Bal. Pulse = 1'

Kevin Murphy

Senior Honors Colloquium

May 1994
Introduction

The music of the Gamelan orchestra is legendary in western music schools. It is a much discussed but little heard music in western music schools. We are taught how the great composer Claude Debussy was so inspired by its meditative music that he spent his entire output imitating the sounds of Indonesia, however true this maybe. While the topic of this paper is not Debussy but the gamelan and me, I feel kinship with him because I too have been inspired by the music and instruments of the gamelan.

What follows is a brief discussion of the gamelan orchestra. The instruments are discussed both in terms of their construction and their role within the ensemble. The instrumentation of the ideal gamelan orchestra is explained as well as the specific, somewhat less than ideal orchestra at the University of North Texas. There is then a description of my first gamelan experience. This is all in preparation for a discussion of a piece written by me for the University of North Texas gamelan orchestra.

The Indonesian Gamelan

The origins of the gamelan are mythological. The god Sang Hyang Guru made the first gong as a signal to call the other gods. As the messages became more complex more gongs were made. From these pitches the first gamelan set was made in the Javanese year 167 (230 A.D.) Historically it appears that the gamelan
began as a sparse musical accompaniment for poetry. It had few of the instruments or practices in modern gamelan. From this the orchestra developed over time. It continues to develop to this day. Sorrell points out that at the time of Debussy the Balinese gong kebyar had not yet been invented (Sorrell 1990:44). Furthermore, it appears that the greatest source of innovation in this music is not westerners, like me, but Indonesians (Sorrell 1990:12-13).

The motto of the nation of Indonesia is "Unity in Diversity". The gamelan is a perfect example of this idea. For example, there are two tuning systems used in gamelan music. There is a seven note scale called pelog and a five note scale called slendro. While these two scales are the commonly used ones there is no standard tuning. Each gamelan orchestra has its own distinctive intervalic structure, called embat, that is greatly appreciated by aficionados of the music (Sorrell 1990:56). The instrumentation has certain standards but each group has its own eccentricities.

The Indonesian aesthetic of the music contrasts sharply with western notions of development and form. Jaap Kunst, one of the best known western scholars of gamelan music, comments, "Javanese music is not becoming but being... Javanese music is static, modern-European music is dynamic. The music is aimless in the better sense of the word" (Kunst p.120). The more recent writings by Sorrell contain statements by Indonesians of the same idea: "The highest form of beauty is stillness." "The best music comes without cause". (Sorrell 1990:18) The aesthetic
of stillness and refinement will be discussed in more detail in the discussion of the Panji cycle of Topeng Cirbon.

Now that history and some of the musical ideas have been covered the instruments will be discussed. Photos of a gamelan in Indonesia are provided to aid the understanding of the instruments. Note the limited scope of the gamelan at UNT.

The first group of instruments is the colotomic or phrase marking instruments. They could be thought of as rhythmic accompaniment to the other instruments.

Perhaps the most striking feature of the orchestra is the set of gongs. The largest gong, gong ageng, generally measures around 90 cm in diameter. It is treated as a sacred object. Offerings of incense and flowers are made to the spirits that live in and around the gong ageng. It is hung vertically in a rack with the smaller gongs, called kempul. There generally is one gong for each tone of the two scales. In the North Texas orchestra these are recreated with sheets of aluminum siding suspended over resonating tubes made from particle board (photos 1 & 2). The gongs are all played by a single musician using a stick padded with felt or cloth.

The kenong and kethuk are both played by a single musician. The kenong is a small gong resting horizontally on ropes across a wooden frame. It is played with a wooden hammer. The kethuk looks like a small kenong but unlike the other bronze instruments in the orchestra it has a short, dead tone. The North Texas orchestra lacks the kenong and uses an extra gong from the bonang to play the kethuk part (photo 3 & 4).
The Kempyang is a small set of kenong-like gongs tuned to the same pitch if playing in slendro or two close pitches if playing in pelog. It is played with two hammers like the ones used on the kenong. The Kempyang is only used in certain pieces. It is missing from the North Texas orchestra (photo 4).

