Chapter 5 - Gambang ensembles of Bali and Banyuwangi

Introduction

On entering the east of East Java and the island of Bali ensembles of *gambang* proliferate. There are marginal examples of *gambang* ensembles in Sunda (the *calung* ensembles) and Banyumas (*calung Banyumas)*, but in the Bali/Banyuwangi region *gambang* are primarily found in ensemble, and in Bali solo *gambang* is extremely rare. These instruments tend to have bamboo tubes for keys, with the exception of the East Balinese *gamelan gambang*, which uses thick bamboo slats, as do some Madurese instruments[38]. The bamboo ensembles of West Bali and Banyuwangi are further united in common terminologies, playing patterns and instrument construction, just as the provinces of Banyuwangi and West Bali are united by intermarriage and constant traffic in trade and tourists. This chapter will examine the *gambang* of Bali and Banyuwangi, their socio-historical background, theory and variation patterns, and analyse a few representative pieces. The diversity of Balinese *gamelan* means that the first part of this chapter will deal with regional variants and the nature of interlocking parts in Balinese music before any informed analysis can take place. The music of Banyuwangi has many of the same features, but has not yet been studied in such depth. It is generally assumed that Banyuwangi derives its musical styles from Bali, but many contemporary Banyuwangians would disagree, and indigenous descriptions are being codified.

The interlocking patterns of both regions appear to be continuous, and causality (where they originated) is hard to determine. Regional identity is established through subtle variations in these interlocking patterns, and the search for motivic phrases and methods concerns both the division of the interlocking parts, and their resultant melodies, which turn out to have features in common with models from Java and Sunda. There is a tendency towards regular and virtuosic decoration in Bali, but towards improvisation in Banyuwangi.

Fig 53: Map of Banyuwangi and Bali

[38] see Body CD "Music of Madura".

The map in fig 57 (close, not exactly, to scale) shows the relative sizes of the two regions, but despite being small, Bali projects a sense of grandeur and attractiveness to tourists not shared by Banyuwangi, which is a huge and prosperous region, relaxed and independent in spirit. The eight regencies[39] of Bali still maintain distinctions in keeping with the Hindu identity of the island. Balinese music reflects a persisting temple tradition. The preservation of ancient traditions has commercial as well as religious implication. Innovation is strongly encouraged within cultural constraints, though this process is not so visible as in Java and Sunda. There is a broad classification of pieces across Bali: *wali,* those pieces only played for the "inner" gods (much *gamelan gambang* is of this nature)*; bebali,* rituals for people in the middle courtyard; and *bali-balian*, more or less secular pieces, though even these have spiritual levels. The West Balinese bamboo traditions may reflect a secular tradition, but at a rehearsal I attended in Tegalcangkring, a priest sprinkled holy water over all instruments and participants (including me) before the full ensemble began rehearsing.

5A: Balinese bamboo *gambang*

In the previous chapters, the music of the wooden-keyed *gambang* has appeared more refined than that of the bamboo *gambang* forms. In Bali all *gambang* forms use bamboo, and the levels of expression are much more concerned with activities ranging from sacred to secular, than with distinctions between folk and art forms, or levels of correctness.

Most *gambang* ensembles of Bali are secular in nature, (though protected religiously) but the *gamelan gambang* is connected with mortuary and cremation (*ngaben*) rituals, temple ceremonies and fertility ceremonies (*Usaba kasa/sumbu*). With this significance, its keys made from thick bamboo slats, and its accompanying pair of metallophones, it belongs to quite a different category to the bamboo tube ensembles: the *tingklik, joged bumbung* and *seni jegog*, which will be examined first. These latter instruments are all made in a similar style to the Sundanese *calung*, though the sizes and qualities are far more varied. The simplest genre is the *slendro*-tuned *tingklik,* generally played in duos, while the *Joged Bumbung* and *Seni Jegog* ensembles may be seen as *gamelan* surrogates taken to a high level of virtuosity. The stands of Balinese *gambang* display little in the way of ornamentation, perhaps surprisingly, since the bronze *gamelan* sets are extensively carved. But there is little wood used in most Balinese bamboo instrument frames, and thus headboards seem to be the most obvious place for decoration - though these usually bear only the name of the group, its lineage and some marginal flourishes. The protected heritage village of Tenganan in East Bali has released a cassette showing highly ornamental headboards with *barong* and flower motifs, but most commercial *tingklik* are still plain and bare, and many *joged bumbung* and *seni jegog* ensembles I visited were simple, apart from the *naga* ornaments (see fig 16, p21).

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[39]It should always be borne in mind that the eight regencies were created by East Javanese Hindu aristocrats who migrated to Bali preserving power and tradition at a time when Islam was becoming predominant in Java.

5A1: The tingklik

Mentioned in Kunst (27 - MiJ) as *grantang,* the *tingklik* or *rindik* is found throughout Bali as a pentatonic bamboo *gambang* with ten to fifteen tubes. Tjokorda Swastika of Ubud[40] claims that it came from Singaraja in North Bali. The bamboo tends to be white to yellow, the tubes are thinner than the corresponding tubes for Sundanese or Banyuwangi instruments, and are played with small bamboo beaters surmounted with disks of tyre offcut or soft wood. The stands for these and many of the following Balinese bamboo instruments are made as a lightweight frame, with the longer tubes protruding under both the front and back rails.

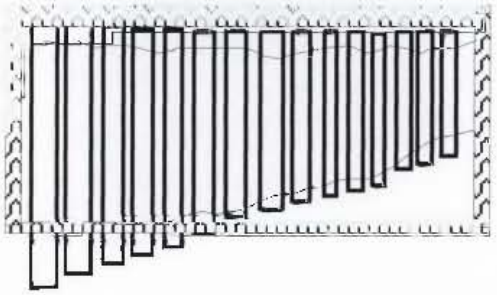

Fig 54: *Tingklik* frame

It is tuned to a *slendro* variant, and reproduced extensively for the tourist market. It may be that most *tingklik* seen and heard near Westerner's lodgings are made to be sold, not played. Those sold as a tourist commodity have 10 or 12 keys, often with one or two very sharp upper notes, perhaps a careless rendition of the traditional practice of sharpening the upper two notes. The front ledge of undercut bamboo is often tapered more than a handspan, a style that is also seen in Banyumas in Java.

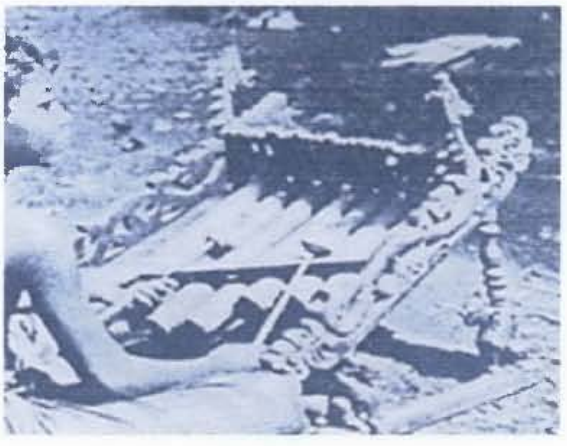

Fig 55: Old Balinese *granttang*

Tingklik duos are commonly seen in hotels and picturesque parts of the village or forest[41]. This is the only example I have seen of *gambang* busking in Java or Bali. The two players may play set parts, perhaps called *wadon* and *lanang* (male/female) like many Balinese instrumental pairs, and

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[40] Personal Communication, Sydney, 2000.

much of the work is improvisational, until a solid idea or piece forms. Some pieces are borrowed from *gender wayang*, which features two 10-keyed instruments played in a complex *kotekan* between the players' right hands, while their lefts play a bass line in unison or in alternation. Other pieces include adaptations of social dance tomes (*joged*) and folk songs. The *gegambangan* and *tingklik* ensembles have a pair of matched *tingklik*, occasionally with a *suling*. A variant from Munduk, North Bali, still uses the old name *granttang*. The construction, however, uses the larger bamboo tubes and modern large and strongly ornamented frame. Notations were taught to Westerners in a numeric system using octave dots (see appendix1- E1b).

5A2: Joged Bumbung

Fig 56: Modern *Joged Bumbung*

The instruments of the *Joged Bumbung* (also *bungbung*) ensemble have emerged from *tingklik* and *grantang*.[42] They have become a whole *gamelan* orchestra in their own right, which is also called *gamelan pejogedan* or *pejogedan bungbung*[43]. Initially associated with *joged*, a young peoples' social dance found across the Indo-Malay archipelago, *joged bumbung* has become a competitive art form, and borrows styles and techniques from many others Balinese genres. It is now a large and loud ensemble, with a variety of tunings and instrumentations. The instruments in the photo above are 11-keyed, and probably tuned to *slendro*, the ensemble comprising four such instruments with drum, flute and gong[44].

An alternative configuration was shown at a rehearsal I attended in Tegal Cangkring, Negara, West Bali (See DVD track 6), where the 13 instruments were:

- *patus pengapit* (leader) and two *pengapit* (mid-range 15-keyed instruments);

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41 Suling (bamboo flute) may also be employed in this ensemble. The Tenganan release "Rindik" uses a variant genre (gegambangan) with two bamboo 15 note slendro xylophones playing kotekan.

42 Tenzer p89.

43 Anderton in Groves.

44 Photo courtesy of Tenzer, who implies the tuning also derives from *tingklik*.

- *patus kancil* (2nd leader) and two *kancil* (soprano 15-keyed instruments);
- *undir* (the bass instrument)

These bamboo instruments were accompanied by:

- *kelituk* (a single gong pot like *ketuk* in Java or *kempli* in Central Bali);
- *kecek/gejek,* (small cymbals on a stand, played rapidly with a pair of cymbals);
- *gupakan wadon* and *lanang* (2 drums/*kendang* - male and female);
- *teng/bem kelentang,* (an iron plate over a pot resonator[45])
- *seruling* (*suling* or flute).

The bamboo tubes (*angklung* style) were suspended in ornate wooden frames with headboards. The yellow bamboo, often a pale creamy colour, was said to be *jajang*. Beaters were of bamboo, the right hand one being a soft wooden disk, similar to that employed in Sunda, and the left hand one being tyre rubber. The *undir* beaters were thick rubber-bound balls, like gong beaters. The tuning of this ensemble was a *pelog* variant, approximately A#-B -C#-E#-F#, named as *deng, nong, nang, di* and *nung*. This series does not fit in with vocable sequences of Balinese *gamelan* documented by McPhee and Schaareman, but is clearly of similar conception.

The mid-range *pengapit*, and their *patus* (leaders) in particular, are the focus of the ensemble, cueing the *gupakan wadon,* (leading drum) *kelituk* (pulse-keeping pot gong) and *gejek* (rapid cymbals. The *undir, gong/bem* and *seruling* are furthest away, and can adjust their parts to subtle shifts of timing without disruption. The timing for the drums, *pengapit* and *kancil* is more critical because of the interlocking parts. Below is the configuration of instruments observed at the rehearsal.

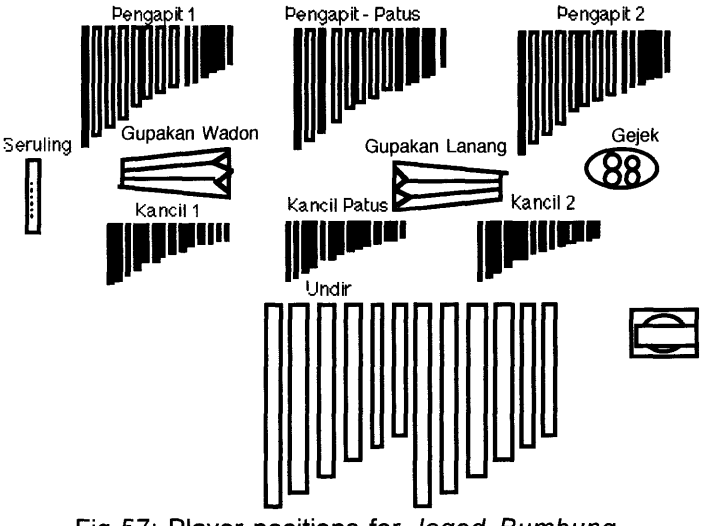

Fig 57: Player positions for *Joged Bumbung*

45 Known as gong *kemodhong* in Java.

5A3: Seni Jegog

Closely related to the Joged Bumbung, the **Seni Jegog** ensemble has the largest bamboo tubes of any *gambang* ensemble I have seen. There are eleven eight-keyed instruments in all, from highest to lowest:

- three *kancil*, the busy high register (like *peking*);
- three *grantang*, one *patus* (leader) and two *pengapit* (seconds), who play the main melodies and give the structural signals, openings and codas;
- two *celuluk*, which follow the *grantang;*
- two *undir* , again, bass instruments;
- one *jegog*, or *Nyong* (?mother), the deep contrabass whose keys range from 2 to 3 metres in length.
- the ensemble is completed by a flute, *seruling* in Balinese, *suling* in Indonesian.

The *kancil* and *grantang* have eight keys in a two octave tetratonic scale. The *celuluk, undir* and *jegog* are each a double instrument, having the same four notes repeated (see below), but with the characteristic Balinese detuning (see Pairing, next page), accomplished by using a thicker or longer tube for the *wadon* or female one. For instance, on one *celuluk* the third note from the left was 660 x 90mm, and its partner second from the right measured 640 x 90mm. The lowest note on the *jegog* was produced by two tubes, 15cm x 2.9m and 17cm x 3m[46]. The bass pitches, too low for the microphone in the video camera to pick up, were almost a major third apart, yet in performance this produces a single, throbbing sustained bass note . (See DVD track 7. See appendix for further measurements)

Fig 58: Seni Jegog (courtesy Tenzer)

Both Joged Bumbung and Seni Jegog are more avidly played than the bronze *gamelan* in the Negara region. The following layout below, observed in the rehearsal space at Yeh Kuning, reflects the layouts seen in the photograph above.

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46 Many of the bass *(undir)* Joged Bungbung or Seni Jegog bamboo instruments have a crossbar mounted over the massive bamboos, so that the keys are played between the legs.

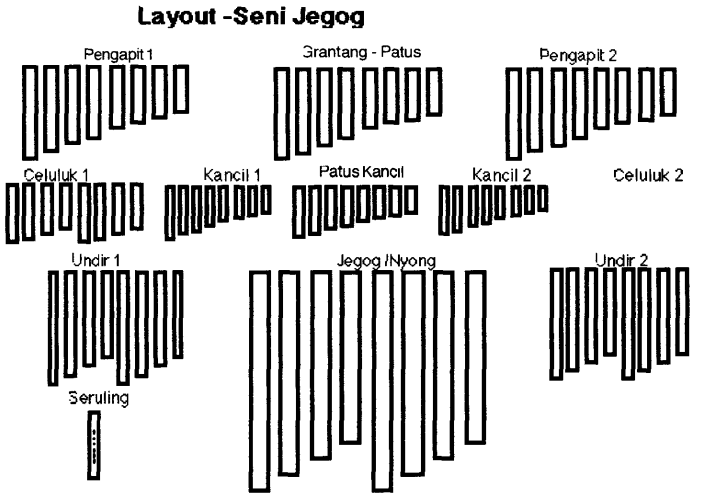

Fig 59: Seni Jegog configuration

The two *undir* and a *nyong* take the place of *joged bumbung's* single *undir*, with *celuluk* acting as an upper octave of the *undir*. This gives the underpinning nuclear theme vastly more strength. The absence of *gejek* and *gupakan* (cymbals and drums) make for a less staccato sound than the *joged bumbung*, something closer to the ancient *luang* ensemble of *suling* (flutes).

Pairing in bamboo ensembles

Most parts in these three ensembles are paired, either because two players play on identical instruments, or because one player is playing an instrument on which the right and left hands play identical halves. Occasionally a third instrument acts as section leader. The duos or trios in the upper registers play in the interlocking styles known as *kotekan,* while the bass lines in the lower parts are played on instruments comprising identical right and left sides. In the *Joged Bumbung* the *patus* and *kancil* are in trio, the drums are in duo, and the *undir* (bass line) is played by one player on an instrument with two complimentarily tuned halves. In the *Joged bumbung* piece Sabda, analysed below (5.3.4), the *pengapit patus* (or *kancil*) leads each set of variations. Built into these variations are deliberate dynamic and tempo changes cued by the *pengapit*, so that at times the nuclear melody (*gendhing*) stands out, at others the *koncangan*, at still others the entire ensemble suddenly softens or roars into full charge. The *patus* in these ensembles was said to be the *"kontrol*. This was certainly supported in practice, both in body language, seating position and variation technique.

Balinese bronze and bamboo *gamelan* instruments tend to be tuned in offset pairs, with one of each pair pitched slightly below the other. The resultant "beats" (wave modulations) give the resonating notes a shimmering quality.

"Most *gamelan* vibrate, or beat, at a rate of between 5 and 8 times a second, depending on the preference of the *gamelan*'s tuner ... while that difference can result in a big discrepancy in pitch on the deep bass instruments, it is barely discernable in the piercing upper registers. (Tenzer 91 : 33)"

This feature, perhaps discovered on bronze instruments, is reproduced in most of the bamboo ensembles.

