I studied the process of this craft by watching the other

> craftsmen and listening to them as they worked. I imitated the working method of senior craftsmen so as not to be scolded or shouted at by the master. I was afraid to be scolded by the master and watched very carefully to be sure I remembered everything I saw. After starting the job in the foundry, they did not let me work at once. I would wear my longyi as *pasoe*[13] however hot or cool the weather outside—the foundry was always very hot.

U Soe Myin also told of his experience learning the art of gong handicraft:

> When I learned this job from the master, I learned as a household member, serving meals and performing other household duties. The master gave me 150 kyat per day as pocket money. At that time (2007), craftsmen were hard to find. When I started, I heard that a string-puller was needed. At the beginning the job was difficult. The master explained everything. Later on, I just watched the master's gestures and automatically knew what to do.

The shield-holder (see Figure 40) has the lowest position in the foundry. Everyone who wants to learn to make gongs has to begin at this position. The shield-holder has to learn the art during his four or five months in this position. He has to hold a wet bamboo tray between the furnace and the master in order to protect the latter from the heat. He can watch, and learn from, the entire process while the other craftsmen are doing their jobs.

Most new trainees are teenagers between fifteen and sixteen. They have various reasons for joining the foundry: either they cannot afford to go to school, or they want to do something to boost their families' income, or they are not interested in school education, or they have no other skills. The foundry work may be the only work they can find; indeed, it is rare to find craftsmen who value and

13. *Pasoe* is a way of tying up a man's long longyi into short pants, to cool off or for greater freedom of movement

take an interest in their craft. Often, they do not have another choice of profession. What is very rare is to find a new recruit following a family tradition – making brass gongs is very hard and very tiring work, as any family member would know, so they mostly look for something easier. This research found that the brass gong making workforce in Tampawady has been gradually shrinking.

Brass gong craftsmen in Tampawady learn their craft step by step together and under the instruction of their master. Their practical application creates the skill and working experience enabling them to move on to the next step in their work field. Working in the foundry, they learn from each other. Because they have to work together as a team, they also need to develop a mutual understanding each of the other. By practicing their handicraft, they learn about it, and it becomes their profession and livelihood.

According to a 39-year-old craftsman:

> Our brass gong craftsmen have to take care of themselves, as the absence of one member affects all. We have to think of all the members as a family and set our minds as a brotherhood for all members. Because of this, we will go absent only if we are seriously ill. We cannot go away for travel or a trip. We cannot go to watch a festival. We are concerned that if one is absent all the others have to stop work and lose income. We have to empathize with all the craftsmen because their families depend on this income.

He explained how he became a brass gong craftsman:

> When I was young, I worked as a carpenter. I lived in Innwa. I met by chance with a local foundry master. That was the starting point of my becoming a brass gong craftsman. My master encouraged me to study this art. I was also originally interested in the art of bronze casting. I started to learn this handicraft as a string-puller which is the lowest step of the handicraft. Fortunately, when I joined, the post of string-puller was vacant. I started from there. At the beginning my

> master gave me many instructions and pointed out facts about the handicraft. Sometimes he taught with body language or gestures, and sometimes by verbal instructions. With experience, I automatically understood by watching my master and the other craftsmen. Later, I became the furnace-worker. After that I moved steadily up to back-hammer-holder, front-hammer-holder and middle-hammer-holder. When I started I was 18 years-old. When I was 22 years old, I became a tongs-holder. It was an achievement to reach that level so quickly. My master schooled me carefully in the handicraft. In this foundry we learn not only by listening, but also by seeing.

In the foundry, learning by seeing or listening is the study system. The beginner has to learn from senior craftsmen by watching them work and using his ears and eyes. A newcomer has to study by watching for at least six months.

