

Chapter 3 - The *Gambang Kayu* of Java

Having dwelt for a while on the description and origins of the various *gambang*, it is most appropriate to make a start on the Javanese *gambang kayu*, which still covers a wide range of variants. It is certainly the instrument most often described as *gambang*, and is found in Javanese, Sundanese and Cirebonese ensembles. The playing style of Central and East Java is consistent, but has regional styles within a continuum. Much of what we will see hinges on the use of *cengkok*, variable phrases appropriate to specific goal tone changes.

Since much of the history of Central Javanese *gamelan* was covered in the last chapter, little more needs to be said of the regional background of Central Javanese courts, except to stress that the island of Java contains the vast region of Sunda and the city of Jakarta, which are not regarded as *Jawa*, the ethnic Javanese, but as part of Indonesia. The practice of *gambang*, of *gamelan* music and of its research in Central Java are conceptually dominated by the customs in the major cities of Yogyakarta and Solo (Surakarta) – see fig 23 below.

This study of *gambang* practice also investigates the predicaments and responses of border regions to dominant styles. and the Central Javanese tradition represents a dominant style common to all three city-defined border regions – Cirebon, Banyuwangi and, to a lesser extent, Banyumas. The Cirebonese call themselves *orang Jawa* (Javanese people) and speak Javanese, but Cirebon (just off the map) will be included in the following chapter (Sunda and Cirebon), because its playing style has far more in common with the Sundanese model, and because it is included in the regional government of Sunda. The smaller city of Banyumas, with its unique *calung* tradition¹³, lies in the west of Central Java.

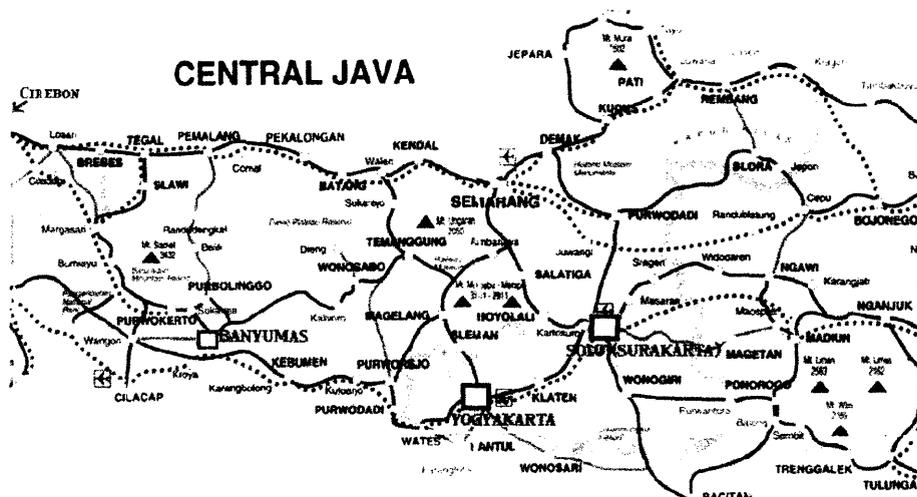


Fig 22: Map of Central Java

¹³ See Sutton 91 for a more complete study.

East Java is covered in this chapter, though there is much about the *gambang* and the wooden-barred *saron* (*caruk*) of the East Javanese island of Madura which remains to be investigated for a more complete picture of *gambang* practices in regional Java. East Java comprises remnants of the 13th-15thC Majapahit (comprising much of East Java) and 15th-16thC Mataram empires (Lamongan and Gresik), the vast capital city of Surabaya, the notorious regions Ponorogo and Madura, the Hindu Tenggerese of Mt Bromo, the southern portion and Banyuwangi. Particularly relevant to this study are Surabaya, Malang and the ancient temple complex of Panataran – see fig 24 below. While Central Javanese *gamelan* is popular throughout these regions, many distinct indigenous traditions also flourish. The other region of Java not covered here is its easternmost region Banyuwangi – the third border region – which lies across the strait from Bali, and has far more in common with Balinese practice than Javanese. It will be covered in chapter 4.



Fig 23: Map of East Java

The Jakartan *gambang* in *Gambang Kromong* ensembles should be mentioned either here or in the section on Sunda, as it belongs to both those classifications. Unfortunately I have never seen one, and only heard them on recordings (Yampolsky: *Music from the Outskirts of Jakarta*, cassette releases *Pasar malam*, *Jala Jali*, etc), which confirm a North Sundanese rather than Central Javanese flavour.

3A: The Javanese *gambang* and its basic styles



Fig 24: 18 keyed *gambang* from Yogyakarta

The wooden keyed *gambang* of Java presents a consistent playing surface, with variations at the extreme ranges. Most of the instrumental variation occurs in regard to the box (*grobogan/ancak*) and the endpieces. The Javanese *grobogan* sits on a small truncated pedestal, while the upper planks - the sides and end pieces - slant outward 7° to 20° from the plank that joins the pedestal and *grobogan*. The endpieces are usually decorated in similar style to the *bonang* or gong stand. Sutton (75) portrays the Yogyanese *gambang* as having no pedestal and very plain endpieces, but many are in the modern Solonese style described above. Plain box *gambang* with no end pieces, no pedestal, and little or no slant outward are sometimes found in East Java, but are not common.

A single *gambang kayu* is always played by a single person, either in the full *gamelan slendro/pelog*, or the smaller *gadon* ensemble of soft instruments - commonly *rebab*, *gender*, *suling*, *slenthem* and singer. Two *gambang* are usually provided in each *gamelan* or *gadon*, one tuned in *slendro* and one in *pelog*. The *pelog* instrument generally has an extra set of four bars, allowing for the alternative mode in which the four 1 bars of the *patet bem* tuning may be exchanged with the four 7 bars for *pathet barang*. (See 3B3 below for more detail).

