

SCORE

Trimbat by Ida Bagus Made Widnyana

by Andrew McGraw

What draws each of us to music — the allure of music — may partly be that it can be studied and experienced both as a complex manifestation of essentially simpler underlying structures: dyads, contours etc., and as a simplification of more complex phenomena. When describing for a Balinese musician/priest the kinds of musical analysis done in the Western academy — that often our analysis aims to reduce so-called “surface information” in order to reveal fundamental structures — the Balinese reacted as you might guess a Hindu priest would, recalling an episode of the Hindu Mahabharata epic: *When presented at the court of his enemies, Krisna’s identity was questioned. “Why should we believe,” the king asked, “that you are the famous Krisna or indeed that Krisna is an avatar of Visnu?” Krisna then replied: “So be it, I will then reveal to you my true form.” Those at the court then knew Krisna to be as he claimed. He was all time and space, all forms ever manifested, every feeling and thought that has ever been and that ever will be expressed. Experiencing this for only a split-second those at the court began to go mad. Visnu in its ultimate form, that is brahman (not to be confused with Brahma or brahmana), is not in the universe, the universe is within it. Therefore its true form is not intelligible to humans. It can only be expressed or manifested through more simple phenomena, like Krisna. Likewise music can sometimes be thought of as a simplification for human reception of the much more complicated sounds, noises, and vibrations that we hear and experience in our lives. Only the gods can hear all of these vibrations as music.* (personal communication, Gusti Sudarta, January, 2005).

Keeping this story in mind, I wish to discuss Ida Bagus Made Widnyana’s *Trimbat*, created for his final recital at STSI Denpasar. This was one of the most innovative and rigorously constructed and rehearsed pieces of *musik kontemporer* I encountered during my research in Indonesia. Widnyana succeeded in creating an extremely complex and idiosyncratic composition while

rooting the entire work squarely in Balinese tradition and traditional repertoires.

“*Trimbat*” is a conflation of the Balinese *tri* (three) and *embat* (tuning, or range). Widnyana combined *gamelan* instruments from three ensembles, each a five-tone *selisir pélog gamelan* tuned to different ranges and with a unique intervallic structure. The lowest set was a *gong gede* ensemble from the village of Tulikup in Eastern Gianyar, the middle set from the *gong kebyar* at Pengosekan and the highest set of instruments from a *pelegongan* ensemble in Ubud. Widnyana used only the *jegogan* and *calung* pairs from each gamelan, plus three gongs, for a total of 15 instruments and 13 players. The distance between the lowest *jegogan* and the highest was roughly a minor third; Widnyana was able to produce 11 pitches per octave through a combination of the instruments.

The following shows roughly where each “pitch” (set-pair) lies in relation to the equal tempered scale. This is also the pitch scheme I use in my notations of *Trimbat*.

Saih Cenik: Highest Gamelan, Pelegongan Ubud.

Key #	Syllable	Transcription Pitch
1	Ding	D#
2	Dong	E
3	Deng	F#
4	Dung	A#
5	Dang	B

Saih Madya: Middle Gamelan, Gong Kebyar Pengosekan.

Key #	Syllable	Transcription Pitch
1	Ding	D
2	Dong	E-Flat
3	Deng	F
4	Dung	A
5	Dang	B-Flat

Saih Gede: Lowest Gamelan, Gong Gede Tulikup.

Key #	Syllable	Transcription Pitch
1	Ding	B
2	Dong	C#
3	Deng	E-Flat
4	Dung	F#
5	Dang	G

(Actually, considering that the instruments were paired and that jegogan pairs often sound as far as a 1/4 (equally tempered) step or more apart, Widnyana had access to 22 pitches per octave. He chose to maintain, however, the traditional Balinese practice of always playing paired pitches together as one, rather than melodically exploring these even smaller intervallic units.)

Balinese gamelan ensembles have not historically been tuned to any standard, although today I Wayan Beratha's conception of *pélog saih lima* is hegemonic through his influence at STSI and SMKI. *Saih* generally refers to the range of a *gamelan* and also, sometimes, its unique intervallic arrangement.