Balinese bamboo tube ensembles - summary

The principles of bamboo *gambang* construction are clearly adaptable to a variety of tunings and instrumental forms. These instruments are never traditionally incorporated into the bronze *gamelan* orchestras, yet parts of equal complexity are performed on them. The separation of bronze and bamboo *gamelan*, and of *slendro* and *pelog* tuned ensembles would suggest a conscious decision to keep each entity pure[47], in contrast with the Javanese and Sundanese *gamelan*, which now combine dissimilar instruments and tunings. At the time of the Javanese Hindu migration many *gamelan* were single tuned. Pairing is common in bamboo *gambang* ensembles, as it is in most Balinese *gamelan*.

5A4: Balinese *gamelan gambang*

The ***Gamelan gambang*** comprises a quartet of *gambang*, tuned heptatonically at successive intervals (eg: bass, baritone, tenor and alto) together with an additional player playing a pair of *saron* or *gangsa*, metallophones one octave apart. A unique feature of this ensemble is the forked sticks used to play each *gambang*. Each *gambang* sits on stand (*ancak*) with a carved pedestal similar to the *gambang kayu*, but has no endpieces (see fig 60 below).

Fig 60: *Gamelan gambang* and *gangsa*, Negara

One of the most important aspects of the *Gamelan gambang* is that it is sacred and ancient. Thus its idiosyncrasies are preserved not to promote the village, nor to serve any commercial end, but to ensure the continuation of certain venerated traditions to do with the dead. The fact that the *Gamelan gambang* plays for mortuary ceremonies, often long after the burial, and for harvest and purification rituals puts it in a magical category. It is associated with very old rites and ceremonies that stand apart from much Balinese musical practice; such as mortuary, ritual cleansing and

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[47]An exception may be the *gamelan angklung*, which until recently combined a tetratonic bronze or iron gamelan with bamboo *angklung*.

recitation of old *kidung*. The players of this ensemble do not appear in colourful costumes, as in nearly all other *gamelan* performances. Experienced *gamelan* players from some orchestra may decide to take up *Gamelan gambang* in their spare time (Tenzer), almost as a hobby.

The four *gambang* in this ensemble are traditionally made with slab keys of thick heavy bamboo on wooden frames (see fig 61b), though fig 60 suggests that wooden keys may soon be employed. As such, they share characteristics of both wood and bamboo instruments. The bamboo keys produce a hard and brittle tone, with considerably less resonance than tubular bamboo. They have sequential ranges: in Schaareman's work the highest is called *pametit*, then *cakat*, *pamero* and *pamenang*, with the first and last being an octave apart, *pamero* two notes above *pamenang*, and *cakat* in unison with *pamero* or one or two notes higher; but the names of these instruments differ in the works of other researchers:

from highest	McPhee	Schaareman	Salisbury
1	Pametit	Pametit	Pametit
2	Penyelat	Cakat	Penyalat
3	Pemero	Pamero	Pemero
4	Penggede	Pamenang	Pengenter

Fig 61a: Instrument names in *gamelan gambang*

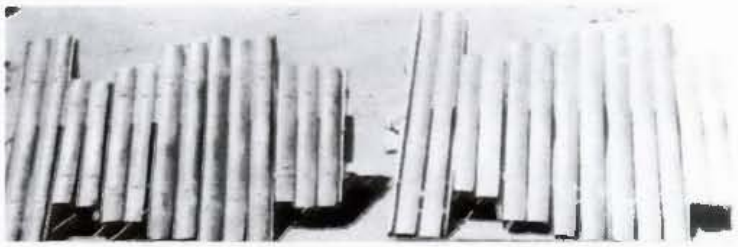

Fig 61b: Two consecutive *gamelan gambang*

The four *gambang* are played with forked sticks that are built to play octaves in each hand - these being only three keys apart in one hand, and four apart in the other (see fig 62 below). Tradition refers to these as v-shaped sticks, though x-shaped could be more accurate. In fig 62, the left hand has a choice of three note-pairs, the right has four. The disjunct key spacing they exhibit is also found in Sumatra and in Java, but in simpler forms – usually one key is placed to the side, as it is on the *gangsa*. The *gambang* keys here have a more complex pattern.

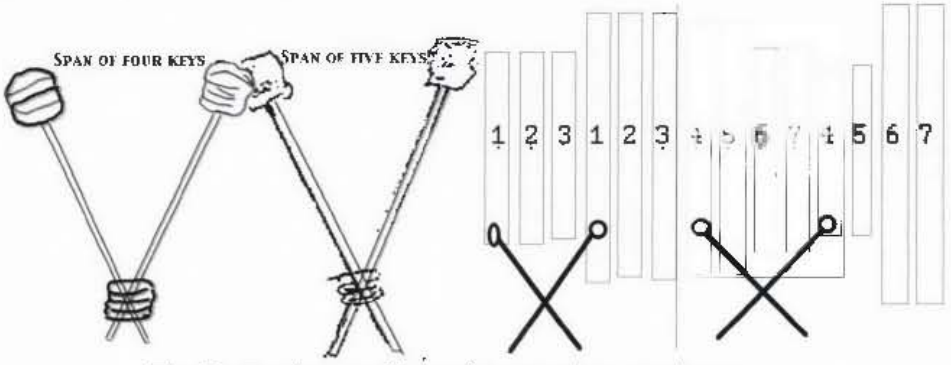

Fig 62: Beaters and keys for *gamelan gambang*

Playing positions seem to vary - the four *gambang* players of the *gamelan gambang* arrange themselves in a square, horseshoe or in two ranks of pairs, with the fifth member (the *gangsa*) off to one side, or the *gangsa* may be placed in the centre (see fig 60 above).

5A5: Other gamelan ensembles

The four *gambang* ensembles mentioned have highly disparate musical structures, yet in the general context of Balinese *gamelan* practice they simply occupy specific niches, and may be aligned with other *gamelan.*

Overall, Balinese *gamelan* may be divided into three categories – the *gambang* ensembles, the metal ensembles, and the wind or vocal ensembles. A brief reference to other ensembles will assist in specifying influences in style and organology, and supply a background that many *gamelan* players will take for granted. The Balinese have a strong consciousness of themselves as an artistic region, and the various orchestras have a powerful impact on each other. The classical sound of the *gamelan gambuh,* the arcane and difficult quality of the *gamelan gambang*, the enormous success of the century-old *Gong Kebyar*, or the modern, thundering *seni jegog* all occupy a distinct space in the Balinese soundscape, and ideas are borrowed readily across genres. For instance, the *Gong Kebyar* may briefly employ the unusual 5/3 rhythm (*gegambangan*) of *Gamelan gambang* (Tenzer), the *Seni Jegog* may borrow terraced dynamics from *Gong Kebyar*, the *Semar Pengulingan* may refer to melodies from *Seni Jegog* or any ensemble in new compositions.

Often there is a leading solo instrument in each *gamelan* : in *gong kebyar* it is usually the *ugal*; in the bamboo ensembles it is the third *pengapit* or *grantang*, (*patus*). These leaders sit in the middle of their row, leading *kotekan* and playing important connecting passages.

Metal gamelan

This category covers both iron and bronze ensembles. The iron *gamelan selunding*, generally confined to East Bali, is rare and highly sacred, and shares tuning and repertoire with the *gamelan gambang*. The widespread bronze ensembles *gong kebyar, gamelan gong gede, gamelan angklung, gamelan pelegongan* and *gender wayang* do not utilise a *gambang*, though their orchestration and terraced dynamics have come to influence modern *gambang* practice. In all metal ensembles there are generally four sections, each essentially an octave apart, though the higher metallophones have wider ranges that overlap those above or below them. These registers and roles are replicated in the bamboo ensembles, though the names change frequently. The rack of pot gongs, the four-man *reong* or the one man *trompong*, has no equivalent in the *gambang* ensembles. The table below gives an idea of the relativity of single or multi-octave instruments, and their relationship to the instruments under study.

Gender Wayang			*2 Gender* Tenor+Alto	*2 Gender* Alto+Soprano	
Tingklik			*2 Tingklik* Tenor+Alto		
Gong Kebyar	*2 Jegogan* Bass 8v	*2 Calung* Tenor 8v *1 Ugal* Bass+Tenor	*2-4 Pemade:* Tenor+Alto	*Reong*: Tenor+ Alto+Soprano	*2-4 Kantilan:* Alto+Soprano
Seni Jegog	*1 Nyong* Bass 8v	*2 Undir* Tenor 8v	*3 Grantang* Tenor+Alto	*2 Celuluk* Alto	*3 Kancil* Alto+Soprano
Joged Bumbung		*1 Undir* Bass 8v	*3 Pengapit* Tenor+Alto		*3 Kancil* Alto+Soprano
Gamelan gambang		*Pengenter* Tenor	*Pemero* Tenor+Alto	*Penyalat* Alto+Soprano	*Pametit* Soprano

Fig 63: Table of Balinese instrument families and ranges

Wind & vocal gamelan

The other category comprises the vocal *Kecak* ensemble, the *suling*-based *gambuh* ensemble, the *gamelan arja*, the *kodok* and *genggong* ensembles. Though the latter two feature bamboo instruments almost exclusively, there is nothing resembling *gambang* construction or technique in either. What is relevant about the *gambuh* ensemble is again the preference for a wavering sound, unlike the Western pursuit of a "pure" tone. The bamboo *gambang* ensembles reproduce this wavering, shimmering quality through the tuning process described above, even though the notes tend must be sustained through repetition.

5A6: Performance structure in Balinese gambang music

In the central Gong ritual traditions a fourfold performance structure pertains: *pemungkah*, the opening, *pengawit, pengawak* and *pengecet.*[48] Echoes of these forms may be found in the structure of bamboo ensemble performances. In Gunawan's list of *gamelan gambang* notations each *gending* comprises a *kawitan* followed by three *gending,* while Schaareman describes similar fourfold elements related to both ritual and musical structure:

> A gending (normally) consists of four parts: *kawitan* (from *ngawit,* "to begin"), *pingkalih, pingtiga* and *pingpat*...The *kawitan* is played in unison by all instruments, and is normally repeated... Each of the 22 village-gods has its own special melody, which may be any of the last three sections of an existing *gending*. These melodies are called *pabelan* or *taksu*... These *taksu* always have a *kale;* here the *kale* is a signal to the dancer that her dance has finished... Besides these forms (*gending, gaguron [= gending, taksu+kale]* and *taksu+kale* as a separate unit) there are still other types, all connected with a special part of ritual; the melody of these compositions is often very short, and is repeated as long as the ritual lasts. [Schaareman, 80]

The *legong* tradition, which has influenced the *joged bumbung,* has long featured a suite of melodies, opening with the *condong* music, with a lengthy *pengawak* section in the middle of the

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[48] Tenzer p50.

sequence.[49] Beyond these ritual forms, the clubs (*banjar*) that perform *joged bumbung* or *seni jegog* for competitions rather than ritual rehearse in tight schedules. After a piece has been played, it is essentially over. Although a few players may take a minute before or afterward to sort out the notes of a melody or details of an interlocking parts, the piece as a whole is rarely repeated. The *slendro*-tuned *tingklik* perhaps have the greatest number of traditions from which to draw their performance structures – the *wayang kulit* pieces associated with *gender wayang*, popular *legong* or *joged bumbung* tunes, and even transpositions from the *pelog*-tuned bronze *gamelan*. The result is that *tingklik* duos do not have such defined performance structures as other ensembles in Bali.

5B: Balinese *Gamelan* Music

5B1: Balinese musical theory

In Bali, playing is rarely articulated in terms of theory, but learned by rote. Theorising and spending time on aesthetic discussion would seem almost antithetical to the energetic approach that characterises Balinese music, with its associated Hindu rituals and the belief that traditions have potency. Even during rehearsal, players will instruct one another non-verbally. The main things named for my benefit were the scale or *saih* in which the piece is played, and the sections of the ritual or performance (see below). There are also names for sectional divisions such as introduction, static patterns and codas. The interlocking patterns that decorate the slow-moving parts have various regional names - *kotekan, nguwad, becat, oncangan* or *koncangan.*

5B2: Balinese tunings, modes and vocables

The Balinese *slendro* and *pelog* scales are not always named as such, and vary between districts, but the tunings of the bronze *gamelan* - *gong kebyar, semar pegulingan, gong angklung* - are all within the *pelog* model (two small steps, large step, small step. large step or SSLSL) clearly distinguishable from the *slendro* quality of the *gender wayang* or *tingklik*. The Balinese pentatonic modes or *saih* are all derived from, or at least compatible with, a heptatonic model, which is present completely only on the *gamelan Semar Pegulingan*, the archaic trio of *gamelan gambang*, *gamelan luang* and *gamelan selunding*. The vocalised names of the pitches are generally *dhong dhing dhOng dhAng dheng dhung dhang* in the heptatonic system, but in the pentatonic *gamelan* these are cyclically adapted to the specific mode as *ding, dong, deng, dung, dang*, following the SSLSL model (small and large steps - *deng* to *dung* and *dang* to *ding* are the large steps).

"Parent" scale	1	2	3	4	5	6	7
Selisir mode		ding	dong	deng		dung	dang
Tembung mode	dung	dang		ding	dong	deng	
Tunaren mode		dung	dang		ding	dong	deng

Fig 64a: Table of Balinese pentatonic modes (saih)

[49] Tenzer p54.

These certainly correspond to the equivalent Javanese *pelog* modes, and in both islands a kind of *slendro* can be constructed (23467), that while not completely satisfying as a "pure" *slendro*, serves as a modulation in the middle of a *pelog* piece. Hexatonic Balinese *gamelan* ensembles combine *Tembung* and *Selisir* modes. The *Seni Jegog* ensemble features a four note *pelog* . I noted three separate instances: C-D-F#-A, B-D-F#-A and D-E-G-Bb. Tenzer suggests this tuning represents the notes of 2,3 5 and 7 of the *tunaren* mode, which would fit the first, possibly the second example, but not the third. The *Gamelan gambang* adopts different names to these, with village variants, seen below on *saron*. Names are taken from Salisbury, with adjustments based on Gunawan. "Atut" is Schlager's categorising term based on the lowest note. There are no modes for *Dong Gede* and *Deng Atut*, but a non-specific modulatory mode exists - *Saih Salah*, that is , "false" tuning.

Name and phoneme Balinese symbol			d **o** ng kecil	d **I** ng	d **O** ng gede	d **A** ng gede	d **e** ng	d **u** ng	d **a** ng kecil
									
Atut	Schlager	Gunawan							
Ding	Riris-riris	Panji Marga		I	O	A	-	u	a
Dong				I	O	-	e	u	a
Dang	Condong	Sondong	o	I	-	A	e	u	-
Deng			-	I	O	-	e	u	a
Dung	Tjupak	Sadhi	o	-	O	A	-	u	a
Dang alit	Malat	Kasumba	o	I	-	A	e	-	a
Dong alit	Pudja	Pudja Semara	o	I	O	-	e	u	-
		Saih Salah	o	-	O	A	e		a

Fig 64b: *Saih* for *gamelan gambang*

5B3: Balinese nuclear melodies

In nearly all Balinese *gamelan* pieces there is a nuclear theme in a low register, elaborations based on paired interplay in higher instruments (or the higher register of the instrument), frequently with an accompaniment of gongs, drums and jingles or cymbals. Balinese nuclear melodies (sometimes called *pokok)* are generally not as long as Central Javanese *gendhing*, apart from those of the *Gamelan gambang* . These are the only parts ever written out. Most Balinese melodies are three to sixteen notes in length, figurated in different ways, depending on region, instrumentation and style. *Joged bumbung* uses medium length gong-based cycles in imitation of *gong kebyar* style, *seni jegog* and *tingklik* have short cycles with no gong, and *gamelan gambang* uses long non-repetitive melodies, played on the *gangsa* pair with the distinctive *gambangan* proportion of 5:3 (see Ex47-49). These sacred melodies (based on old *kidung* texts in the *kawih*[50] language) are not repeated, so variations in interlocking patterns during one playing do not exist (as they would in

[50] The terminal vowels are often correlated to the vocables, so that u in the text becomes *dung* in the music. (Tenzer p55). There is an implication that this may have happened in the past in Java, where the poetry associated with *gerongan* is based on a similar terminal-vowel based sytem, and *dhang* and *dhong* terms are still used modally.

Sunda or on *joged bumbung*). Rather, variation will occur between one ritual playing and the next, which could be a very long time.

5C: Balinese variation - *kotekan* or *koncangan*

Up to this point, the investigations of this work have been able to discover collections of motivic phrases for *gambang* in each genre and locality. Balinese music has evolved in a different direction, in which orchestration techniques and interlocking pairs play the main roles. The *gamelan* music of Bali is distinguished by and dependent on its interlocking patterns, called *koncangan (oncangan)* in *gambang* ensembles or *kotekan* in bronze ensembles. Some *kotekan* are short (say, 8 beats) while others may be 20 or 32 beat cycles. Bamboo *gambang* practice is driven by these interlocking patterns, and long unison passages (generally in parallel octaves) are presented as a relief or an arresting structural device.

This produces a very different *gambang* technique to that of Java and Sunda. The interlocking patterns must be predictable and tightly executed, and there is very little room for improvisation. The resultant melody needs to clearly indicate the central tone, which may be generated from each nuclear melody note, or each second, third or fourth note, as will be seen in the analyses. Thus the motivic phrase may be the resultant melody, or either of the two parts that make it up. Further, the range of the Balinese *gambang* are generally more limited than those previously examined, and resultant melodies tend to occur within a span of three to five notes.