The next group of instruments are those which, in traditional music, play the balungan. These are the loudest and most prominent instruments in the orchestra. They consist of metal bars, usually bronze, over a wooden trough. The saron comes in three sizes differing by one octave in pitch. The largest and lowest in pitch is called the saron demung. The next largest and most common is the saron barung. Both of these are played with wooden mallets. The highest in pitch and most prominent instrument of these three is the saron panerus. It is also called the peking. It is played with a mallet made from a buffalo horn. As it is fairly new to the orchestra there is no standardized way of playing this instrument. Only the panerus and the barung are in the North Texas orchestra. They each are played with a single wooden mallet. The performer must damp after each stroke by pinching the key with the free hand (photos 5, 2, 6).

The slenthem and gender are similar to the saron in that they consist of metal bars but differ in having a resonator for each key. Both are played with a padded disk in the end of a stick and because of this are quieter than the saron with its hard mallets. The gender has two octaves of keys and is played with two mallets. Because of this the gender can perform solo
repertoire successfully. The performer must simultaneously hit a key and damp the preceding one. The slenthem is in the North Texas Gamelan but the gender is missing (photos 7 & 8).

The bonang are ornamenting instruments. They play interlocking parts derived from the balungan. The bonang consist of a double row of bronze kettles. These rest on a horizontal frame. There are two sizes used. The larger is called the bonang barung and the smaller is called the bonang panerus. Both are played with sticks bound with cord. These are both present in the gamelan at North Texas (photos 9 & 10).

The ensemble is led by the drummer. The drummer plays a double headed wooden drum called the kendhang. It is played with the hand except in certain instances, like the Topeng Cirbon discussed below, where sticks are used (photo 11).

The other instruments are not included in the gamelan at North Texas. These are the only ones not made of bronze and are also more difficult to play. The gambang is a hard wood xylophone played with two long sticks (photo 12). The celempung and its smaller version called the siter are zithers with coffin shaped resonators. They are plucked with the thumbnails. Both instruments have 26 strings tuned in pairs (photo 13). Another stringed instrument is the rebab. It is a two stringed spiked fiddle. The body is made of wood, traditionally a coconut shell, and is covered with a skin like the banjo. The most challenging part of the rebab is keeping the right tension on the bow. Unlike the western bow, it is kept loose and is tensioned by the thumb (photo 14). The suling is a bamboo flute played
The last group to be mentioned is the voice. Often there is a group of three or four male singers called gegerongan and a female singer called the pesindhen. The pesindhen was traditionally simply another part of the texture but has become more prominent due to western influence (Lindsey 9-21 1979 and Sorrell 28-54 1990).

**Performance Practice**

At the center of gamelan music is the balungan. Western theorists call it the nuclear melody. This idea is useful in comprehending the structure of the music. Each performer must learn the balungan and be able to derive his part from it. Written notation is used only in the learning process, never in performance. A brief discussion of how this is done follows, however as stated above, actual practice is remarkably diverse and this discussion will be far from complete. I will center on the concepts of greatest relevance to my piece.

The balungan of my piece could be written in one commonly used notation as:

```
1 7) 5 6) 4 5) 6 (2)
3 3) 2 1) 7 6) 5 (3)
2 3) 1 6) 5 4) 2 (3)
5 3) 2 2) 1 7) 6 (3)
4 5) 6 2) 3 3) 1 (2)
```

The numbers represent the scale tones just as letters are used in western music. This work is in the seven note pelog scale. In traditional gamelan music the balungan would be played by the five balungan instruments in unison. This part would
be played by two saron barung, one demung, one peking and the
slentuhem. Each of these instruments has a range of about one
octave so the balungan is limited to this range.

The peking often plays a variation of this part. The notes
of the balungan are grouped into pairs and the peking plays two
notes to every one of the balungan. The first few notes would
look like this:

peking 1 1 7 7 1 1 7 7 1 1 6 6 5 5 6 6 5 5
bal. 1 7 5 6

The next part is the colotomic structure. The gongs are the
only punctuating instruments used in my work. The part is one
of the least technically demanding but one false stroke could
destroy the piece so a veteran of the music generally plays this
part. At the end of each cycle the gong ageng is played. The
parenthesis show where the other, smaller gongs play. At the
final stroke of each cycle the gong ageng is played in
combination with the smaller gong of the appropriate balungan
pitch. This is much simpler than the phrase marking in
traditional gamelan music. The small size of the UNT orchestra
is responsible for this.