According to Widnyana, the inspiration for this highly complex orchestral arrangement springs from traditional Balinese ceremonial practices. For certain very large ceremonies, such as the preparatory ceremonies preceding a priest's cremation, a number of traditional music, dance, and theater groups are brought together, sometimes within a single tightly packed house compound, to perform simultaneously but independently. This is known as a *karya gede*, or the "great work." I have performed in *karya gede* in which two differently tuned *gong kebyar* ensembles, two differently tuned *gender wayang* ensembles, a *slonding*, a *beleganjur*, an *angklung*, and traditional singing were all performed simultaneously within a very small family compound. Acoustically, the result is nearly overwhelming. In order to perform as a single unit during a *karya gede* players sometimes are forced to rely on visual alignment as hearing one's musical neighbor is next to impossible. For me the result was a veritable kaleidoscope of tunings, timbres, and tempos, combining in interesting and unusual ways as I adjusted my aural perception. When I asked my older teachers how they heard such ceremonies they without fail suggested that they continued to hear each *gamelan* as a separate unit, not mixing in the least.

For Widnyana, however, this combination of tunings in the *karya gede* was the inspiration for his orchestration of *Trimbat*. The *karya gede* is music for the gods as only they can hear it as such. In *Trimbat* Widnyana simplified for human reception the overwhelming overfullness of the *karya gede*.

Excerpts

Widnyana opens the work by slowly introducing each of the tones on his three sets of *gamelan*. The opening ascending line introduces each of the *saih cenik* tones, followed by slow melodies on the *saih madya* and *saih gede* instruments. In this way the listener is allowed to slowly become acquainted with the very complex tuning, intervallic and acoustic beating relationships between each of the tones and *gamelan* sets. The melodic contours of these lines aligns the *saih madya* and *saih gede* ensembles together playing, respectively, the same sequence of keys. This arrangement is followed in the faster moving lines at 1:10. The *saih madya* and *saih gede* instruments play the same line, from the perspective of contour and key placement (while not the same pitches). Incidentally, these two bottom lines are the same as the *saih cenik* melody, here starting on the fourth tone (*deng*). After slowly sounding each of the tones Widnyana finally presents the inevitable combination of all tones [1:26], as the ascending *ding-dong-deng-dung-dang* of each of the differently tuned *gamelan* are brought together. The result is a thick and gauzy dissonance unlike any texture found in any traditional Balinese musical setting, excepting the *karya gede*.

Looking strictly at the score and imagining a quantization of pitches into equal temperament, we see a very dissonant and complicated series of harmonies at 1:26, a series of tri-chords in parallel motion — a root below both major and minor thirds. However, with the paired tunings and slightly "out-of-tune" (F# and D#) enharmonic tones, the aural reality is much more complicated and dissonant.

At 1:38 Widnyana sequences two-note pairs through each of the three sets of *calung* instruments. The complexity in *Trimbat* often resides at points in which Widnyana breaks his own rules of form and logic that he establishes within the work, as in the single rhythmic exception within this section when the fifth sixteenth note overlaps the previous motif. The result gives the selection an unbalanced rhythmic feel and sweeps from under the listener's feet moments of otherwise rhythmic or melodic comfort and predictability. The selection gives a sense of continuous rise through the pitch spectrum of the *gamelan*, sounding like an infinite

tone loop, or sounding in the way a barber's pole looks to be rising continuously to the sky.

At 2:01 Widnyana presents melodies which resemble traditional Balinese forms; in even 4-bar phrases in *saut-menyaut*, question-answer, forms. Following this Widnyana explores the pitch relationship between pitches that are represented in the score as being the same (primarily F# and D#). That is, *dung saih gede* with *deng saih cenik* (f#) and *ding saih gede* with *dang saih cenik* (B-b, in lower and higher octaves).

During the process of composing *Trimbat*, Widnyana explored the relationship of his *gamelan* tunings and the tempered keyboard, attempting to find similarities and differences. The section at 2:38 represents an aesthetic challenge to the tempered tuning system; Widnyana actively explores exactly that which is beyond Western notation's capacity to capture and represent. The listener is left to relish the complexity of the tuning relationships and beating differences.