Each village group (*banjar or sekehe*) strives to create a unique *kotekan* never quite heard before, even if the nuclear melody is the same as another village's. This may have been coincidental in earlier times[51], but now there is an expectation of innovation in *kotekan*.

"... many ensembles, having almost the same repertoire with the same 5+3 *gangsa* rhythm have utterly differing *gambang* configurations... even within the same village there may occur changes over a period of time... Apart from the dynamics of oral tradition however, there may well be a more or less conscious tendency towards making or keeping musical styles on a village level distinct from other villages as a means of creating or retaining musical identity;... Schaareman (80: p 470)"

In music influenced by the *Gong Kebyar* style there are two related forms of interlocking technique - either the style for *reong* (knobbed kettles) or *kantilan/gangsa* (bar metallophones). The *reong* style tends to use a four tone system, while the metallophones use equal amounts of three and four tone systems - both forms are found in *gambang* figuration. For a given goal tone, there will be an interlocking pattern of eight or more notes. The first note will usually be the goal tone, followed by an adjacent note. The adjacent note on the other side will be applied next (though

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[51] Isolation between valleys was far greater in pre-colonial times.

sometimes the goal tone is repeated first), and this pattern will either be repeated or inverted, and filled with adjacent notes as needed, so that eight note unit is created. The terms *sangsih* and *polos* are used to distinguish the two parts. "*Polos*" means plain and the *polos* part is usually on-beat and easier to learn[52], while the *sangsih* part is off-beat, and somewhat more difficult.

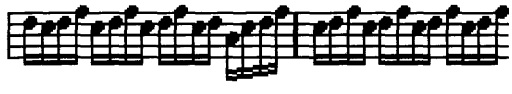
5C1: Three note interlocking

If we call the main note 1, and its neighbours 0 and 2, we may see: 12010210, 10212012, 12102120, etc. Each interlocking part will use the goal tone and one adjacent note, so the first example may be played

Part 1 (*sangsih*): 1 0 1 0 1 0
Part 2 (*polos*): 1 2 1 2 1
Resultant melody: 1 2 0 1 0 2 1 0

Ex 40a: Tresillic pattern with static voice-leading

These patterns may be tresillic, symmetrical or both. The example above is tresillic, and symmetrical, which has a feeling of stasis. When the *kotekan* uses the same pattern of three repeatedly, there is a feeling of direction, or voice-leading, as in ex 40:

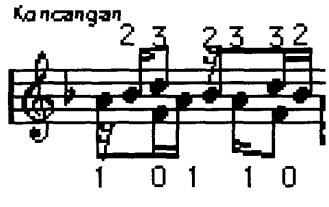


Ex 40b: Sesillic pattern with ascending voice-leading

This pattern is asymmetrical and sesillic. The difference in feeling between these variants is pertinent to creating cueing systems via *kotekan.*

5C2: Four note interlocking

In four note *kotekan* the second part (*sangsih*) does not employ the goal tone , but a note harmonising with it or another, at an interval of a fourth or fifth, as in the ex 41 from Sabda below. Here the 0 and 3 (F and C) are struck together, but note that this occurs on offbeats, and that the goal tone is A (1).



Ex 41: Four note interlocking pattern

Beyond these patterns, there are recognisable patterns in the construction of pieces, their performance structure and the solo cueing processes during those pieces, but so far there have been no regionally accepted motivic standards. The work of Schaareman and Tenzer illuminates the processes at work, but there is nothing yet in Bali to compare with the widespread influence of the

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[52]Tenzer states the *polos* part is based on the *pokok.* Perhaps both parts are derived from the *pokok.* The word *polos* means "plain" (eg: an unprinted T-shirt), so *polos* may have a sense of foundation, that is, the *polos* part must be played before the *sangsih* part may be overlaid on it.

Solonese method in Java. Therefore the analyses of patterns must be directed towards finding patterns, rather than confirming them.

5D: Analyses of Balinese *gambang* pieces

Three examples of the bamboo tube genres- *tingklik, joged bumbung* and *seni jegog* – will be compared and summarised, followed by a comparison of three *gamelan gambang* pieces, including pieces by McPhee and Schaareman. Yet each genre has distinct aesthetics that determine its structures and interlocking techniques. The *tingklik* piece will be analysed for interlocking patterns and their structural function; the *seni joged* piece for variety of instrumental and compositional devices, with some proposals at the interlocking patterns used; and the *joged bumbung* piece for both interlocking patterns and compositional form. The *gamelan gambang* pieces will be preceded by a short section on motivic phrases, taken largely from Schaareman.

5D1: Tingklik - Pemungkah

(Track 1 of 'Musik Rindik - G*egambang*an' (Music from Bamboo Guna Winangun Tenganan), Rick's Records [Nice 'n' Easy] Maharani MH97)

The first genre for analysis is the simple *tingklik* or *rindik* duo form. This example comes from the Tenganan cassette release 'Musik Rindik', which refers to the genre as *gegambangan*[53].This example demonstrates simple *kotekan* and transitional phrases. The tuning is a form of *slendro*, notated D F G A C, with pivotal tones transcribed as D and A. The genre is characterised not by parallel melody, nor the agile counterpoint seen in Sunda and Cirebon, but a strict division between a steady bass line in the left hand, in regular alternation between the two players, and a more florid three-note interlocking pattern between the right hands, generally tresillic.

In ex 42a below the four-staff system demonstrates the resultant melody of the right hands, then those two parts separated as *polos* and *sangsi*, and finally the bass line as an alternating unison line between the two players' left hands, following the style of *gender wayang*.

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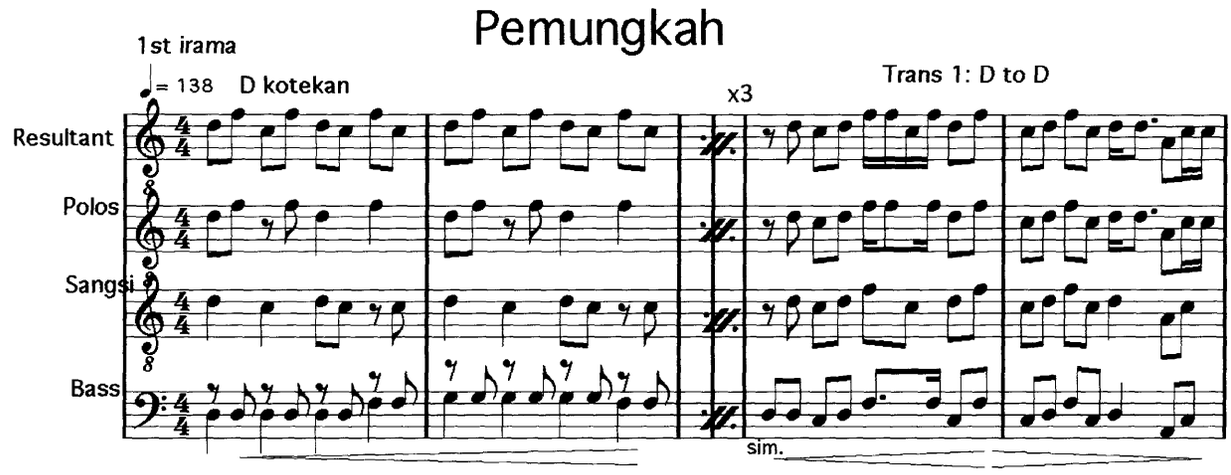
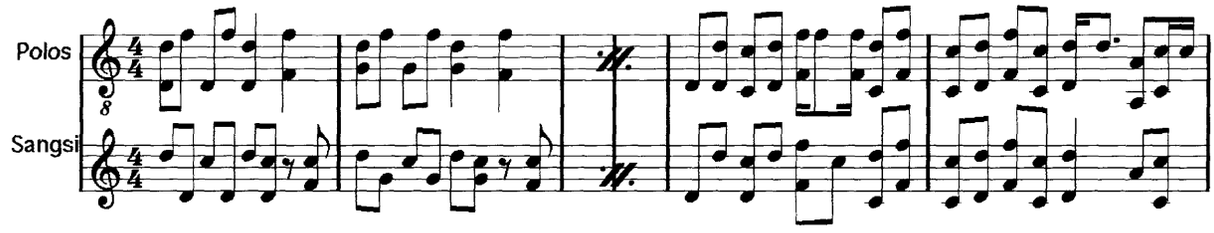
[53] Confirming the term *gambang* in describing bamboo xylophones.



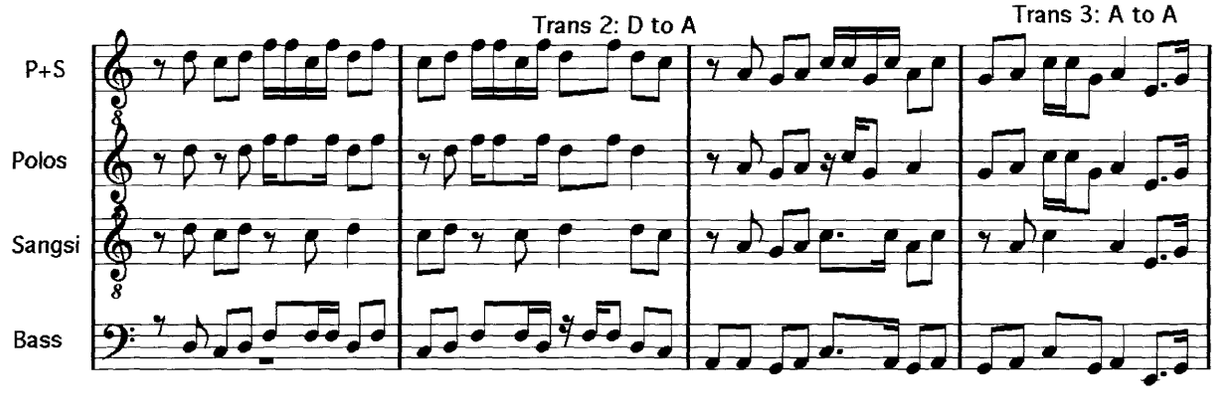
Ex 42a: Pemungkah - 1st cycle

The first two bars are a short and simple example of three note *kotekan*, with a sense of stasis. The first transitional phrase (D to D) between this repeated *kotekan* is looser, more animated and sets the pattern for other transitions in this *irama*. The dynamics are quite pronounced. Ex 42b below shows how these parts might be achieved on each instrument.



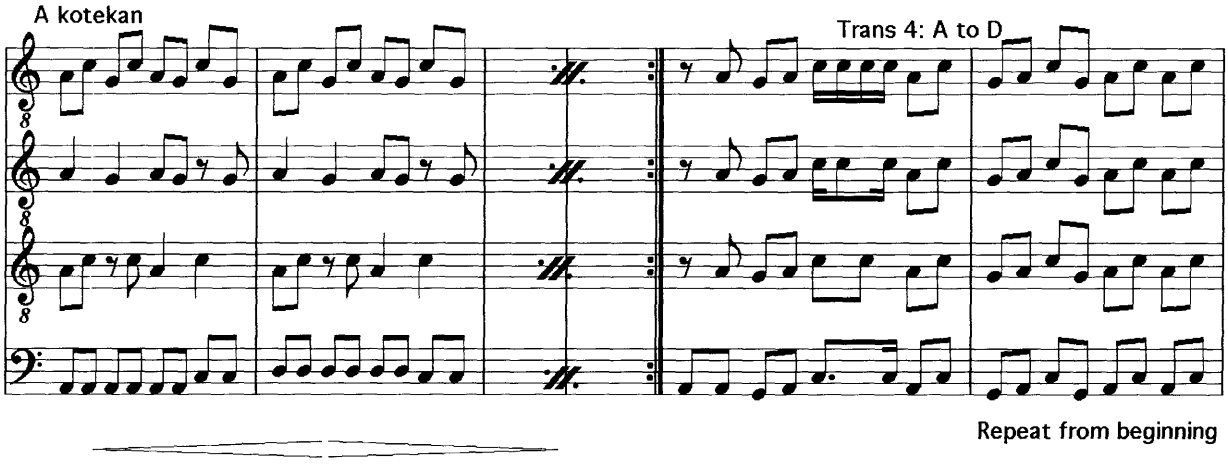
Ex 42b: Pemungkah - 1st cycle: possible part-sharing

On the third rendition of this passage the transitional phrase takes a downward turn into a similar passage on A, which is subsequently used as the transitional passage between the *kotekan* on A.



Ex 42c: Pemungkah - 1st cycle: transitional phrases to D and A

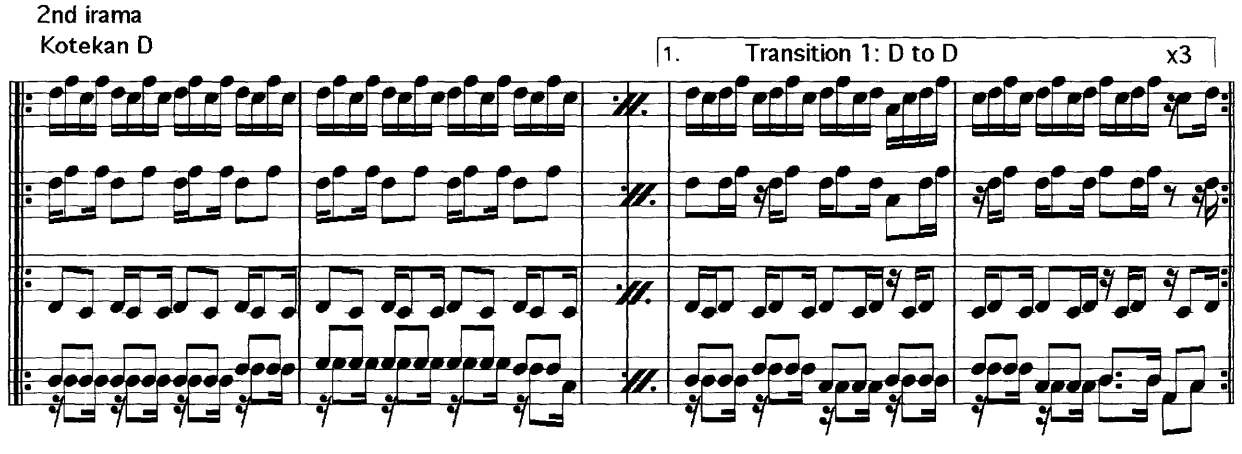
The *kotekan* on the lower note A is repeated three times, with a different transitional phrase to return to the D *kotekan*. That is, the second cycle begins with transition 3 (ex42c above), followed by the A *kotekan* (ex42d below), transition 3, the A *kotekan* and transition 4, to return to the D *kotekan* (ex42a above) for a third cycle. [Parts and clefs continue as before.]



Ex 42d: Pemungkah - 2nd cycle: kotekan on A and transition to D

The D and A cycles alternate several times before a second *irama* (a busier density) is entered. In both *irama* the D section is played three times with a transitional phrase (to D) in between, then the transitional phrase takes us to the goal tone A, which undergoes almost the same process, that is: **D-trans1-D-trans1-D-trans2-trans3-A-trans3-A-trans3-A-trans4-D**, beginning the cycle again. The symmetry of this structure is so common in Western music (eg: dance tunes from Ireland, France, Yugoslavia) that we might underestimate its significance in Bali, where it is by no means as common.