Therefore, the job of brass gong making is easy to learn if the teacher and learner can share the same view about the job. The string-puller who is a newcomer to brass gong making has to do the job under the instructions of the master. They have to work harmoniously together. The duty of the string-puller is to lift up or put down the brass plate onto the furnace. The tongs-holder does not need to explain this process because the string-puller learned at the outset that he had to follow the gestures of the master. A string-puller explained:

> The master holds the large tongs in his left hand and the iron stick in his right hand. I prepare to pull the string when the tongs-holder puts down his iron stick. The tongs-holder holds the iron stick in his left hand to rotate the brass plate. I watch the position of the iron stick which the tongs-holder puts from his hand onto the anvil. If the tongs-holder puts the handle of the iron stick onto the anvil it means the brass plate is overheated and should be put in the water. If the iron stick is placed beside the anvil, it means move the brass plate to the anvil or turn it

> over. The string-puller pulls up or puts down the brass plate from or to the furnace according to the tongs-holder's gestures with the iron stick. If the tongs-holder adds the large tongs in his left hand to the side of his hand I understand that I should pull up the brass plate.

Sometimes the string-puller can be drowsy and forget. In that event, the master will frighten the string-puller for example by shouting loudly. A craftsman told us that as a newcomer he was scolded severely and told to wash his face by the master if he was very sleepy:

> When I started this job, I was 21 years old. The main reason I joined was to follow my brother, who had joined earlier. I joined as a string-puller. There was one time when I was very sleepy and forgot to pull up the gong, and the master was shouting at me loudly. All the craftsmen were laughing and looking at me.

The furnace-worker's duties are also very important. The furnace-worker adjusts the fire during the hammering process, according to the instructions of the tongs-holder. The furnace-worker is the second youngest in the foundry. The furnace-worker can learn the hammering process while looking after the furnace. The furnace-worker has to serve in that capacity for 1 to 1.5 years at least. At the beginning the furnace-worker suffers pain in his arm muscles. A furnace-worker explained:

> When I joined this craft, I learned as much as I could during my time as string-puller. The master sometimes taught by shouting. He also taught how the condition of the brass block and temperature of the fire could be adjusted. When I started as a furnace-worker, I had severe arm-ache. Assessing the condition of the brass block and the temperature of the fire are the main points to becoming a good furnace-worker. Experience taught me these things so that later I knew when to adjust the temperature of the fire at the place where the hammer-holders wanted to strike.

The furnace-worker looks carefully at the condition of the brass block and quickly turns the heat up or down. If the temperature is too high, the brass block can melt, and if it is too low the striking will not have the desired effect. The furnace-worker has to have a good rapport with the tongs-holder. A mutual understanding with the three hammer-holders is also important. The furnace-worker has to adjust the temperature of the fire according to the needs of the tongs-holder and the hammer-holders. The furnace-worker must be flexible and harmonize his work with the tongs-holder and the hammer-holders.

A furnace worker aged 39 explains:

> I was also sleepy when I started this job, as I started work at 1am or 2 am. Sometimes the master had to wake me up with a loud noise. I always imitate the working manner of senior craftsmen. When I am working the master teaches me how to listen to the sound and when to use the large embers. The fire has to reach the center of the brass plate when the hammer-holder strikes there. The temperature is too high if the color of the fire changes from the bright red to yellow, and then I have to reduce the temperature quickly, otherwise the plate can melt. Because of these situations, the understanding about the strength of the fire is an essential skill for a furnace-worker.

Another furnace-worker added:

> The furnace-worker needs a good eye and the ability to act quickly. If the furnace-worker is slow, the whole brass plate can melt. Then the whole process has to start over again. Re-forming the plate and re-melting the brass are time consuming jobs. The owner also loses some material. We can't get the wages for that day. So, everybody suffers. We have to be more careful in future. We can't afford to lose our wages.

An unwilling furnace-worker told the researcher about his life:

> When I started this job, I was 22 years old. I began as the string-puller. Our master is the person who teaches us. I have worked as string puller, then furnace worker and then three posts as hammer-holder. I have a lot of experience and skills. If my master trusted me, I could reach the step of tongs-holder. But I can't because I am left-handed. I have got the job skill and the experience. But I cannot reach the step of hammer-holder because all the other hammer-holders are right-handed. I cannot pair with another hammer-holder as I am left-handed. If right-handed and left-handed were paired this would be very dangerous. The hammering would be wrong and people could be harmed. But I do not give up. My master also does not give up teaching me. He taught me to be able to hold the hammer with my right hand. But time was lost and will never come back. In the end, I gave up. Now my job service is 18 years and I am continuing as furnace worker. There are men here who I have taught, who reached the level of the tongs-holder. But I will live my whole life as a furnace-worker.