The last group of pitched instruments is the bonang. They
are responsible for embellishment of the balungan. The other
embellishment instruments, including rebab, suling, sitar and
voice, are lacking from the North Texas gamelan and will not be
covered. In one form of ornamentation, gambyang, the two bonang
play interlocking parts in octaves. The panerus plays twice as
fast and off the beat. The beginning of my piece would look like this:

B.P. \[ \text{7} \quad \text{7} \quad \text{7} \quad \text{6} \quad \text{6} \quad \text{6} \]

B.B. \[ \text{7} \quad \text{7} \quad \text{6} \quad \text{6} \]

bal. \[ \text{1} \quad \text{7} \quad \text{5} \quad \text{6} \]

There are other forms of ornamentation but this is the closest, conceptually, to the bonang parts in my work (Sorrell chapter 5).

The last instrument used in the kendhang or drum. The drummer leads the ensemble. In traditional gamelan music the music moves to different iramas. This has been roughly translated as tempo. When the tempo slows, as guided by the drummer, the ornamentation becomes more complex. There is an expansion and contraction of the tempo because of this. The pulse of the balungan slows but the instruments playing it switch to parts much like the peking part discussed above. The bonang often play other forms of embellishment that are more elaborate. Indonesian musicians compare this to the blossoming of a flower. In my work the kendhang helps keep the parts together in the first section. It functions almost as a metronome for the saron players. In the second section it pushes the ensemble out of control by steadily increasing the tempo.

Now that the resources of the gamelan have been discussed I would like to mention my first experience with a gamelan orchestra.
What follows is a small digression about the first gamelan I ever saw in person. It is important as it raises several important points about relations between music and dance, the traditional performance setting and the aesthetic discussed earlier.

In my sophomore year at UNT a touring group from Cirbon in western Java came through town. The concert was part of a 18-month Festival of Indonesia here in the United States. The ensemble performed at the TWU Margo Jones concert hall. I was struck by the music and the dancers. Every motion and every sound was a carefully refined work.

The dance was Topeng Cirbon, a masked dance from western Java. A single dancer (dalang topeng) wears several masks (kedok) in succession and is assisted by a clown (bodor) and a narrator (pamatang). The dance is accompanied by a gamelan orchestra. This cycle of dances can be performed at weddings, funerals, circumcisions or to celebrate a pregnancy. A typical performance would begin at 9 a.m. and end at 5:30 p.m. In adapting this for western audiences the dances were cut down so the whole cycle lasts only about two hours and it takes place on a stage rather than on the ground in open air as in Java.

I keep referring to the cycle of dances and should perhaps discuss the cycle. The cycle is made up of character sketches. A performance opens with the dalang putting on his or her costume while the orchestra plays what functions as an overture. the talu. After this piece the first music for dance
is played while the dalang sits with his back to the audience, prays and burns incense over a tray of offerings. The dalang then rises and begins to dance with his back to the audience for a while. This "while" was of course much shorter in the "Americanized" version I saw than it would be in a traditional setting. The dancer then puts on the first mask.

Each of the character sketches represents an important figure from Javanese legend but the details, while they would be known by a Javanese crowd, are not important. The important thing in the cycle is the moving from the ideal human form of Panji with his pure, devout heart represented by the white mask and his tightly controlled motions, to the fifth character, Klana an ogre king, with his dark red mask and energetic dancing symbolizing unrestrained passions. For the westerner evil seems to be the conclusion. Evil seems to prevail. The lead dancer of the ensemble states in the program notes that this perception was incorrect. For him it is a cycle. Every Klana is followed by the Panji of the next performance.

The typical Topeng orchestra uses all the instruments described above in the slendro tuning(five note). A pelog (seven-note) gamelan can also be used. The gamelan of Cirbon has instruments unique to the region : the jenglong, a set of kettle gongs one octave lower than the kenong, There is a transverse flute. The orchestra is led by the drummer playing four gendang piled on a stand and played with sticks.