Each of the four transitional melodies in this new density is quite distinctive. Further, the *kotekan* for each of the stationary patterns (for D and A) are static in nature, lightly tresillic, while the transitions have strong voice-leadings up or down, and only the fourth transition is strongly tresillic, having precisely the same shape as the common Central Javanese *seleh* phrase. It is also worth noting that the transitions feature rebound technique, but the static *kotekan* do not. This entire cycle is played four times, with varying dynamics, then, after a short accelerando, the next *irama* is entered, with new *kotekan.*

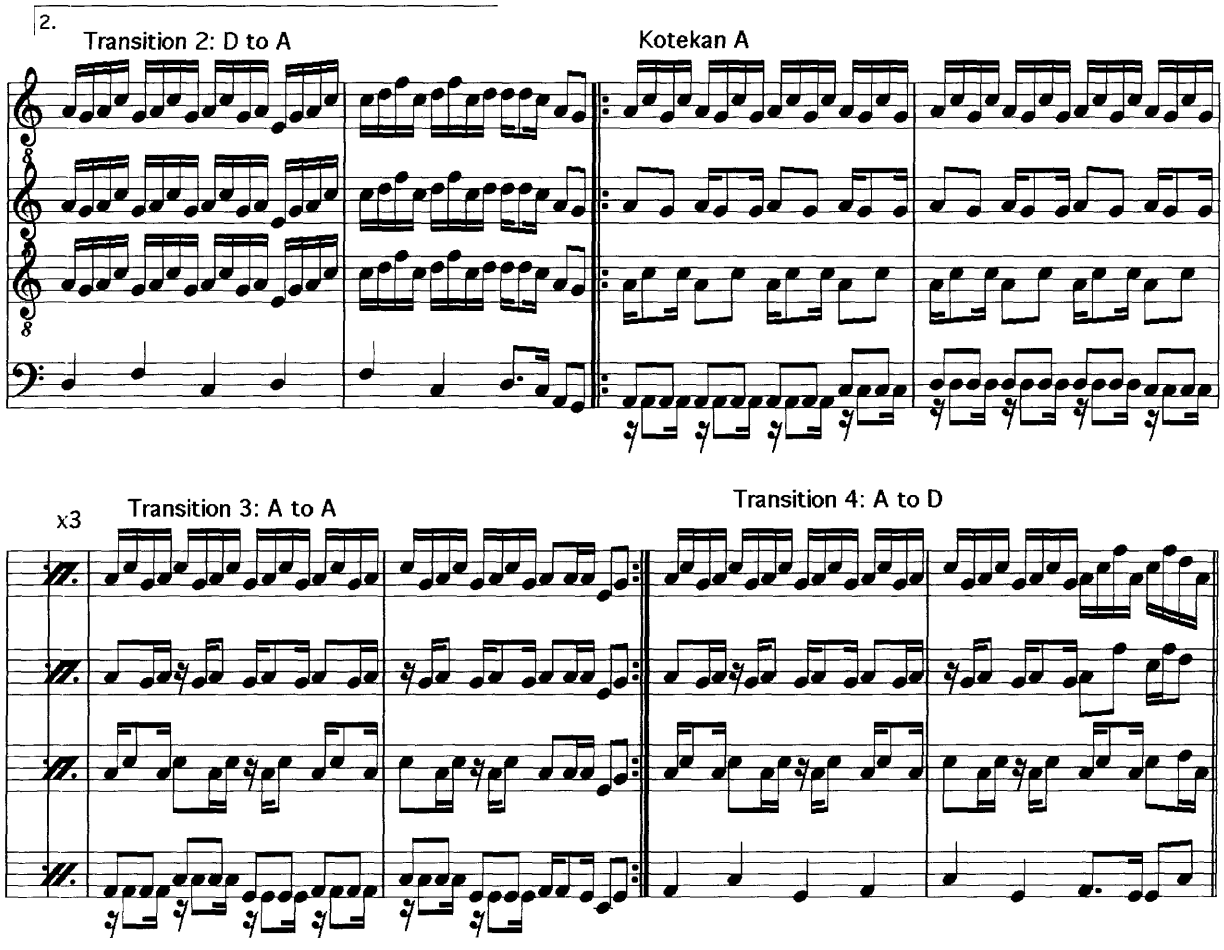


Ex 43a: Pemungkah, 2nd irama - 1st cycle: kotekan and transitional phrases to D

The new *kotekan* is simply the old right hand patterns played at twice the speed over the original bass line, played in doubles at twice the speed. Thus the nuclear theme is preserved, but the next density is achieved.

Page 143 of this thesis intentionally left blank

The new transitional phrase is quite new, an excellent example of sesillic structure clearly leading upward. After repeating the *kotekan* and transitional *kotekan*, the next transition leads downward in its last four notes:



Ex 43b: Pemungkah, 2nd irama - 2nd cycle: A kotekan, D and A transitional phrases

The A *kotekan* and its two transitions follow essentially the same formula as the D ones. The returning transition is a little more ornate than the rest. It is worth noting that this series alternates two static *kotekan* with a single transition, unlike the doubled transitions of the first section, i.e. **D-trans2-A** rather than **D-trans2-trans3-A.** These structures are conceptually not unlike Central Javanese *bonang imbal/sekaran,* which repeat one or two fixed static patterns, with more ornate patterns at the end of each line:

	Abstract imbal	*Imbal* example	transitional phrase (*sekar* to *seleh* 2)
Bonang barung	....o....o....o....o.	.1.3.1.3.1.3.1.3	.1.3.1.3. 66632322
Bonang *panerus*	.o....o....o....o...	5.2.5.2.5.2.5.2.	5.2.5.2. 2 . 2 . 2 . 2 .

Ex 43c: Bonang imbal sekaran

The new cycles are repeated four times, and the piece concludes. The name *Pemungkah* implies an introduction, and the remaining pieces on the cassette are more complex in structure, theme and *kotekan,* but they continue in much the same style.

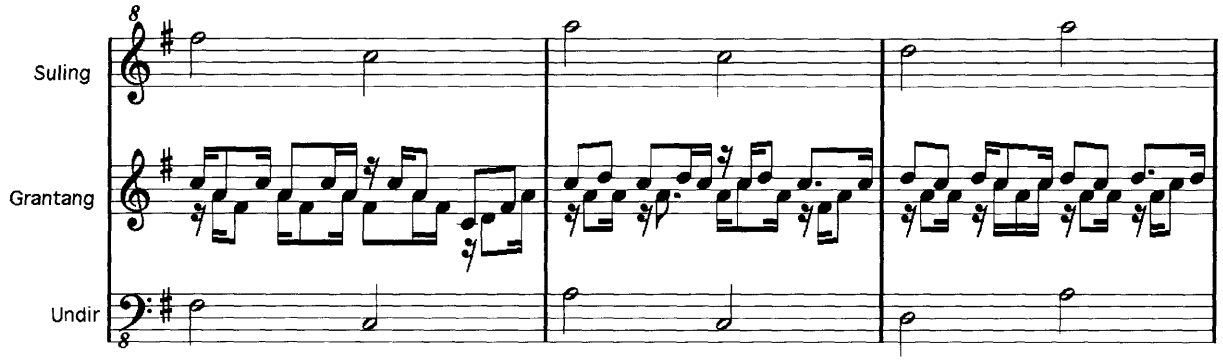
In this example the *kotekan* are easily discernable, and their structure reflects the relationship with *gender wayang*: two moderately complex interlocking right hand parts over a shared left hand bass line, taken a few times through two tempo densities (*irama*). The two parts are of equal importance, and although dynamics are a device, the exposition of the *kotekan* seems more important. The interlocking patterns are short, generally of eight notes in the right hand, a pattern that is played four times during one phrase in the left hand, producing a complete phrase of thirty two pulse units. The left hand parts of the transitional phrases bear comparison with Javanese *seleh* phrasing: for instance the transition A to D in the first cycle is GACGACAC/D , and in the second cycle ACGACGAC/D, both typical *seleh* shapes. In a sense this does put the interlocking and transitional phrases on a par with Javanese and Sundanese *gambang* motivic phrases, since there are between thirty two and sixty four pulses to each new goal tone, but in the Balinese idiom the goal tone is established immediately and the *kotekan* is repeated until the transition, so there is little comparison to the lengthy Javanese *cengkok* or the Sundanese *carukan* patterns. Improvisation is limited to occasional uses of rebound.

5D2: Jegog – Cerucuk Punyah

(The B side of the cassette 'Jegog - Kesuma Sari Vol.4 Moding' Aneka 842)

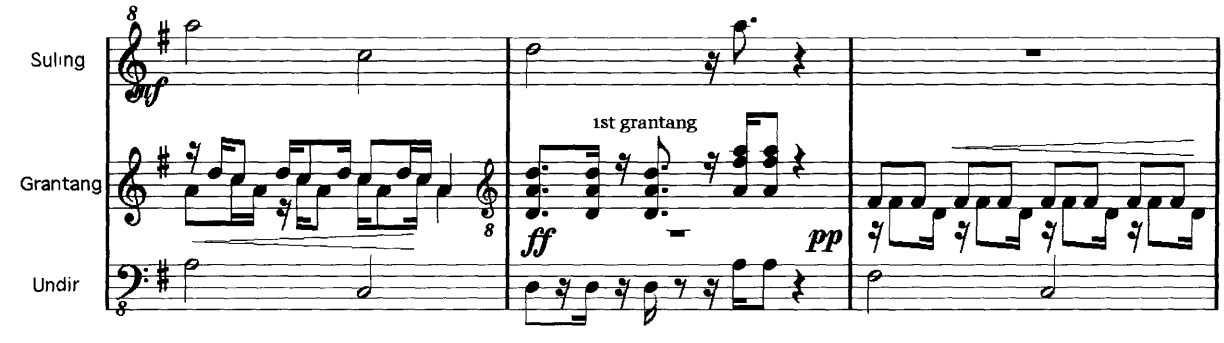
The *Seni Jegog* genre is far more dramatic, and reflects the *gong kebyar* style more than the *gender wayang* style. The tuning is tetratonic, transcribed here as A C D F#, and there are around a dozen performers in the ensemble. The pieces are longer than those on the Rindik cassette (this one taking up the entire B side), and contain many orchestral devices, typical of the genre. The orchestra, it may be recalled, comprises the interlocking *gambang* section of tenor *grantang* and alto *kancil* (three of each), and the remainder being largely dedicated to the nuclear theme: the tenor *celuluk*, bass *undir*, contrabass *nyong* and a single soprano *suling* (flute). Sections featuring only the *undir* and *nyong* make a dramatic change from continuous interlocking patterns, as does the addition or omission of the *suling*, and so on. Other textural effects may be achieved by a variety of interlocking patterns within the ranks of the *jegog* ensemble - alternating the same note, or three- and four- note interlocking as described above; but terraced dynamics are more pronounced in this ensemble than in any other *gambang* ensemble in Bali.

I have transcribed the middle third of this piece, about six minutes in length, with a view to showing the orchestral devices more than the *kotekan*. Since the texture is very dense, I may only propose possible divisions of the *kotekan* in certain places. The excerpt begins with a quiet section in which the *suling* and *undir+nyong* are louder than the interlocking *grantang*.



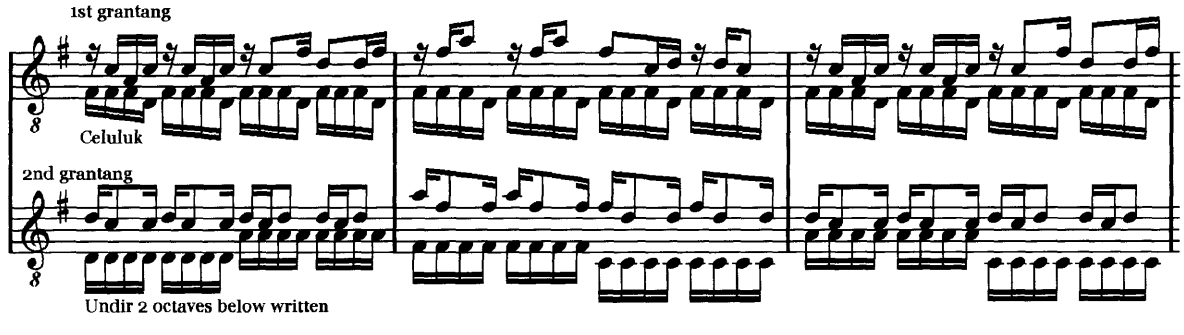
Ex 44a: Punyah - 1st section

The *grantang* display two forms of *kotekan* – directional and tresillic in the first and third bars, and static in the middle bar. This pattern repeats with a gradual crescendo, until a staccato *grantang* interjection changes the atmosphere – another device common in *gong kebyar* and parallelled in dance technique.



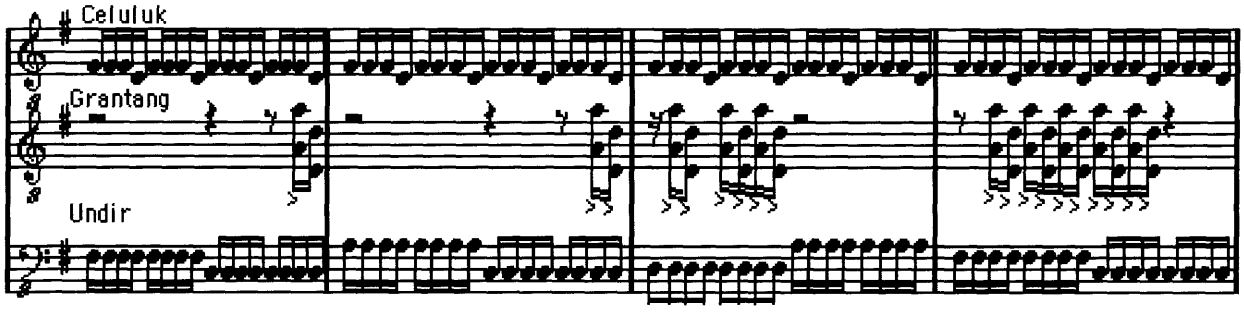
Ex 44b: Punyah - 2nd section (staccato cue)

This alternation of quiet ostinato and interjection continues until a stationary *kotekan* returns:



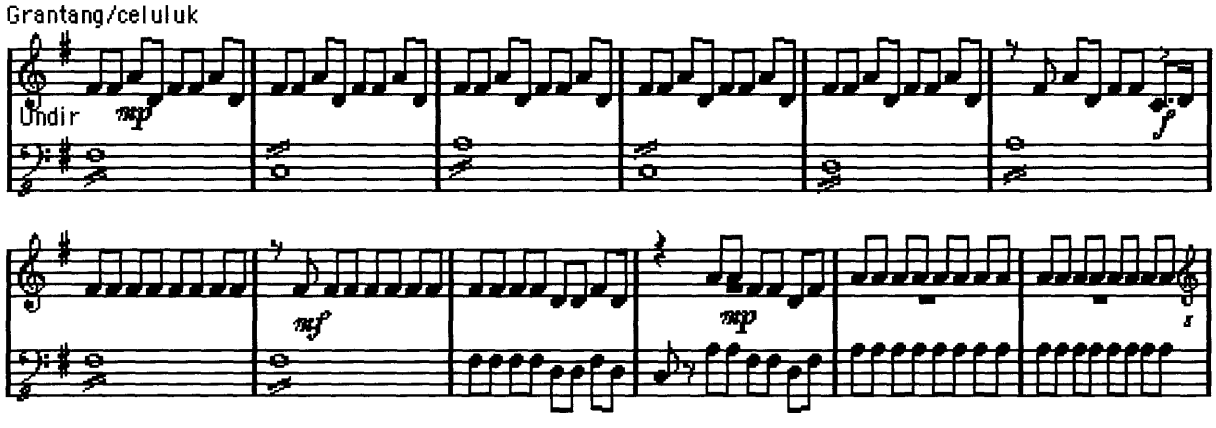
Ex 44c: Punyah - 3rd section

Here the 1st and 2nd *grantang* (and *kancil* 8v above) play a *kotekan* with a shifting ambit of three notes. The *celuluk* part, a stationary part against the shifting upper *kotekan*, may be produced by *kotekan* or a single player. The *undir* (+*jegog* 8v below) may have been played by three players, each on a twin-tube instrument (alternating tremolo). In this style all players maintain the same density; some on *kotekan*, some on tremolo, and what might be termed unison *imbal*- playing identical notes in rapid alternation. Rebound technique is not used here. Further on, more strong staccato interjections occur.



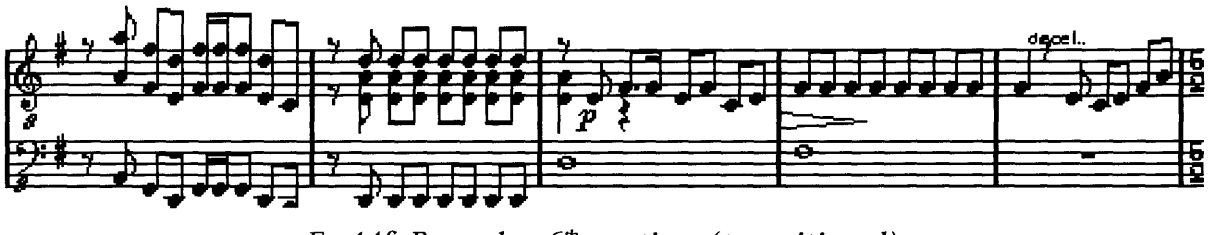
Ex 44d: Punyah - 4th section

The *kotekan* returns for two cycles, and then a quiet transitional passage is reached, in which an ostinato in the upper parts is suspended over the rapidly alternating nuclear theme, now doubled in length. This use of a stationary accompaniment stands at odds with previous *gambang* and *gamelan* practices, being more an orchestral device than a conventional embellishment of each goal tone. At the end of the sixth bar the *celuluk* and *grantang* cue a change in which the central tone of this section (F#) becomes static, cueing a new transition.



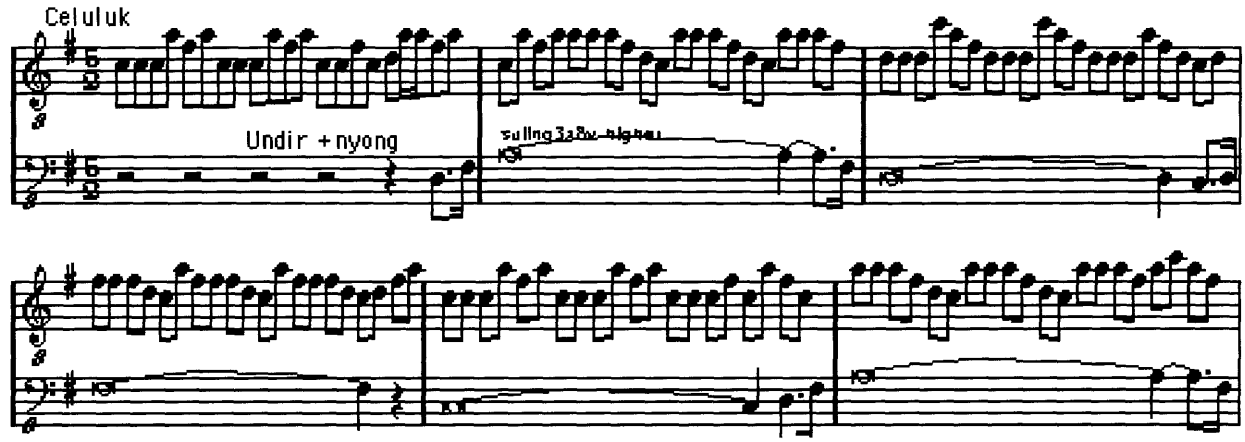
Ex 44e: Punyah - 5th section

Now the lower parts join the upper ones in a parallel melody, and the piece changes tempo, volume and density as a new section is approached.