In the brass gong making community, the craftsmen have to work closely and harmoniously together. They have to follow the lead of the master. The interrelationships between master and craftsman, and the craftsmen amongst each other, plus the attitude of the craftsmen to their craft, are all points relevant to the success of the brass gong making handicraft.

According to an 80 years old skilled craftsman of Tampawady, Khat-Tan, brass gongs used to be expensive because the art was valued a lot. It was expensive to order a brass gong, and therefore the craftsmen received good pay. He said:

> When we received many orders and had to work all month, the income was good. But we only have work for about twenty days a month these days. We cannot work more than that either; it is too hard to work every day.

Since craftsmen who worked in brass gong foundries were well paid, they were popular among women. Parents of single women seemed to favor brass gong craftsmen for their daughters. There was a saying, "*toat-toat-tin* is welcome; but *tauk-tauk-tat-tat* is not." *Toat-toat-tin* is the sound that is produced while casting gongs and *tauk-tauk-tat-tat* is the sound that is produced while carving wood. Thus it means that brass gong craftsmen were favored by the parents of single daughters, but wood carvers were not. Woodcarving did not used to be a well-paid job. However, it is different now. Although brass gong craftsmen are still well paid, the work is so hard that not many people choose this livelihood. And it is not a regular job nowadays due to the shortage of materials. Therefore, it can be seen that brass gong craftsmen are not popular among single women like they were before (Lei Shwe Sin Myint, 2014).

A tongs-holder explained what he does to help the craftsmen in his community:

> I try to get as many orders as possible from the brassware traders. I have foundries for all sizes - one for big size gongs, one for medium size gongs, and one for small size gongs. I try to get many orders, so that craftsmen in my teams have regular jobs throughout the year. They need regular jobs because they have families to support. They used to have enough money for the year if they just worked for six months in the cool season. But that is not possible now. Because commodity prices are increasing, they need to produce brass gongs all year round. But they need the orders from the merchants. They produce a number of gongs in a day; and they are paid daily thus they are waged handicraftsman. Therefore, they can do other part-time jobs when they finish work at the foundry. If there is no order from the traders and the conditions of the trade are dull, the owner of foundry can use his own money to finance the manufacture and storage of some gongs out of his concern for the workers. Field research shows that craftsmen are paid in advance.

The researcher arrived at the foundry at one o'clock in the morning. The weather was very cold. Not all the workers had arrived. The owner sent for the craftsmen in his community. But one of the hammer-holders said that he could not come. Thus the owner had to pay the wage for the day to the man's wife and asked her to wake him up. It can be seen here that there is respect between the owner and the craftsmen. Owners have to pay the wages in advance for the following reasons: there are only a few skilled craftsmen in Tampawady - if one craftsman is absent, other craftsmen will lose their money for that day. The owners have to consider the other craftsmen; and craftsmen are not easily replaced.

Some brass gong foundries owners say that:

> We sometimes have to help the craftsmen with their family problems. When they have difficult times due to problems such as health, religious or social matters, the owners have to pay them the wages in advance. According to those foundry owners, they have to take care of their craftsmen's social lives.

Thus brass gong casting needs unity at work, family spirit, social understanding, and helpful attitude. Most of the craftsmen take their wages in advance from their owner and the owner lends them money when they are faced with financial difficulties. The loans are repaid, without interest, by deductions from wages.

According to a craftsman who is 47 years old:

> I have worked in this foundry for 20 years. I have been paid daily. Sometimes I borrow from my master if I have a large expense. I borrowed 200,000 kyats two years ago as I wanted to buy a motorbike for my son. I did not need to pay interest. The owner cut one thousand kyat a day from my wages, so it was all repaid after about 10 months. It is convenient because I can repay the borrowed cash gradually. I can borrow the next time when I require. Other craftsmen likewise. The repayment instalments also are not large, only one thousand kyat for per day. That is also convenient.