Widnyana then explores the capacity of one *gamelan* tuning to shade that of another. The listener encounters only the high and sweet *saih cenik* tuning for several seconds until 2:58 when the melody veers into the *saih gede* instruments at which point a sense of five-tone 296 *selisir* is lost. The *selisir* of the *saih gede* is interpreted, by way of a kind of backwards attention vector, in terms of the *saih cenik* tuning to sound, according to Widnyana, like a "*pélog miring*" ("out-of-tune" *pélog*) tuning.

Following this at 3:12 *saih gede* and *saih madya* tunings are used in combination to create a mode impossible on seven-tone *pélog* ensembles. Here *saih madya* pitches *dong-deng-dung-dang* (C#-E flat-f#-G) are combined with the *saih madya deng* (F) to create a new five tone mode, more chromatic than possible in *pélog*.

Eventually the sense of five-tone *pélog selisir* is re-established on the *saih madya* instruments at 3:24.

At 3:43 the previous *saih cenik* melody first presented at 2:10 is played along with the following *saih gede* and *saih madya* lines. The combination results in complex harmonic lines, often in three part harmony. While a standard Western harmonic analysis is not possible on this selection, it is notable the extent to which Widnyana explores, like his Cudamani colleague

Suparta (who performed for Widnyana's work), non-standard two and three part harmonies. The b major triad dominates the tonality of this section, and to this Western listener sometimes functions as a tonic center. B is the lowest pitch of the three ensembles, being key one-*ding* on the *saih gede* instruments. D and f natural are present in the higher tunings, b diminished and minor triads are also present. The seventh bar of the selection is especially dense harmonically: d# minor, f# minor 7, b minor followed by a b-aa# cluster. The sense of harmonic motion to a center is strengthened by the final chord, a b major chord in second inversion.

Like Suparta, Widnyana has not formally studied Western harmonic principles and was not thinking in these analytical terms when creating this selection. No strict harmonic principles were employed, as can be seen from the fact that each of the previous solo lines are repeated literally when in combination, creating at moments comparatively thin two-note 297 minor second harmonies. Clearly, Widnyana was approaching this selection from the perspective of density and texture rather than (Western) harmony. (It was almost impossible, however, for me and the several other Western musicians who occasionally watched Widnyana's rehearsals at Cudamani not to hear this selection in Western harmonic terms. Clearly, our ears quantized the pitch information into tempered tuning and imagined simple harmonic structures that were in fact acoustically much more complicated. One listener described this selection as sounding like "some sort of chthonic organ.")

The selection is appended by statements and arpeggiations of a major E-flat triad, first played in textures reminiscent of church organ chords and articulation (4:12 and 4:19) followed by rhythmic permutations of the arpeggiation between the *calung* — each pair sounding one of the three pitches. This is ended by a cadential-sounding E-flat major, b diminished, E-flat major sequence.

The following section represents Widnyana's effort to reconcile traditional Balinese styles within his unique experimental ensemble. The *gamelan slonding* style is the primary topic referenced, although at times *leluangan* and *kebyar* are also hinted at. Widnyana explores more traditional *kotekan* forms, dividing *polos* and

sangsih pairs between the *gamelan* so that in one instance the *saih gede* ensemble plays the *polos* for the *saih cenik's* *sangsih* while the *pokok* is held on the *saih madya*.

The section between 4:29-5:06 is played three times. Here the orchestration is similar to traditional *kreasi kebyar* textures in which the lower instruments (here the *jegogan*) perform a simpler abstracted melody below higher sounding instruments (here the *calung*) which play elaborated interlocking patterns and melodies. Widnyana explores the material thoroughly through each repetition. The second iteration is performed much more slowly, quietly, and deliberately, as if to allow the listener an “insiders” slow-motion view of the complicated interlocking and modal construction of the section before resuming it again at normal speed.