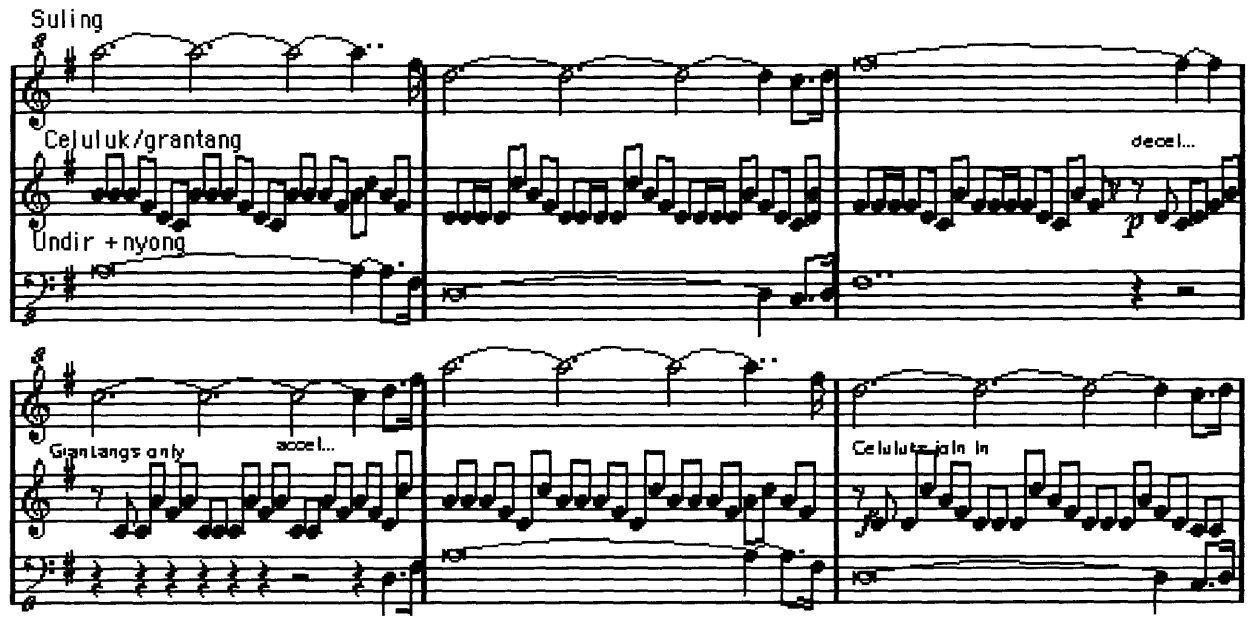
Ex 44f: Punyah - 6th section (transitional)

The new section is based on a new nuclear theme, A-D-F#-C, and its elaboration is a 20-note cycle, notated here in 5/2 (ex44g below). It will be seen that the elaboration (too slow for interlocking work to be practical) becomes a shifting alternation of three main notes (3M) and three auxiliaries (3A), with a connecting phrase of five notes at the end: 3M-3A-3M-3A-3M-5CP. This has the same kind of structure seen in Pemungkah, a long repeated static section followed by a more dynamic transition to a new central tone. The unusual phrase length is another example of the search for innovation in this genre.



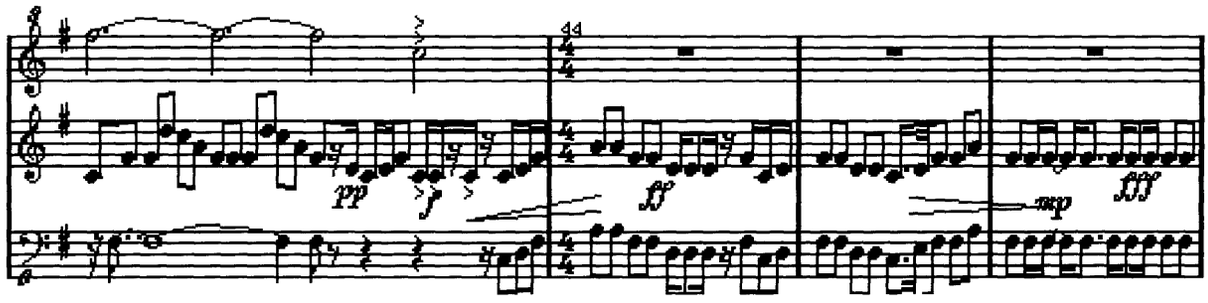
Ex 44g: Punyah – 7th section

The return of the *suling* seems significant as a confirmation of the new theme, the A-D-F#-C *pokok* , with connecting grace notes on *suling*. It also heralds a return to the counterpoint of nuclear theme and elaboration, although this elaboration is in unison, not *kotekan*. Towards the end of this section new orchestral devices are employed. Where previously the *grantang* had been the main leader, now there are momentary exposures of other instruments - *suling*, *undir* and *nyong* dropping out for a few notes, and *celuluk* coming in and out of the texture.



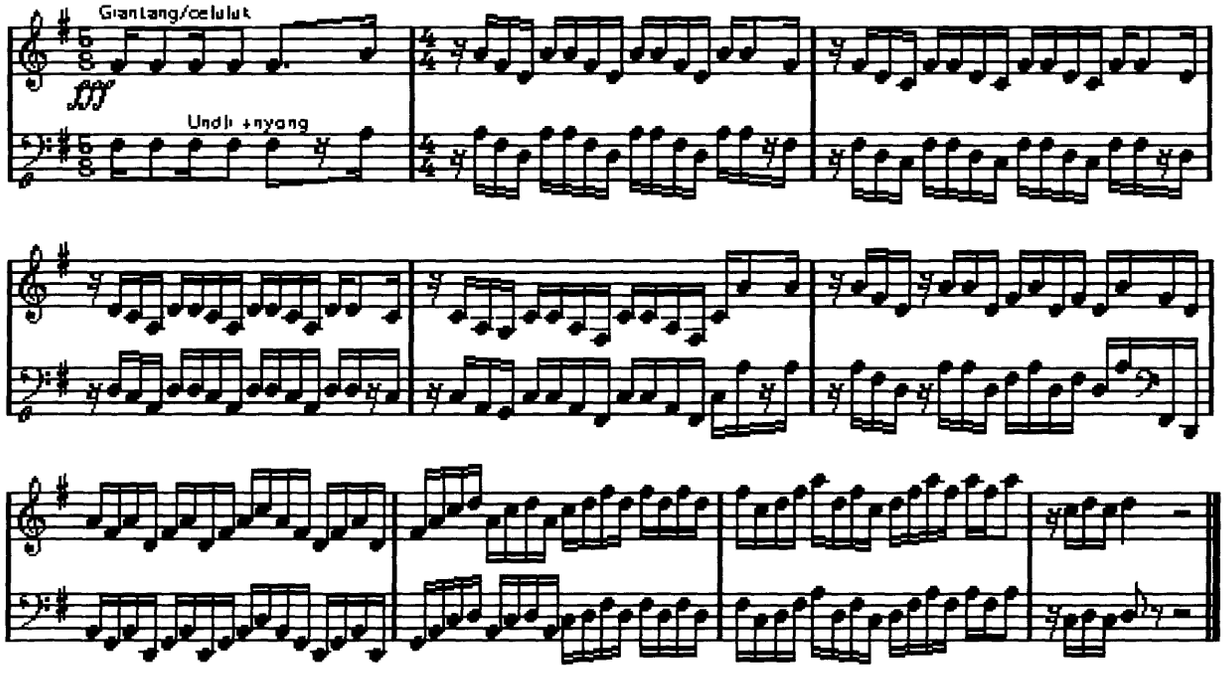
Ex44h: Punyah – 8th section

This time I have not suggested a division of the *kotekan*, but it would have been played by 4-6 instruments. Dynamic and tempo changes are a part of this process, and rebounds start to be more evident. The end of this section employs even more textural devices, as the focus shifts to very precise articulations of the elaborative part.



Ex 44i: Punyah – 9th section

This unison section leads into a complex bridging passage in parallel octaves for all *gambang*, with no *suling*.



Ex 44j: Punyah – 10th section

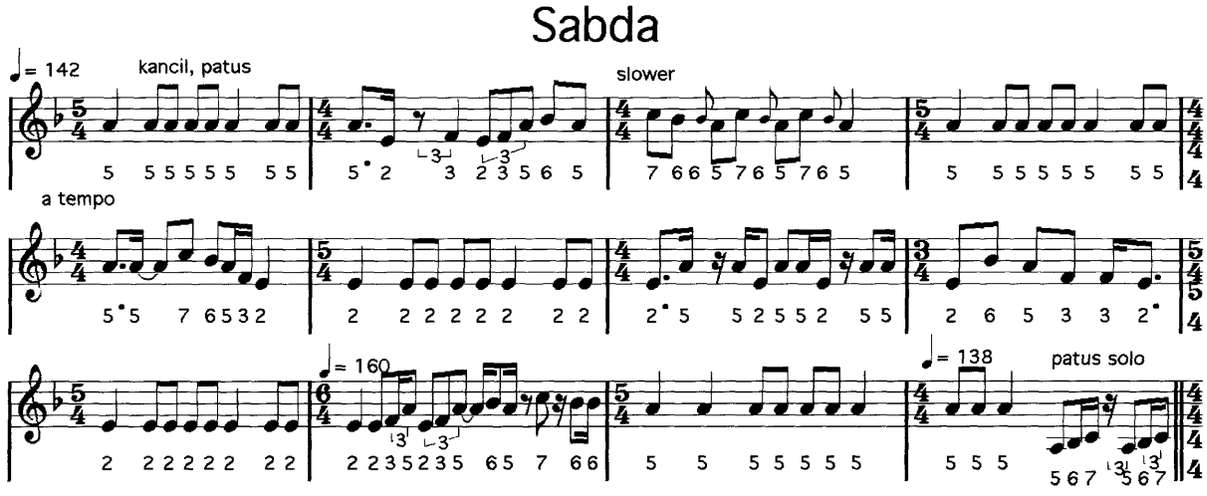
The *nyong* leads into a new section, and more nuclear melodies and elaborations follow. My transcription ceases at this point.

It is clear that the Seni Jegog style incorporates many radical departures from the *rindik/tingklik* style and other *gambang* styles we have seen so far. Most significantly, there is no scope for improvisation, little scope even for any significant elaboration. Ensemble execution is everything in this genre, something it has in common with Western practice. It is clearly through-composed, whether by an individual or by consensus. Nuclear melodies are a feature, not the basis, of this style, and unison melodic passages with precise dynamics are just as common. Yet relationships to other Balinese *gambang* genres may be seen in the interlocking parts, and passages like the last one above which use the kind of recursive ascents and descents that appears in *banyumili gambang* playing in Java.

5D3: Joged Bumbung - Sabda

The *joged bumbung* genre lies somewhere between these last two genres, being concerned with intricate *kotekan* on one hand, as well as complex thematic development and orchestral devices on the other. I recorded this example *(Pengungkap Sabda*) and three others on a field trip to Negara in 1998. Each piece appeared to have an ametric prelude (*sekar batu-batu* "Flowering of Rocks" ie, elaboration of the main tones A and E) featuring largely unison playing, with no colotomic instruments, followed by a faster rhythmic section (*kerep*), featuring colotomic instruments and a variety of interlocking patterns (*koncangan*). The tuning is a pentatonic mode, a version of *saih selisir,* notated as A Bb C E F, with Javanese numerics 5 6 7 2 3. The phrasing is both more variable in tempo and precise in execution than the Seni Jegog piece. I have leant towards a performer's notation with recurrent motifs, rather than a scientific one based on an absolute time grid.

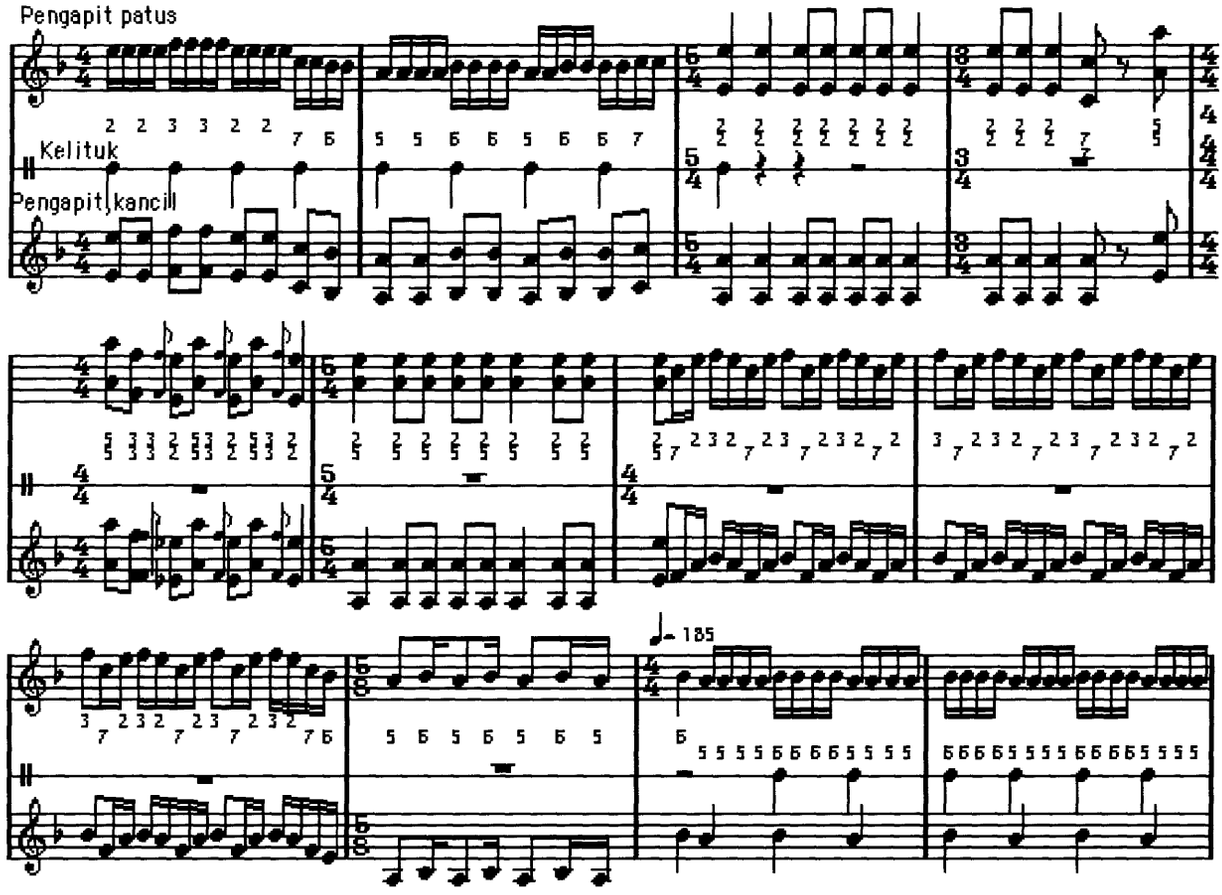
The role of the *patus* (leader of the *pengapit* section, and orchestral leader) is illustrated by events beginning the rehearsal. I began filming as players arrived. At first some played in unison through long themes while another pair rehearsed a *kotekan*, the teacher demonstrating to the younger player from the opposite side of the neighbouring instrument. This took some minutes, and gradually the *kotekan* and theme blended. At one point everyone stopped, and repositioned themselves, because the *patus* had arrived, a serious young man in white who sat silently at his instrument, facing the street, while the ensemble took their places. The priest sprinkled water over the entire gathering and instruments. The drummers alone were active, tuning their drums. Once these were ready the *patus* raised his shoulders and began the prelude, joined immediately by all the bamboo instruments. During this couple of minutes virtually no conversation had taken place, apart from various back row performers and associates enquiring as to my needs. The ambience for the ensemble was non-verbal and ritualistic, the tension created by the final silence and blessing released suddenly into the music. (Ex 45a, DVD track 6)



Ex 45a: Sabda - 1st section

The introduction of Sabda (45a above) alternates either of the repeated goal tones (A/5 and E/2) with a linking phrase. There is a somewhat ametric feeling to the prelude, with plentiful tempo changes. The goal tone phrase notated in 5/4 (bars 1,4,6,10,12) is a generic motif that appears in the introductions to two other pieces recorded in the same session. This phrase is in fact identical to one used by Kurnadi of Cirebon, for almost the same reasons – the establishment of a note at the end of a flourish. Further, in both cases the stationary note is approached from two notes above or below. The linking phrases initially ascend or descend two steps, gradually varying in length - 8, 4, 7 and 6 beats, with some elements being played three times, others created as a single phrase.

In the last bar of ex 45a the *patus* (leader) cues a fast rhythmical section that includes most of the ensemble, particularly the *kelituk* (the pot-gong that defines the pulse), which plays a constant crotchet pulse (ex45b below). This section returns to the goal tone statement, and the *kelituk* falls silent (bar3).