A handicraftsman, 45 years old, who graduated to tongs-holder from hammer-holder, explained about his experience:

> I started this job at 19 years old. At the age of 26 I started to learn the holding of tongs. I married at 28 years old. After I had been married for 2 years, I became ill with jaundice. I could do nothing and then went on to get malaria. I underwent medical treatment for two years. I was in serious trouble as I had no income at that time. When I was a little recovered, I went to my foundry and asked my master for help. My master and all the craftsmen welcomed me. At that time, the only job I could do was shield-holder or if a string-puller was required, I did string-puller. And later I did a little work as furnace-worker. When I could not do heavy jobs in the foundry, I looked for earnings from the jobs which I could do. My master was my main support. He found me suitable jobs which I could do to earn some money. The other craftsmen also treated me kindly. These were familial obligations of all craftsmen for me. I retrained gradually and was able to be a hammer-holder, and now I can also hold the tongs. I have got back my original life style. I think that I owe it to the kindness of my colleagues that I can stand here now.

He explained that the reciprocal understanding between the owner and craftsmen not only can create a successful handicraft but also can assist the stability of a family. The community of brass gong making requires not only collaboration with each other in the workplace but also familial obligations, social considerations and mutual assistance within the community.

In the process of brass gong making, if a craftsman is absent, the whole foundry stops work for the day. Because of this the other craftsman do not get their wages that day. Craftsmen need to work in sympathy with each other. In former times, gong craftsman started work at 1am. Nowadays, working time is divided into two shifts and workers into four groups. Three of the four groups start work at 4 am and work until 10 am. The working time of the other

group is 7 pm to 10 pm. In this system, if a craftsmen is ill or wants a day off for some reason, he can ask a craftsmen on the other shift to substitute for him. If this works all the craftsmen get their wages notwithstanding the absence, and harmony prevails in the team.

A hammer-holder explained the empathy among the craftsmen:

> Our craftsmen have to work with consideration. Brass gong making is our only job. I do not want to stop other craftsmen getting paid. All family members depend on the income of the workers. Thus, if we want a day off, we adjust things to free a man to substitute for the absentee. That is convenient for both sides. The absentee doesn't need to worry about his job. And the other craftsmen can carry on working.

The craftsmen work with mutual consideration for each other. If one of the hammer-holders is absent through ill health, the hammer striking cannot proceed. Moreover, the striking force of each hammer-holder has to be equal. The craftsmen need to check each other out to see who is in a weak condition or in ill health. If one of the hammer-holders uses more force than the others, the timing and harmony of the hammer strike can go wrong. If this happens, the brass plate will not produce the right sound. The hammer-holders have to strike in harmony if there is not to be a sound problem. According to the master of the foundry, the hammer-holders have to check with each other continuously and have to strike with mutual consideration to avoid problems.

5

CONCLUSIONS

Brass gongs are used for various reasons in various ways in many countries, but their use in religion, social sectors, and administrative sectors is unique to the culture of Myanmar. Brass gongs can be traced back to the Pyu era (AD 5th-9th centuries), but are now the heritage of Tampawady.

Brass gongs, whether they produce sound or not, are considered auspicious objects that enhance the blissful environment of Buddhist temples. To Buddhists the sound of brass bells and brass gongs represents wholesome deeds, success in life, and fulfillment of good wishes. They also have a role to play in animist practices, which thrive in Myanmar side by side with Buddhism.

The practice of the ancient handicraft was losing popularity and at risk of disappearing, partly due to a shrinking labor force; the work is hard and it takes years of training to reach the higher levels. Also, the work is harmful to health. Old craftsmen have health problems as a result of the work; their backs are bent and weak, their hearing is weak and some become deaf. It is possible to cast a brass gong using modern techniques which are less physically demanding. In 2015 a machine hammer was introduced in one of the three foundries making large gongs, obviating the need for manual hammering, the most physically demanding part of the job. This has improved the handicraft's image, and now many craftsmen are interested in joining the profession. But although there is no longer a recruitment problem, a spread of mechanization would mean the loss of much of the old tradition.

The researcher hopes that craftsmen will value and maintain the art of brass gong casting in changed circumstances.