The following section at 6:21 is more clearly influenced by *slonding* forms, however this too is manipulated and transformed. While in *slonding* the lower *jegogan* instruments play repetitive oddly shaped phrases and the higher *saron* play interlocking patterns; this orchestration is turned upside down here. The *slonding* motif is continued and developed between 7:16-9:20 in which a slower moving section is repeated, again, three times. The orchestration is more abstract and experimental than in the previous section.

Beginning at 9:20 Widnyana leaves behind traditional Balinese musical models, retaining only Balinese musics’ traditional focus on interlocking patterns. Here the concept of five, six or seven tone modes is abandoned as all pitches are used equally. The exploration here is in terms of rhythmic and phrase form. Following the introduction of a complex theme discussed below, Widnyana sequences a short melody through each of the keysets, withholding any sense of mode or modal center. This is followed by a melody which clothes a complicated polyrhythm performed on the *gongs* in which the *gong cenik* plays every eight tones, the *gong madya* every five tones and the *gong gede* every three tones. This polyrhythm was composed first; later the melody which covers it at 9:24 was composed around it. Each tone coincides rhythmically with its respective *gong* tone; harmonic tones are then added to thicken the texture. Harmonically the passage includes several instance of triadic

harmony interspersed with close and dissonant clusters, vaguely recalling the music of such composers as Cowell or even Takemitsu, whose music Widnyana has never heard. At 9:37 Widnyana strips away the melodic instruments revealing the deeply rumbling and scarcely intelligible *gong* polyrhythm beneath. This is followed at 10:13 by a faster melody more typical of standard *kreasi kebyar* textures.

At 11:22 Widnyana introduces a feeling of complete chaos: thick and seemingly random harmonies, textures and rhythms meant to give the listener the impression that the whole improbable construction has finally fallen in on itself. Here it sounds as if the musicians have become hopelessly lost amid the sonic confusion. Then, the sloppy and fractured phrase is played a second time *exactly* the same way. The passage eludes Western notation’s ability to represent rhythmically complex phenomena and recalls the rigorous rehearsal and orchestration of chaos achieved in such rare ensembles as Captain Beefheart’s band of the late 1960s.

At 11:38 Widnyana again takes up the linear theme introduced in the beginning of the repeated section above, cycling through each of the keys of the instruments: 1-sc,1-sm,1-sg (3x): 2-sc, 2-sm, 2-sg (3x) etc. (sc, sm, sg referring to *saih cenik*, *saih madya* and *saih gede*) giving the sense of a rising series of ascending chromatic cells. However, the pattern is more complicated than this. Looking at the longer individual key patterns of any one set of instruments the patterns is: 11122233555666 etc. or 3 notes, 3 notes, 2 notes, 3 notes; a pattern of 11 tones. This 3-3-2-3 pattern is cycled throughout the keyset of each *gamelan* with each starting at a different place in the pattern, a kind of phrase canon. Given that the odd numbers five and eleven do not have a common multiple before 55, the pattern for a single set of instruments is long and complex: 11122233555666111222333555666 11222333555666, i.e., four times through the *calung* range. This pattern is performed by each of the *gamelan* in a 3 (*gamelan*) against 4 (pulses per beat) phrasing. The melodic/rhythmic polyrhythm then amounts to 3:4:11. In its first iteration at 9:20 the phrase is performed only once, and so the longer polyrhythmic implications are not felt. It is not until later, at 11:40, that the phrase is played

further, but not to its logical conclusion. Here the 4:3 counter-rhythm is highlighted by the *jegogan* playing 1-2-3-5-6 in unison resulting in dissonant clusters banged out at the half note level, thus expanding the polyrhythm to 165 tones against 40(80x5) tones of the *jegogan* pattern. The result is a wall of sound, an incredibly complex form that somehow, through the sheer virtuosity and energy of the very young players, is still exciting and listenable.

Widnyana’s music is very complex, but infused with the irresistible bravado and fire of youth (some players were as young as 13 years old).