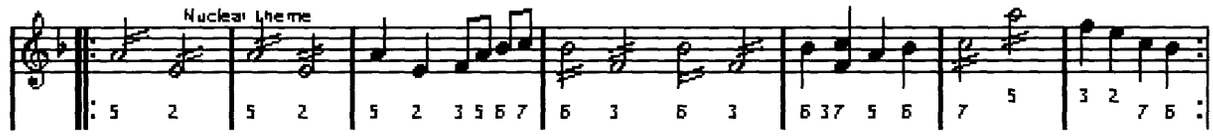
Ex 45b: Sabda – 2nd section

In the subsequent goal tone statement (bars 3-4 of 45b) the lower goal tone E is approached twice, as in the previously established order, except that some of the transitional phrases are now much more powerful ensemble statements. The recursive scalar passage (bars7-9 of 45b) builds up a sense of tempo, and descends to the tonic A on its sixth repetition. The final transition moves through two alternations of the goal tone A with its upper neighbour Bb –the first syncopated (bar

10), the second steady (bars 11-12). From here on, throughout the *kerep* section, the tempo is steady.

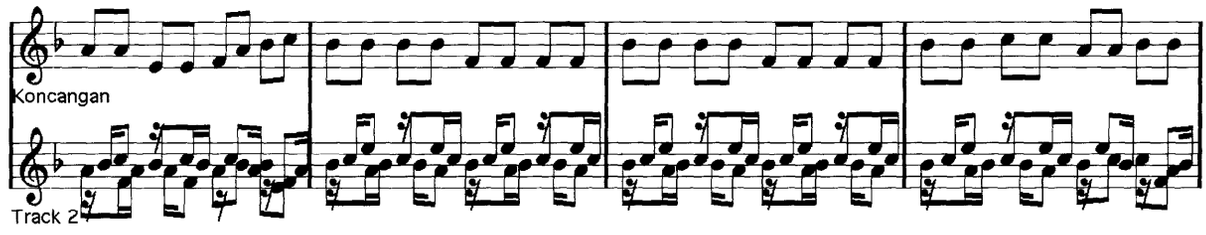
It may be seen that the goal tone structure of the prelude *sekar batu-batu* (Ex 45a&b) is essentially a transposition of the *rindik* piece Pemungkah (ex42): **A-trans-A-trans-E-trans-E-trans-A**. (Javanese numerics: 5, 2>5, 5, 5>2, 2, 5>2, 2, 2>5, 5).

The second part, the *kerep*[54] section, explores variations on the nuclear theme 5-6-7 (see ex45c) at a fast tempo. Another structure from *Pemungkah* is seen here: the static pattern on the tonic A (5) is played twice, followed by a transition phrase, then the same process is applied to the next tone Bb (6), but the final tone C (7) is played only once, and has a markedly different transition:



Ex 45c: Sabda - 3rd section -kerep theme

This theme is first played in rapid alternation, with some alternative transitional notes to those shown above appearing in other parts (see ex45f). The *koncangan* over bars 3-7 of the theme is given below (lower staff), the others following this model:



Ex 45d: Sabda - koncangan

This *koncangan* has a four note ambit, and the two players strike the outer pitches together every offbeat, opposite to the *kelituk* beat. The transitional phrase is short, lasting two beats rather than the *koncangan's* ten. This pattern is repeated on three successive pitches 5-6-7, the third level taking only eight beats (6*kotekan*+2transition). Two successive phrases of the nuclear theme (*balungan*) in longer time values, with separated *polos* and *sangsi* parts, are given below(ex45e). The first bar of each system shows the alternating interlocking part providing the transition to each new pitch level.

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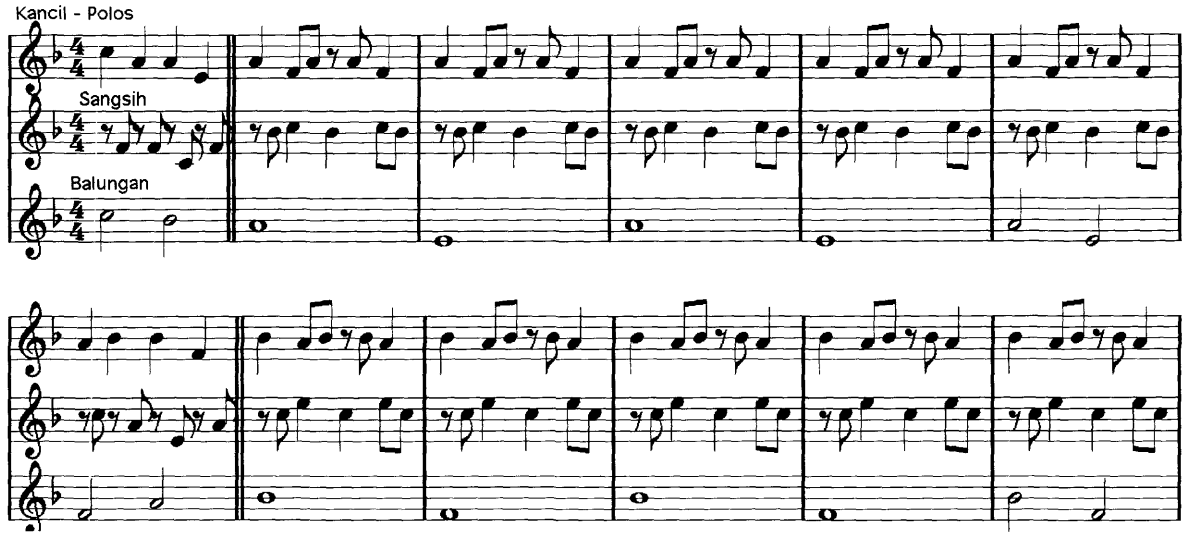
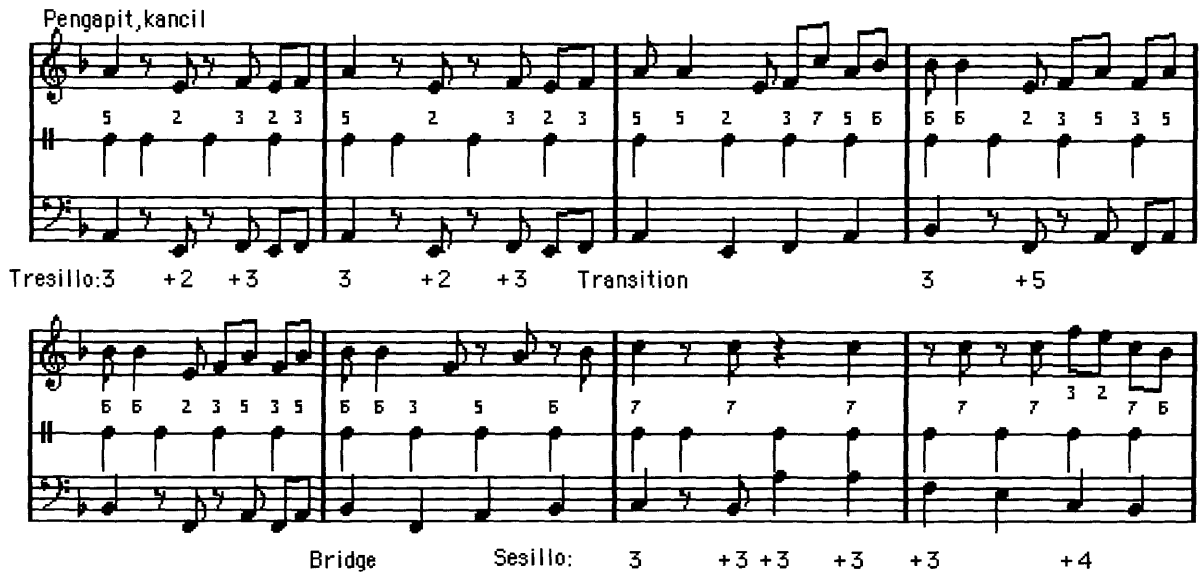
54 The term *kerep* is familiar to students of Javanese gamelan as "frequent" in reference to sectioning of large gendhing, and *sekar* in reference to *cengkok* for *bonang* (p. 19).



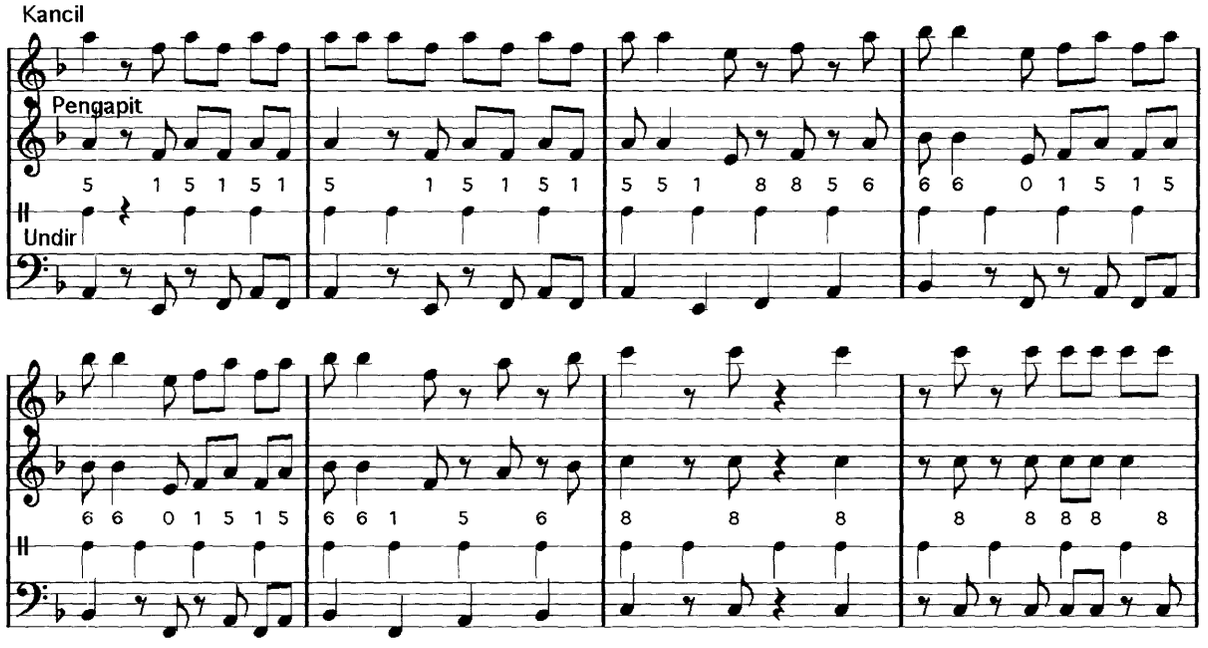
Ex 45e: Sabda – koncangan division

From this point on, the *kerep* theme is played in the bass (*undir*), and the *pengapit* and *kancil* sections alternate between *koncangan* of various forms and theme variations, two of which are:



Ex 45f: Sabda – thematic variation1

(previously given as exemplars of tresillo and sesillo) and later:



Ex 45g: Sabda - thematic variation2

In each case the nuclear melody is decorated in the *pengapit* part. The second example (ex45g) shows the different natures of *pengapit* and *kancil*: the louder midrange *pengapit* defines the phrase, often in rhythmic counterpoint to the *undir*, while the quieter treble range *kancil* simply fills in the line[55]. In each *undir* part (bass) we see a simplified version of the theme, and some deliberate rhythmic counterpoint against the upper parts (bars 3 and 6). Often each *pengapit* or *kancil* section would simply play the theme in rapid alternation.

The use of unison melodic passages is similar to the *seni jegog* genre, but the *kerep* section is based on the nuclear melody, with many possible elaborations. There are some motivic phrases at work here, although more research would be required to determine how widespread they are locally. This genre is closely related to the bronze *gamelan*, particularly in the use of the gong, *kelituk* and *gejek* accompaniment.

The overall structure of the *kerep* section may be written:

Pengapit	theme	variation	variation	*kotekan*	theme	*kotekan*	variation	*kotekan*	*kotekan*
Kancil	theme	variation	theme	theme	variation	*kotekan*	*kotekan*	theme	*kotekan*
Undir	theme	variation	theme	theme	theme	theme	variation	theme	theme

Fig 65: Sabda – variation strategies

Duration of Sabda 5min 5secs: *sekar batu-batu 1'55", kerep 3'10"*

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55 This process is often seen in Sundanese bamboo *angklung*; that the higher instruments sustain a pitch via constant shaking, while the lower *angklung* render the pitch with distinctive rhythms.

The *patus pengapit* and *patus kancil* both initiate activity in their sections, and in the ensemble as a whole. Of these two, the *patus pengapit* had absolute control, which seemed to pass temporarily to the *patus kancil.* Both decorated their parts more than their seconds, who sat either side of them. Some of that decoration involved rebound and omission ornaments, and a certain amount was a more vigorous attack. The seconds worked almost entirely in parallel octaves, while the two *patus* players would use occasional contrary motion or independent left hand passages.

In summary, the three bamboo *gambang* ensembles display common structural, compositional and interlocking devices, which have aspects in common with Javanese and Sundanese models, but without the scope for spontaneous elaboration or improvisation. The Balinese style is far more persistent than the other two, without the lightness of syncopation caused by left hand omission and interplay. Here the interplay is between paired players. Occasionally one may see some of the left hand alteration common to Javanese *gambang* in the work of the *patus*, but it is largely lost in the thick texture of the ensemble.

In section 5C some basic *kotekan/koncangan* three- and four- note patterns of Balinese music in general were examined. The processes of interlocking variation in *gamelan gambang* appear now because their patterns are in many ways more complex:

5D4a: *Gamelan gambang* – variation technique

- the *gambangs* are not paired, but set out in ascending ranges, the lowest and highest being an octave apart, so interlocking may happen between a pair, the ensemble, or not at all;
- the nuclear themes for the variation (*oncangan*) are not short cycles, but very long tunes (*kidung*), with little repetition; (see notes prior to each excerpt)
- these *kidung* melodies are played slowly, and the variations are slower than most other styles of *gambang*, so the players' difficulties are not the spectacular interlocking parts at virtuosic speeds characteristic of Balinese performance[56], but the choices from a wide range of alternative patterns to long melodies with little repetition;
- the performers play pentatonic variations (*oncangan*) on heptatonic *gambangs* that permit modulation[57], and so sequential patterns like those just seen in the bamboo tube *gambang* genres, are rarely available.

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[56] The genres for *gamelan gambang* performance (cremations, mortuary, agricultural cycles) are not appropriate vehicles for the showy and dramatic performance styles associated with *gong kebyar*, so it stands distinct as a style, with its steady rhythms and brittle texture.

[57] An occasional feature of *kidung*, although rare in Bali.

Schaareman's work is an excellent beginning to understanding *gamelan gambang* figurations. The basic variational forms are unison melody, various interlocking patterns (*oncangan*) around a three note cell with the goal tone as top or bottom note, and tresillic dyads. [58]He points out that the choices for left/right notes are severely limited, due to the construction of the instrument, each pentatonic mode (*saih)* having two notes among the three left hand notes, and three among the four right hand positions. This affects the creation of even the most basic interlocking pattern, *tengah:*

> "The basic *tengah* figuration is... not only the basis for *oncangan becat,* but other types of figuration are likewise derived from this basic type. The first and fourth tones of the [four note] *tengah* figuration are identical with the *pokok* tone; the second very often is an "off beat" played with the other hand, but it may be part of the figuration itself; the third belongs to the figuration. Usually, if the melody is rising the third will be the next lower one of the fourth figuration tone, but the next higher one if the melody is descending." Schaareman, 80, p473.

Eg:*Gangsa*	**3**.....	**7**.....	or	**7**.....	**1**.....	**3**.....
Pametit RH	**3**.5.4.**3**	..4.5...		..3.....	..3.....	**3**....**3**.
LH	.....	7.....7.		7...1.7.	**1**...7.**1**.	..7.1...

Ex 46a: Gamelan gambang - tengah figuration

In the first figure of ex 46a, the notes 5 and 4 are used as the filler tones, and in the second figure the same set of three notes is used throughout. Note that in contrast to most of the *gamelan* seen so far, this form elaborates after the goal tone, rather than before it.

The next level of figuration, the *becat*, is made up of four connected *tengah* figures (ibid, p474):

Gangsa	**3**.....	..**7**.....	**1**.....	..**3**.....
Cakat	33..4.33	..11.1..	11.1..1.	33..1.3.
	..55.5..	77..5.77.	..5.77.7	..77.7.7
Model	*aabb cbaa*	*aabb cbaa*	*aaba ccac*	*aabb cbab*

Ex 46b: Gamelan gambang - becat figuration

The *gangsa (saron)* melody above has the typical *gambangan* rhythm of a long and short stroke whose lengths are in the ratio of 5:3, in which the long stroke is called *agal* and the short stroke *kekenyongan.* The figuration anticipates the second note of each *gangsa* pair. Note that the four note *tengah* figures are essentially the same form rhythmically altered and extended: the first two are mirrors of the same symmetrical form; the third contains two mirrored parts; and the last is a slight alteration of the first two patterns. The kinetic preference is to play one or two notes in each hand before moving to the next part.

The next level of pattern is *nguwad,* a 32 note figure used in the second-*irama* style *gaguron* section, utilising a series of *tengah* figures, with a distinctive syncopation in the middle prior to the

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[58] See Salisbury for further modal analysis.

shorter *gangsa* note. (ibid, p 478). Unusually, there is no alternation between instruments in *nguwad*. The layers are simultaneous.