The drummer is very important as the intermediary between the dancer and the musicians. Each dance is made up of a series of
fixed sections each with its own movement vocabulary (jogedan).
The dalang can repeat these sections or the transitions between
them at will. The drummer then transmits this to the other
musicians by way of set patterns.

This was my first exposure to gamelan up close. The day
after the concert there was an open workshop where the performers
were available for informal question and answer sessions, and the
students were allowed to play the instruments.

taken from program notes: Topeng Cirbon, masked dance of West
Java, presented by the University of North Texas Fine Arts
Bal. Pulse = 1'

In the fall of 1993 Dr. Steven Friedson announced that there was an opportunity to compose for the gamelan. After much work and a box or so of chalk I completed Bal. Pulse = 1'. The title comes from the note to myself at the top of my drafting score. I needed a large space to work and so I used the front porch and a box of chalk. The pulse of the balungan was to the scale of one foot.

Rehearsals went slowly at first because of the difficult nuclear melody I had written. It was more a process than a melody. The work is a statement of ideas and these ideas produced a melody full of irregularities. Once this difficulty was surmounted there was the problem of sections, like the bonang panerus in the second section, that were too difficult for the performer to execute accurately. I was aware of the unplayability of certain parts. To get the sound I desired and to express the idea of the work the tension caused by this difficulty was necessary.

The work opens with an introduction called a buka played by the two bonangs. The slenthem, two sarons and the peking play the balungan through one cycle together. The sarons break off in the second cycle to play a canon with the slenthem. One saron anticipates each slenthem note by an up-beat and the other follows each slenthem note by an up-beat. This of course creates
great tension as often the notes of the two saron clash with each other. The bonang parts play an interlocking 6/8 rhythm that I claim to have appropriated from Irish jigs. The kendhang plays the triple rhythm with one hand and the duple rhythm of the saron and slenthem with the other hand to help keep everyone together.

The second section is sharply differentiated from the first by the sudden reduction in the number of instruments playing. At the beginning of this section both saron and the bonang barung drop out. Gradually they are added back as the tempo increases. The saron enter in fugue with the slenthem. As the tuning of the orchestra is not given to functional harmony this fugal action has more to do with the work of twentieth century composers like Webern than the baroque composers. The tempo builds until the work seems to be out of control. The music seems to be consuming itself in a fit of entropy. The structure of the gongs remains intact but the other instruments easily get lost. The bonang barung enters as if it were the elemental substance from which the work was formed being boiled off and released. This part is a solo that allows a small degree of freedom. The materials provided for this improvisation are the materials that the work is built upon so the analogy to alchemy is appropriate. The work clangs to a halt signaled by the ringing of the bonang barung.

I mentioned the ease of players getting lost in the second section of this piece. It is necessary to justify this to those schooled in western classical music traditions. It is not a lack of ability on the part of the player or me that causes this to
happen. The idea of a system in decay requires this sort of breakdown. Like *Les Mouton de Panurge* by Rzewski Bal. Pulse = 1' needs the performers to get lost. If pressed I might claim that it is only a lack of ability that makes performers afraid of getting lost.

This is one of the great failure of music education in the West. Getting lost is a great taboo. Sometimes it is dangerous but in this work it is expected. The first performance went rather badly because of this fear. Once I explained that the piece was about the breakdown of a system and that getting lost was acceptable and perhaps even desirable everything went well.

In searching for fitting analogies to describe the music I have made, I am reminded of an aging victrola in my mother's house that, through years of abuse by certain children who will remain nameless to protect them, did not work properly. At first it would play at the right speed. Soon, however, the spring would lose control and Caruso would become an alto, then a soprano and finally disappear into a high squeak. Consider also a clock or a music box that has been wound too tightly too many times.

In telling these stories I am not making programmatic assertions about my work. A careful listener might just find the "naughty children winding the victrola" subject or the "erratic appearance of the coo coo" theme. These are perfectly acceptable and are really more fun than old school analysis, but I did not put them there. They crept in on their own.

The performance on the tape is from the March 28, 1994 percussion recital at North Texas. For this concert the number
of repetitions was cut due to time constraints. The differences between the score and the recording stem from these changes.