The total polyrhythm theoretically involves the combination of:

55 tones [per] *calung* cycle
 $(5 \times (3+3+2+3) = 11 \times 5 \text{ keys})$
 x 3 (sets of gamelan) = 165

against

40 tones [per] *jegogan* cycle (8 notes x 5 keys)
 (at the half note level).

To compute when these two patterns first coincide we use a basic mathematical procedure. We “prime factor” 165 and 40 to find the lowest common denominator.

Tenor cycle: $165/5=33/11/3 \ 5 \times 11 \times 3$

Bass cycle: $40/5=8/2=4/2=2 \ 5 \times 2(\text{cubed})$

We then multiply the prime factors:

$5 \times 11 \times 3 \times 2(\text{cubed})=1320 \text{ tones (16th notes)}$

Resulting in

8 iterations of the *calung* cycle

330 pulses (quarter notes)

33 iterations of the *jegogan* cycle.

Widnyana worked closely with the ISI *karawitan* faculty member Arnawa in developing this section of his work. Arnawa studied for his masters in composition at STSI Solo with the German composer Dieter Mack. Mack reports that while in Solo he regularly discussed the mathematical approach to composition and the incorporation of the Fibonacci series. Arnawa’s *musik kontemporer* works have focused on translating the mathematical aspects of the Balinese *pengidur bhuana* concept into music. Incidentally, the numbers 5, 8, and 55, each important numbers within the Fibonacci series, are central elements in Widnyana’s polyrhythm.

Inspired by both the baroquely complex symbols of Balinese Hinduism and ancient Javanese and Balinese calendars — with their intersecting seven, five, and three day weeks, and the convergences of these calendar days with important moments in the Lunar and Gregorian calendars — Widnyana is referencing the deep roots of Balinese tradition in a completely experimental musical treatment. Had this polyrhythm continued to its logical conclusion, given that 110 beats [per] minute is the average tempo, it would theoretically take nearly three minutes for the total pattern to be performed (a fourth of the total work). And certainly, if we as an audience had to experience the whole polyrhythm, we would, like those courtiers witnessing Krisna’s true form, likely start to go mad. ■

Beat	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
<i>calung</i> sc		1	1	2	2	2	3	3	3	5	5	6	6	6	1	1
<i>calung</i> sm	1	1	1	2	2	3	3	3	5	5	5	6	6	6	1	1
<i>calung</i> sg	1	1	1	2	2	2	3	3	5	5	5	6	6	6	6	1
<i>jegogan</i> sc	1			2			3			5		6			1	
<i>jegogan</i> sm	1			2			3			5		6			1	
<i>jegogan</i> sg	1			2			3			5		6			1	

Polyrhythm excerpt from Trimbat (11:40)

Trimbat

(excerpts)

by Ida Bagus Made Widnyana

0:00

A Largo

Saih Cenik
Saih Maadya
Saih Grede

1:38

2:02

B

mf

Cakung

138

23
S.C.
S.M.
S.G.
Cahung

26
S.C.
S.G.
Cahung

34
S.C.
S.M.
S.G.
Cahung

40
S.M.
S.C.
S.G.

46
S.C.
S.M.
S.G.

51
S.M.
S.C.
S.G.

57
S.M.
S.C.
S.G.

67
S.C.
S.M.
S.G.

71
S.C.
S.M.
S.G.

75
S.C.
S.M.
S.G.

79
S.C.
S.M.
S.G.

83
S.C.
S.M.
S.G.

4:12

Colong change to hard mallets

(agogogon) (edging) (Both)

9:20 C

ff

2ndx loud
2nd repetition 1x, continue to bar 90

89

S.C.
S.M.
S.G.

Gongs
mp

90

S.M.
S.C.

f

92

S.C.
S.M.
S.G.

2ndx repeat to C

95

S.C.
S.M.
S.G.

1st x ff, 2nd x pp

11:24

96

S.C.
S.M.
S.G.

98

S.C.
S.M.
S.G.

99

S.C.
S.M.
S.G.

100

11:39

Pattern continues...

S.C.
S.M.
S.G.
21
21
21

mf

12:20

1-68

S.C.
S.M.
S.G.

mf