The last kind of pattern, *manggel*, is static, something like the *gantungan*, "hanging patterns" of Java and Sunda.

> For one who is unfamiliar with the melody it is impossible to tell the beginning of the third and fourth sections, since there is no pause in between. The only hint is given by the so-called *manggel* ; this is a rhythmic-melodic formula performed by the *gambang*... The *manggel* is melodically and rhythmically completely independent from the main melody of the *gangsa,* ay least this is how it seems on first hearing. (It) strikes the ear as "circular" or "static" due to the diverse tertiary figures...(i.e. tresillic and sesillic patterns and extensions).. The *manggel* lasts for the duration of 14 *pokok* beats. (ibid, p472)

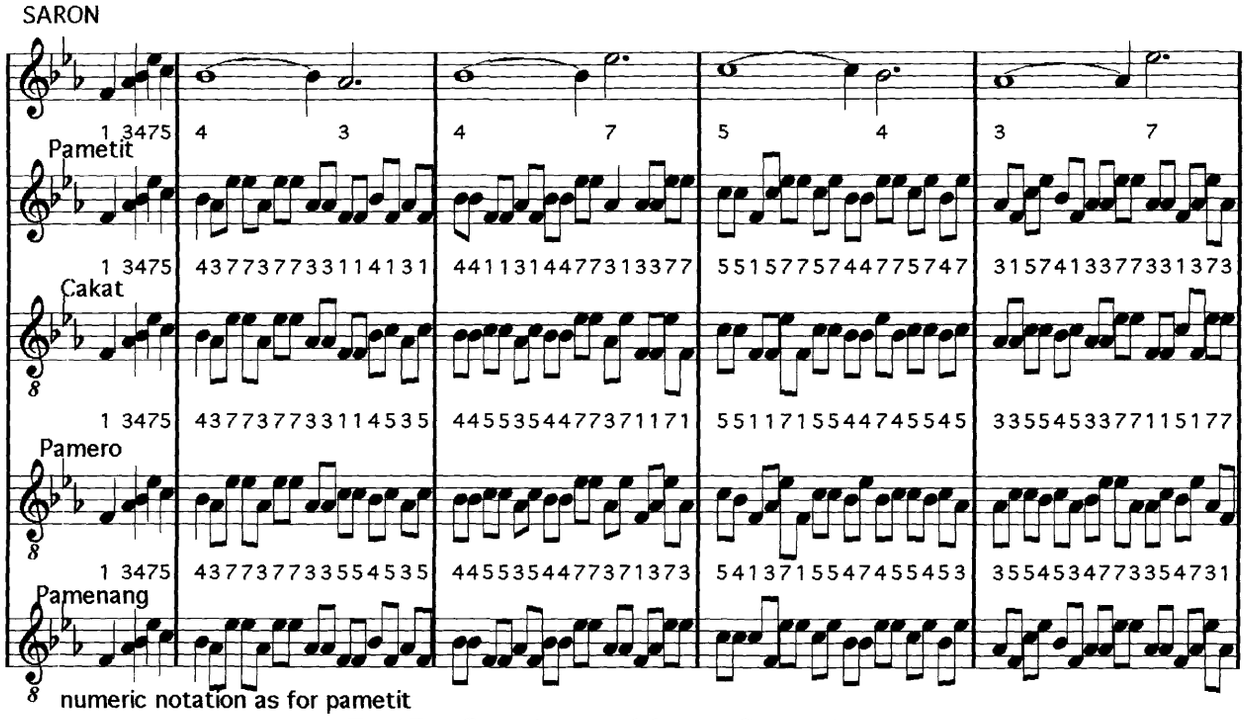
The *manggel* may feature some interlocking, but the resultant melodies are often unclear, when compared to other Balinese *kotekan* or *imbal* from Java. In fact, the construction of all these patterns appears to be concerned with note choices on individual instruments, not with interlocking at all. It may be thought that the interlocking happens somewhat arbitrarily through the kind of patterns chosen by each instrument. The largest *gambang,* called *pamenang* or *pegenter,* plays the basic paraphrase of the *gangsa* melody, and the *pemero*, next in size, interlocks with it. Since neither indigenous theory nor academic investigation has produced clear guides to these processes, the following analyses will only serve to investigate this enigmatic genre on a superficial level.

5D4b: *Gamelan gambang* analysis 1: Condong (kapingkalih)

The combined staff/numeric transcription below is based on Schaareman's numeric transcriptions (ibid, p474-8). He notated in numeric blocks of eight pulses which I have reproduced as bars of 8/4, each bar comprising sixteen *gambang* notes or two irregular (5:3) *gangsa* notes. The indications for right and left hand work are not visible here. This is the second section (*kapingkalih*) of the piece Condong, which follows the *kawitan* (introduction, see 5A6).

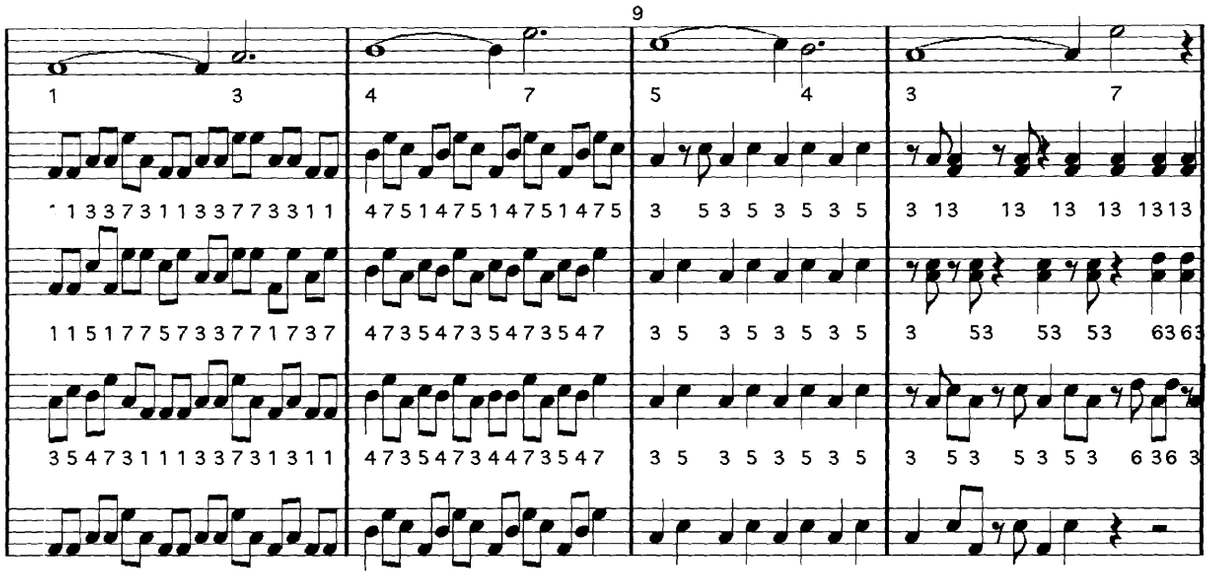
The score (Ex 47a below) is arranged from highest to lowest, with the metallophone (here called *saron*) at the top, then the four *gambang* in descending order. because all parts are in parallel octaves, only one note per part is indicated. The numbering follows Schaareman's system.

The *kidung* excerpt is `13475(unison) then 4347 5437 1347 5437 1517 5715 3714 4754,`



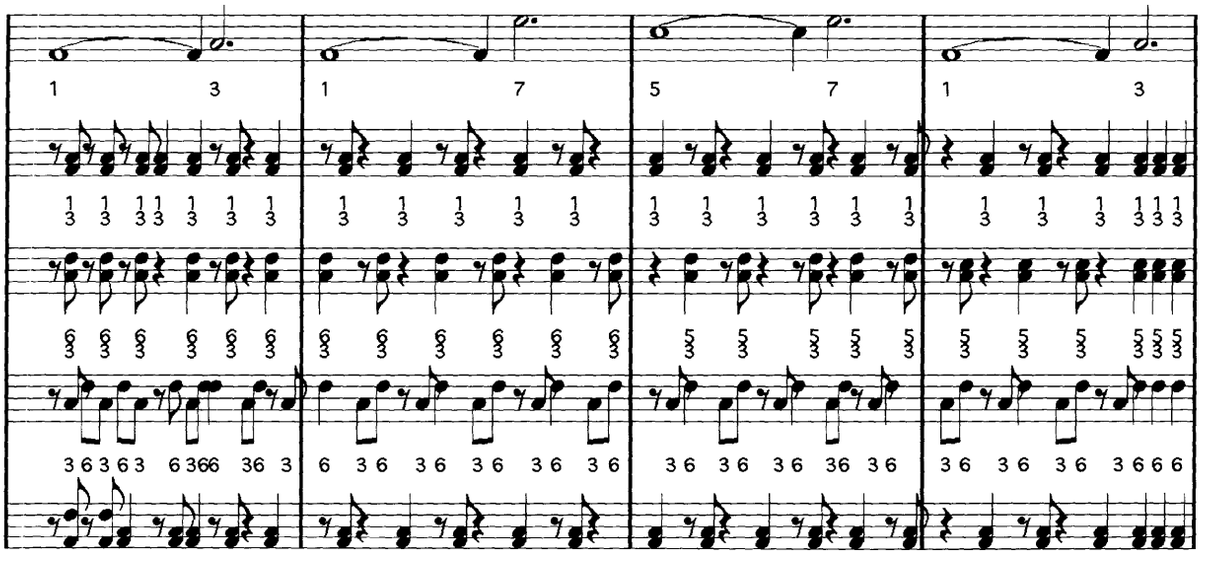
Ex 47a: Opening and becat figuration

The first five unison notes comprise the *kawitan*, after which the four *gambang* proceed with similar *becat* figurations which soon become distinct from each other. Most of the figuration bars use four notes: the two derived from the *gangsa* part, and two others chosen to indicate the direction of the melody. Thus in the *pametit* and *pamenang* parts, in the first half of the second bar, the *gangsa* notes descend from 4 to 3 and the directional note is a higher one (7); in the next half, 3 ascending to 4, the directional note is a lower one (1); for 4 ascending to 7 in the next bar, a lower (1); and for 7 descending to 5 an upper (7). 4 and 3 are constant notes in these two bars, and the complete set of pitch choices is 1, 3, 4 and 7. The *cakat* and *pamero* parts present different choices, using all five notes of this mode (1, 3, 4, 5 and 7) over the two bars. After doubles, figures of the form *aaba* are the most common throughout these bars, and Schaareman's data confirms that every one of these represents LLRL or RRLR alternating hand work. On a broader view, each eight note pattern seems to lean towards a binary form (such as *aabb cdad* or *aaba ccbc*), a ternary form (such as *aa bcbb aa* or *aba ccbc d*) or what I termed a "dispersed" form, either using all the notes (*abcdebaa*) or ones in which contain no three note cells (*a.bcdabcdabcdabcdabc*). [Clefs and key signatures follow previous pattern.]



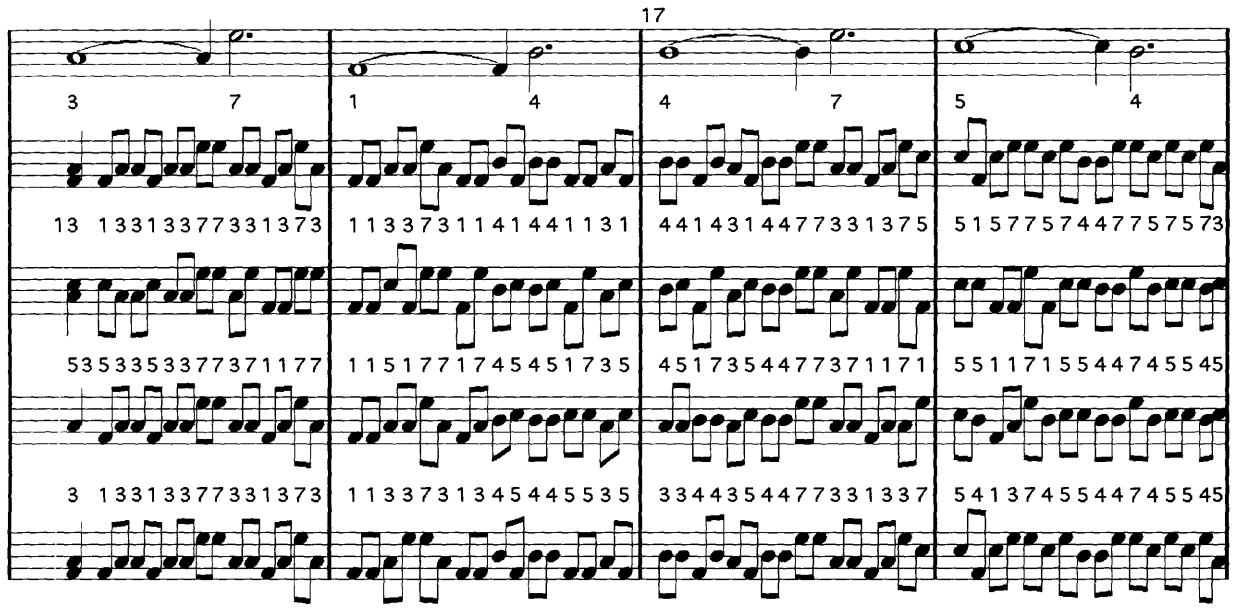
Ex 47b: Becat into manggel section

Each of these four bars represents a different figurative approach: the first concludes the *becat* section; the second is a transitional pattern, each *gambang* playing a part in the form *a-bcdabcdabcdabc*; the third bar is the beginning of a *manggel* section, all *gambang* playing 3 and 5 in unison or octaves; and in the fourth tresillic static patterns take over – dyads or alternating notes.



Ex 47c: Manggel conclusion

The *manggel* section continues in this excerpt, interlocking in the typical static way, extending the tresillic and sesillic patterns into longer versions until three unison chords at the end of the line herald a new section. Note that while the mode of the *kidung* and the ranges of the *gambang* are constrained to three or four notes out of the pentatonic scale, they are not the same pitch choices.



Ex 47d: Second becat section

The last four bars represent the end of the *manggel*, and the return of *becat* figuration. The six notes following the chord in the first bar echo the beginning of the first *becat* section, a motif of the form *abbabb*. Subsequent bars are *becat* figures from the same stock as those seen in the first section. The most common of these, combining first and second sections, are: the binary shape *aaba ccbc* or *aaba ccac* (12 occurences); the ternary shape *aabbcbaa* (11 occurences) and a shape *aabbcbab* (8 occurences) which combines binary and ternary characteristics. Thus there is a confluence of Sutton's idea of common motif shapes with Salisbury's observation[59] regarding mode and three note cells within the mode (see 5D7 below for further investigation).

This section of the piece *Condong* comprises a unison opening 1 3 4 7 5, followed by a 12 *pokok* beat *gending* in *becat* figuration 4 5 4 7 5 4 3 7 1 3 4 7, a *manggel* section 5 4 3 7 1 3 1 7 5 7 1 3 3, and a second *becat* section 7 1 4 4 7 5 4. Strategies in figuring the *gangsa/saron* part involve a stock of *becat* motifs, and extensions or variations necessitated by turns of phrase; figuration for *manggel* sections, and starting and linking phrases. Melodic range is severely limited on the *gamelan gambang*, and the layered parts tend to produce a dense texture rather than composite melodies. In this example very little true interlocking occurs.

5D5: *Gamelan gambang* 2: piece in *saih* Kusumba

In transcribing an excerpt from a rehearsal cassette of *Gamelan gambang* I received in Tenganan, I found some, but not all, of these forms. Although McPhee and Schaareman regard the *gambangan* rhythm as a proportion of 5:3, I found in this example that a 3:5 division fitted the flow of the music better. The transcription begins with some unison/parallel octave work (ex 48a below).