Another problem for the foundries is a shortage of material. To maintain this handicraft a way must be found to make sufficient material available for the demands of the market. In particular, there is a shortage of tin. After tin trading was handed over to private companies, it became more difficult to buy tin for brass gong casting. There is not much increase in cost, but there is less availability.

Although the art of brass gong making can appear rough and difficult from outside, the art is actually very delicate, soft and deep. This art cannot be learnt by seeing or by going step by step as one might at school. The art of brass gong making is learnt by practicing it over many years together with colleagues, and learning from the master. It is not possible to tune the gong without a craftsman who has the necessary skill, acquired through long years of experience.

The brass gong makers do not need a formal education; job skill is what is important for them. Brass gong making needs not only the empathy between owner and workers, but also the empathy of the workers with each other, including the ability to learn from fellow workers. Empathy extends beyond the workplace; in particular foundry owners will help workers with interest-free loans if they have financial problems.

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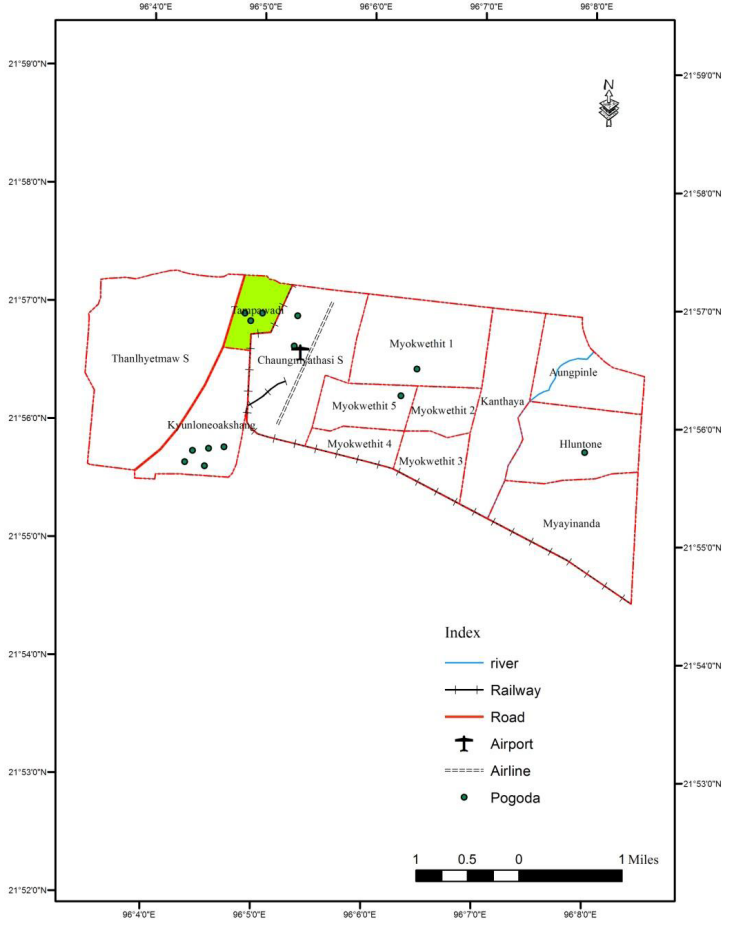
APPENDIX 1