Bal. Pulse = 1' is dedicated to Dr. Steven Friedson and the members of the UNT gamelan ensemble with many thanks for the hard work, creative input and trust in me.
Bal. = 1'
Pulse

Kevin Murphy 1994

Pelog

Pelog pulse = ca. 75 & loud

saron I plays the balungan with the slenthem for the first three times through section A and then switches to the notated line. Play this part in the first time through section B switching on the second time through to the notated part. As the tempo is roughly half the A section tempo two notes should be played in the place of one.

saron II plays with the slenthem for the first four times through section A. It then switches to the notated part and plays this to the third time through the B section. At this point observe the notated part.

kendhung plays through the entire A section and cues the deceleration in the fifth time through. Tacit for the first time through B entering at the beginning of the second time through to cue the accelerandos in the rest of the piece. Play to the end.

Buka: bonang panerus .313 .113 33

bonang .175 .161 22

A

Buka bonang panerus .313 .113 33

bonang .175 .161 22

A

bonang p .7.7.6.6.6.6.6.6.6.6.6.6.6.5.5.5.5.5.2.2.2.2.2.2.2.3.3.3

bonang 2.2.2.7.7.7.7.7.6.6.6.6.6.6.6.6.6.6.6.6.5.5.5.5.5.2.2.2.2

saronI 7 5 6 4 5 6 2 3

saronII 1 7 5 6 4 5 6 2

slenthem 1 7) 5 6) 4 5) 6 (2)

bonang p .3.3.3.1.1.1.1.1.1.6.6.6.6.6.6.6.3.3.3.3.3.3.3.3

bonang 2.2.2.3.3.3.3.3.3.1.1.1.1.1.1.1.1.6.6.6.6.6.6.6.3.3.3

saron I 3 2 1 7 6 5 3 2

saron II 3 3 2 1 7 6 5 3

( )
B

pulse = ca. 43-50 & soft repeats 1 & 2; 55-73 & crescendo repeat 3; 79-95 & crescendo repeat 4; 100-107 & crescendo repeat 5 to end.
bonang p.  .3 3 2.3 2 1.2 1 7. 1 7 6.7 6 5.6 5 3.5 3 2
       .6 7 1.7 1 2.1 2 2.2 2 3.2 3 5.3 5 3.5 3 2
saron I  5 6  3  3 2 1 7
saron II  1 7 5 5 4 5
slenthem 3 3) 2 1) 7 6) 5 3)

bonang p.  .2 3 1.3 1 6.1 6 5.6 5 4.5 4 2.4 3 2.2 3 5.3 5 3.
       .2 4 5.4 5 6.5 6 1.6 1 3.1 3 2.3 2 3.2 3 5.3 5 6.
saron I  6 5  3  2 3 1 6 5
saron II  2 3 2 7 6
slenthem 2 3) 1 6) 5 4) 2 (3)

bonang p.  .5 3 2.3 2 2.2 2 1.2 1 7.1 7 6.7 6 3.6 3 4.3 4 5.
       .5 6 7.6 7 1.7 1 2.1 2 3.2 3 3.3 3 2.3 2 6.2 6 5.
saron I  4 3  5  3 2 2 1
saron II  3 3  6 5 4
slenthem 5 3) 2 2) 1 7) 6 3)

bonang p.  .4 5 6.5 6 2.6 2 3.2 3 3.3 3 1.3 1 2.1 2 122 1 7.
       .6 5 4.5 4 6.4 6 5.6 5 7.5 7 1.2 1 3.1 3 332 1 3.
saron I  7 3  4  5 6 3 2
saron II  2 2  1 7 6 2
slenthem 4 5) 6 2) 3 3) 1 (2)

bonang for 6th repeat to end: recombine following fragments to produce part. Bonang should be separate from the other parts. Bonang part should merely be played as fast as possible. When the material is exhausted, end should be signaled with four octave "2"s played at the balugan pulse. It is preferable for the last cycle to not be completed. All stop at the last blow and let ring

.361 .117
1..2 25..
Songs (Ageng and Suwukan) and Kempuls

Photo 1

Kethuk and Kempvane

Photo 4
Bonang

Photo 10
Tree Kendhangs (playing Ciblon)

Gambang

Rebab

Photos 11, 12, 13, 14, 15

Photo 11

Photo 12

Photo 13

Photo 14

Photo 15
Bibliography