The *kidung* excerpt is `6176 1364 6443 1343. (1=F,3=Ab,4=Bb,6=D,7=Eb)`

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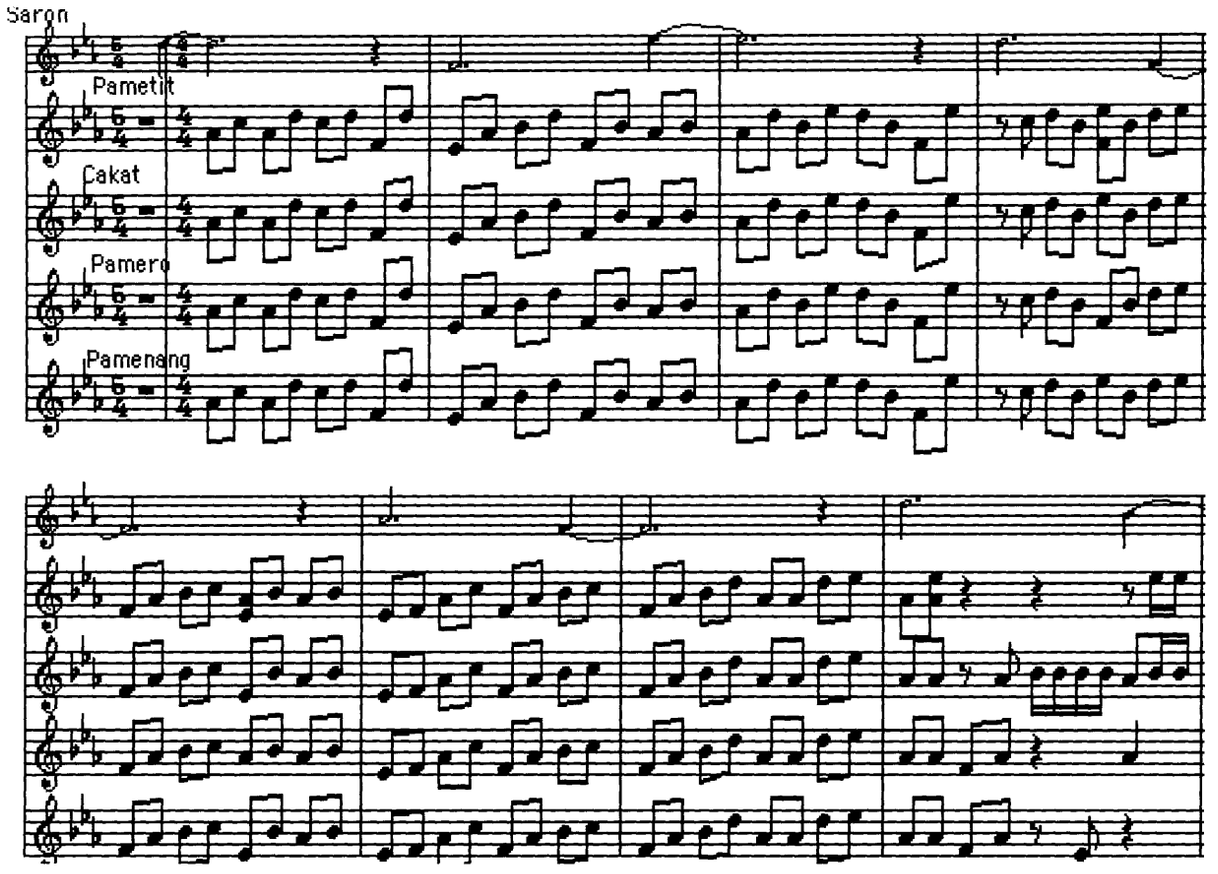
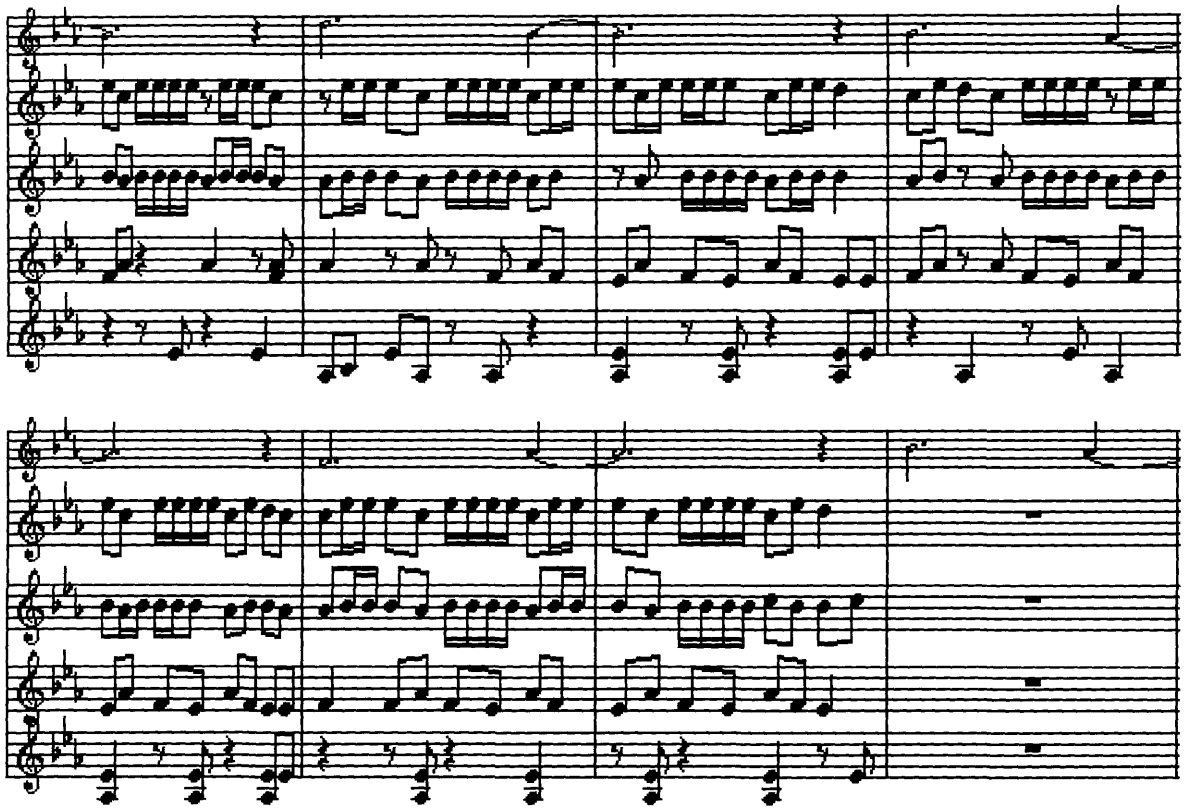
59 Pp 23-25 Salisbury 91.



Ex 48a: Kusumba - opening

So far none of this fits exactly within Schaareman's models – the melodies in the first seven bars use all five notes of the *saih* (mode) and resemble neither *tengah* figuration nor *becat*, but this section may be an extended *kawitan* (introduction). At the end of this section the *gambang* begin to play independent parts, some involving mobile melodies, some with rebound[60] on two note patterns, some with tresillic dyads. This interlocking produces some resultant melodies.

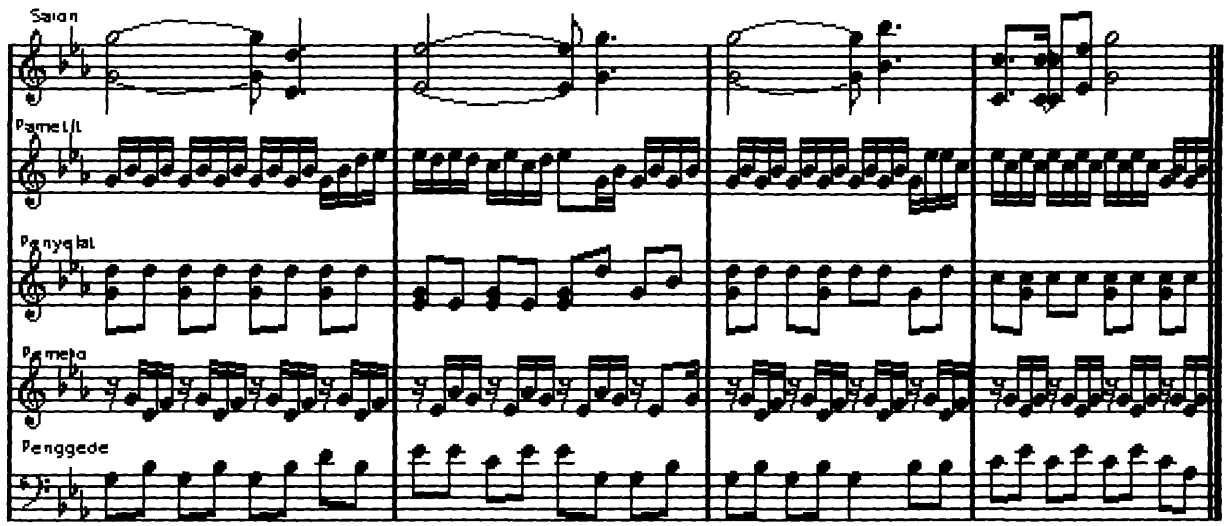
[60] A rebound far more brittle than that of Sunda or Java.



Ex 48b: Kusumba - 2nd section - similar to manggel

The next section (ex 48b above) does bear similarities to Schaareman's *manggel* figuration - most of it is stationary, and the three-against-two patterns also fit the model. The remainder of the excerpt may be described as alternations between the regular, mobile style and the static style, with rebounds and faster diminutions, contrasting with Schaareman's example, as does the excerpt from McPhee[61] given here (Ex 49). The *kidung* excerpt is `5 2 3 5 5 7 135(tresillo).`

5D6: *Gamelan gambang* 3: figuration from McPhee



Ex 49: Gamelan gambang figuration from McPhee

[61] Music in Bali p279.

McPhee's example confirms an interlocked relationship between the two lowest parts (*pamero* and *penggede*) and demonstrates sesillic figures in the third and fourth bars of the *penyelat* (*cakat*), which was associated in Schaareman's work with *manggel.* There also appears to be some parallelism between *pametit* and *penggede* (very much like *bonang* and *bonang panerus* in Central Java, in that one plays the other's phrases in double density), which also display a more melodic contour than previous examples. The principle of *becat* seems to be entirely lacking, apart from the second bar of the *penggede*, and the parts seem far more differentiated by role than Schaareman's. The rhythmic variation at the end of the *gangsa* line is singular.

Perhaps all this confirms the regionalist principle that villages will seek out differences not only in *oncangan,* but in overall approach to affirm a local style. The models described by Schaareman work well for his transcriptions, but seem less relevant to other recorded examples. On the other hand, Schaareman's examples contain no reference to rebound ornamentation, which is definitely present in the other examples. It seems that no models exist to define and clarify all *gamelan gambang* performance, but it may be said that despite the melodic constraints of the *gambang* the genre is capable of producing a wide variety of elaborations over the *gangsa* melodic line, which all display a number of general *gambang* characteristics, which will be summarised presently.

5D7:Three note cells in gamelan gambang

Both Schaareman and Salisbury made note of the incidence of three note cells in both *kidung* melody and *gambang* figuration in this genre. The pitch choices for the seven pitches oIOAEUa are differently configured for each *gambang*[62]. These limited choices almost force the use of three-note cells, or at least. make it the most comfortable strategy.

Range of notes	Left / Right
Pamenang & pametit:	oIO / AEUa
Pamero:	OAE / UaoI
Cakat:	EUa / oIOA

Fig 75a: Range of notes in *gamelan gambang*

Within the restrictions of the five common pentatonic saihs, the note choices become:

Gambang	Marga	Sondong	Sadhi	Kasumba	Semara
Png/Ptt:	.IO/A.Ua	oI./AEU.	o.O/A.Ua	oi./AE.a	oIO/.EU.
Pamero:	OA./Ua.I	.AE/U.oI	OA./U.oa	.AE/.aoI	O.E/U.oI
Cakat:	.Ua/.IOA	EU./oI.A	.Ua/o.OA	E.a/oI.A	EU./oIO.

Fig 75b: Note choices in *saih*

14 out of these 15 patterns have two notes in the left hand and three in the right. If we look at the three note cells leading up to each tone in *saih* Marga (examination of other *saih* will produce very similar results), we get these patterns:

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[62] McPhee, Schaareman, Salisbury and Tenzer

leading to:	**I**	**O**	**A**	**U**	**a**
Png/Ptt:	.I-/-.Ua	.IO/-.-a	.IO/A.--	.-O/A.U-	.--/A.Ua
Pamero:	--./Ua.I	O-./-a.I	OA./--.I	OA./U-.-	-A./Ua.-
Cakat:	.Ua/.I--	.-a/.IO-	.--/.IOA	.U-/.-OA	.Ua/.--A

Fig 75c: Three-note cells in *saih Marga*

In three cases (underlined) all three notes are in the right hand, but all others have two in one hand and one in the other. Most of the figuration is in three note cells that favour one hand over the other, but still use both hands. Those patterns lying entirely in the right hand might be discarded for a more kinetically comfortable pattern. Four or five note cells (or dyads during the *manggel*) are used sparingly in Schaareman's examples, often to signal a change of section, yet occur more frequently in McPhee's example and the Kusuma piece transcribed above.

5D8: Summary - Balinese gambang styles

Three distinct styles emerge from this sample:

- the *tingklik* style, which blends the *kotekan* of *gender wayang* with improvisations on popular songs, and is characterised by interplay between two essentially equal and balanced parts, in a relaxed and reticent manner;
- the *gamelan gambang,* which applies functional motifs (*becat, manggel,* rebound and static patterns) to four different instruments in order to figure the irregular *gangsa/saron* melody during long, non-repetitive suite-like pieces, within constraints unique to the ensemble, in an ambience of seriousness and ritual. It does not display the level of precise interlocking shown in the other genres, yet its term *oncangan* is clearly related to *joged bumbung's* technique/term *koncangan;*
- the *joged bumbung* and *seni jegog* ensembles, which may derive some *koncangan* from *tingklik*, but a large part comes from *gong kebyar* and other Balinese *gamelan* genres, as does the dynamic and dramatic nature of the performance. The *joged bumbung* ensemble replaces the bronze ensembles in many parts of western Bali. *Seni Jegog* stands alone within *gambang* ensembles because of its tetratonic tuning and because processes of dynamic terracing and textural orchestration have been refined to a high level, but these link it to *gong kebyar* and *gamelan angklung*. In contrast the *Joged Bumbung* style is more along the lines of some of the Javanese idioms - pentatonic tuning, one primary nuclear melody, and the *sekar batu-batu* prelude has some similarities with Javanese preludes such as *celuk, bawa* and *sulukan*. These two genres are meant to be a focus of attention and a source of excitement, where the previous two (*tingklik* and *gamelan gambang*) are music played in the background, one for pleasure, one for spiritual purposes.

The tonal material for all four ensembles shows great variation. *Rindik/tingklik* has material in short cycles, and the *kotekan* tend to be three note cells. Variation is produced in the precise ordering of the *kotekan*, and seems greatest in the transitional phrases. *Joged Bumbung* has a distinctive tradition of preludes and fast main sections that creates opportunities for unison playing, unison alternation (*nuutin*) and *koncangan*, which may be three or four note. *Seni Jegog* has strings of compositional variants on a string of nuclear melodies, with sectional contrasts, and a prominent use of *suling*. The tonal material is significantly constrained by the four note scale, and unison alternation is as common as *koncangan.* In these two idioms there is an emphasis on dramatic unity, there is constant movement between complex embellishment and cued goal points - usually the simultaneous sounding of the goal tone. The tonal material of *gamelan gambang* is complex and much has still to be uncovered. It is not a popular genre, and requires dedication to be appreciated. In reading Schaareman, Tenzer and Salisbury, it becomes clear that the evolution of *oncangan* is connected with identity (se Chapter 6 for a more detailed discussion.)

Some of the general *gambang* characteristics from Java and Sunda may be compared here:

- parallel octave playing is more strict than the examples in Java and Sunda. Rebound playing is found, but the bamboo beaters create a more brittle sound.
- fast *gambang* playing is generally desirable in the bamboo tube genres, but *gamelan gambang* is more austere, and moderately paced at its fastest.
- the density of the *gambang* parts or their resultant melodies is constant, and four to sixteen times the speed of the nuclear melody, which is generally played in the bass register, though by the metallophone (*gangsa*) in *gamelan gambang*;
- directional voice-leading is found in the resultant melodies of the interlocking parts, usually from two notes above or below, consistent with Java and Sunda goal-tone phrases.
- three note cells form the basis for many of the motifs leading to goal tones> While many of these are resultant melodies of paired instruments, they occur as a primary form in *gamelan gambang;*
- the genre allows for variational approaches to be ornamental or improvisational, depending on the skills and inclination of the player.

However, there are some radical contrasts as well:

- the nuclear melody is often a sequence of goal tones. There are few 'filler" notes or phrases, and the nuclear melodies are short, except for the *gamelan gambang kidung* melodies, in which the nuclear melody progresses in note pairs almost throughout the piece;
- interlocking patterns are found in all *gambang* genres in Bali, generally in pairs;

- the central tone of the interlocking patterns appears immediately, unlike the case of many Sundanese *carukan* or Javanese *cengkok*, where the goal-tone may only appear briefly before the end of the phrase;
- there is generally a leader in the ensemble (e.g. *patus*)

Textural variety is far more significant than in Java or Sunda, and is not restricted to orchestral choices. The quick decay of the struck wooden or bamboo note, which produced the *banyumili* –"running water"- technique in Java and Sunda, has different implications in the paired playing of Bali. In *seni jegog* and *joged bumbung* the loud and soft timbres are quite distinct. Playing the bamboo tubes gently allows the vibrations of the air tubes to come to the fore. Together with the *suling* and the "beats" created by tuning differences they produce the shimmer associated with Balinese arts and trance ritual. The bright sound of the hard beater brings out the "wood" note, and is used for abrupt stops, interjectory phrases and parallel octave passages. The shortness of the *gambang* note helps in this compositional style, where sudden ensemble stops, decelerations and accelerations are expected devices, at least since the early 20th century creation of *gong kebyar*, and the concurrent influence of American Jazz musicians. The austere and brittle sound of the *gamelan gambang* is suited to its task of accompanying society's communion with the dead and animist forces.

Gambang are almost self-consciously given a secondary place in Balinese culture, behind the bronze Gongs, yet they permeate the musical landscape more constantly than other sounds. The ensembles tend to be extremely regional, yet the techniques of all four ensembles have things in common. In contrast with the bronze *gamelan* performances of Central Bali, the bamboo ensembles perform in village clubs and for important village rituals. While not as explosive as *Gong Kebyar*, the *gambang* genres are rich and full of variation, some of which suggests commonalities with parts of Java.