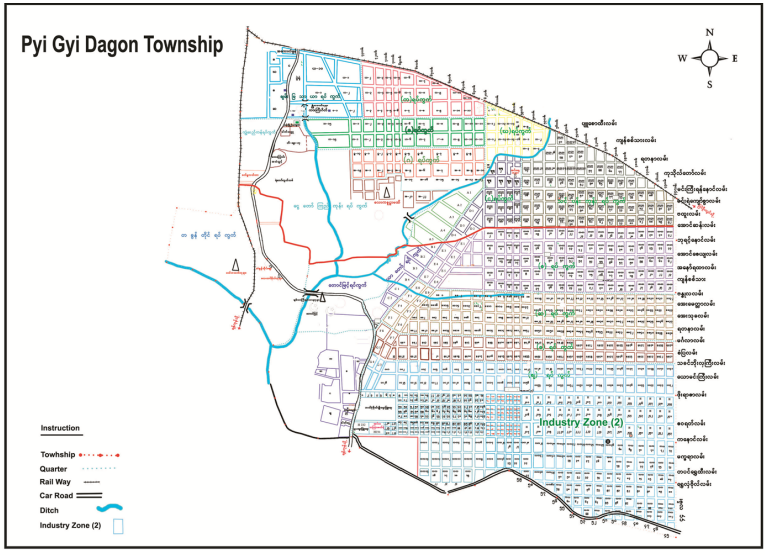
Location of Chan-Mya-Tha-Zi Township



Source: Geography Department, Mandalay

APPENDIX 2

Location of Industrial Zone (2), Pyi-gyi-dagon Township



Source: Geography Department, Mandalay

APPENDIX 3

The dimensions of large-sized gongs

No	Weight of gong	Thickness of brass block	Thickness of brass plate	Circumference of finished gong
1	4.123 kg	22.86cm	6.35 cm	43.18 cm
2	4.948 kg	22.86 cm	6.35 cm	45.72 cm
3	6.597 kg	25.4 cm	7.62 cm	50.8 cm
4	8.247 kg	30.48 cm	8.89 cm	55.88 cm
5	9.896 kg	33.02 cm	10.16 cm	60.96 cm
6	11.55 kg	38.1 cm	10.16 cm	63.5 cm
7	13.2 kg	43.18 cm	10.16 cm	66.04 cm
8	14.85 kg	45.72 cm	11.43 cm	68.58 cm
9	16.49 kg	50.8 cm	11.43 cm	71.12 cm
10	18.15 kg	55.88 cm	12.7 cm	76.2 cm
11	19.79 kg	55.88 cm	12.7 cm	76.2 cm
12	21.44 kg	55.88 cm	12.7 cm	81.28 cm
13	23.09 kg	60.96 cm	13.97 cm	86.36 cm
14	24.74 kg	66.04 cm	15.24 cm	88.9 cm
15	26.39 kg	66.04 cm	16.51 cm	91.44cm

Source: Field survey 2015-201?

About the Author

Lei Shwe Sin Myint is an Associate Professor of the Department of Anthropology, University of Mandalay. For her Master of Arts (Anthropology) her thesis was "The Social Organization of Lisu Nationals, High-Phat Village, Nam-San Township, Southern Shan State" in 2000. She completed her doctor of Philosophy (Anthropology), with a dissertation on the Anthropological Perspective of the Brass Gong Culture of Bamar Nationals in 2014. She focuses on ethnic community and material culture of handicrafts.

Currently she is researching traditional gender roles and modernity in tea-producing Palaung communities under the title "Changing Women's Expectations and Perspectives in Northern Shan State" through the "Capacity Building in Knowledge Production for Teaching and Research in Social Sciences at the University of Mandalay" program, funded by the International Development Research Center of Canada (IDRC).

COMMUNITY OF PRACTICE IN THE BRASS GONG FOUNDRIES OF TAMPAWADY, MANDALAY

The transformations happening throughout Myanmar society are visible even in the seemingly disconnected community of brass gong artisans of Tampawady district in urban Mandalay. Brass gongs have long played a role in the ritual and ceremonial life of Myanmar's millions of Buddhists, and brass gong artisans have enjoyed royal patronage for centuries. From the 19th century a brass-gong artisan community has existed in Tampawady, and Lei Shwe Sin Myint has engaged the craftsmen of this community in her research exploring not just the ritual use of brass gongs, but also the unique society that has developed among brass-gong workers.

Their close quarters, working conditions, unique skillset and unusual isolation from daytime society has led them to develop as a community with elements of cottage industry, blue collar labor, religious and artistic practice, rolled into one. However, the expansion of rapidly urbanizing Mandalay and new technological innovations threaten to drastically change the methods of brass gong production and the community that has grown in the Tampawady quarter. Lei Shwe Sin Myint has engaged the craftsmen and foundry owners to see how their livelihoods and art will be impacted, and how the character of urban Mandalay will change as well.

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