The standard modern range in Java of a *gambang* in Central Java is considered to be 3̣5̣6̣1̣2̣3̣5̣6̣1̣2̣3̣5̣6̣1̣2̣3̣5̣, 22 notes in all, covering four and a half octaves, though most older *gambang* have a smaller range, 6̣ to 3̣, only 19 notes, as in fig 24 above. This range corresponds to that of the *gender* and *siter*. That is, although it has an extra octave of 5 notes, its effective melodic range in parallel octaves is only two and a half octaves. In East Java it is common to find ranges one note higher than the Central Javanese range, 1̣ to 5̣. The newer 22-keyed *gambang* have just over a three octave melodic range. No doubt the additional notes in the modern instruments allow for all such regional variation. Kunst (1927) mentions three registers for the *gambang*; *ngisor* - low, *sedeng/tengah* - middle, and *ngelik* - high. He shows that the term *ngelik* corresponds with the practice of ascending to the high register in the *ngelik* section that follows the initial *ompok* of a Central Javanese piece (*gendhing*). That is, in the main instrumental section the

gambang plays in a middle range, but during the *ngelik* section the melody ascends (generally a fifth) and the *gambang* decorates in its highest, *ngelik* octave. (See 3D1 for more analysis of a *ngelik*). The exact locations of these ranges are not shown, and clearly the left hand range would be an octave below the right, but the lowest register would begin on the lowest note 6 (on older instruments), and if each range is an octave, then the left hand has three complete octaves, while the right's is one note short in the top register of many instruments. There are many phrases (*cengkok*) in which one sees the right hand miss a beat while the left plays up to the high 5. The term *ngisor* is not mentioned in contemporary *gambang* literature.

Fast relative tempo

One primary characteristic is that the *gambang* almost invariably plays fastest, though the *kendang* (drum) and *siter* may play equally fast, but not as consistently.

Few Javanese today will play the *gambang* slowly. Sutton refers to the *gambang* in Central Javanese *gamelan* as a "density referent" (85). As one of the busiest instruments it keeps a steady beat of the same density as the *bonang panerus*, *gender* or *kendang*. But those instruments will rarely play unbroken melodies at the *gambang's* speed, using instead elegant rhythmic decorations that display aspects of the fastest beat. The other density referent is the *peking*, which will generally settle into half the speed of the *gambang*, but playing continuously.

In other traditions speed may be sought by other instruments. Sutton (:91,p167) notes "The fastest pulse in East Javanese *gamelan* performance, manifest on the *gambang* in soft-playing style and on the interlocking between two *saron* or between *bonang panerus* and *peking* in loud-playing can be as slow as about 110-120MM (110 -120 pulses per minute) but can reach tempos of 600MM in the same performance".

Parallel octaves

Playing in parallel single octave intervals is the common practice throughout Java, and most of the three to four octave range is utilised. There will be frequent short-lived deviations from parallelism, and though they are rarely emphasised, they are an important part of the sound of the *gambang* and its player's skills. The East Javanese style follows the same tendency.

Mallet work - Rebound ornamentation and damping

The beaters of the *gambang* are made to bounce. This facilitates both rebound work and fast passages. The player is also aware of key locations, determined by modal principles (*pathet*), or the goal tone series (*balungan*). As a result, his attention is divided between parallel movements leading to desired locations and tactile sensations of producing effects such as rebound or left/right alternation, what a Western musician might call a "feel"¹⁴. The rebound (Javanese: "*geter*" see Sutton:91, p58, who calls it ricochet) is commonly used as an ornamentation within *cengkok*.

¹⁴Such divisions are typical of right/left brain coordination, accentuated in non-verbal activities.

Particular uses of *geter* are found in the *gendul kopi/gendul keplak* phrase taught to me by Paimin (ex 3 below), and in the practice of *grontolan* (frequent *geter* - see Sutton:91, p58). (There is not a great difference between the *keplak* and *kopi* phrases, and they should be regarded as complementary halves of one phrase).

Gendul keplak	gendul kopi
. 66 . 22 . 6 1 2 1	66 . 22 . 6 1 2
5 6 5 6 5 6 1 2 1	6 5 6 5 6 1 2

Ex 3: Gendul keplak/ kopi phrase

Kunst (33) mentions *tutukan kuna* - "struck in antique style", a slower playing, perhaps like the Cirebonese slow *balungan*-like style, and *tutukan rangkep* - the modern idiom which is further divided into two styles. *Toyamili* (= running water) apparently identical to *banyumili*, discussed above, while *keter* or *grontolan* are described as

the kind of playing in which the right hand *tabuh* touches the keys slightly later than the left-hand one, and, moreover, often touches one and the same key a few times in quick succession, which tends to give the sound picture a somewhat restless, fussy or shaggy character, compared to which the *toyamili* playing is tranquil, smooth and serene. (p188)

This does not quite agree with modern interpretations of the terms, nor modern aesthetics, but opens investigations into the grey areas between rebound and note damping - a technique practised on most of the bronze *gamelan* instruments. On the common metallophone (*saron*), damping is effected as a new note is struck by holding the end of the bar in question, and on the horizontal knobbed gongs (*bonang*) each beater may rest on the knob of the gong to damp unwanted notes, this practice most closely resembling *gambang* damping. However, on both *bonang* and *gambang* this damping produces a softer muted note, which becomes part of the overall orchestration. In the hands of different practitioners the technique may move between a slower damping style and rebound. Some players can achieve a multiple rebound.

Having described the instrument and its basic performance style, let us turn to the other instruments of the *gamelan*, and the governing principles behind the music played on them, some of which are common to the *gambang*.

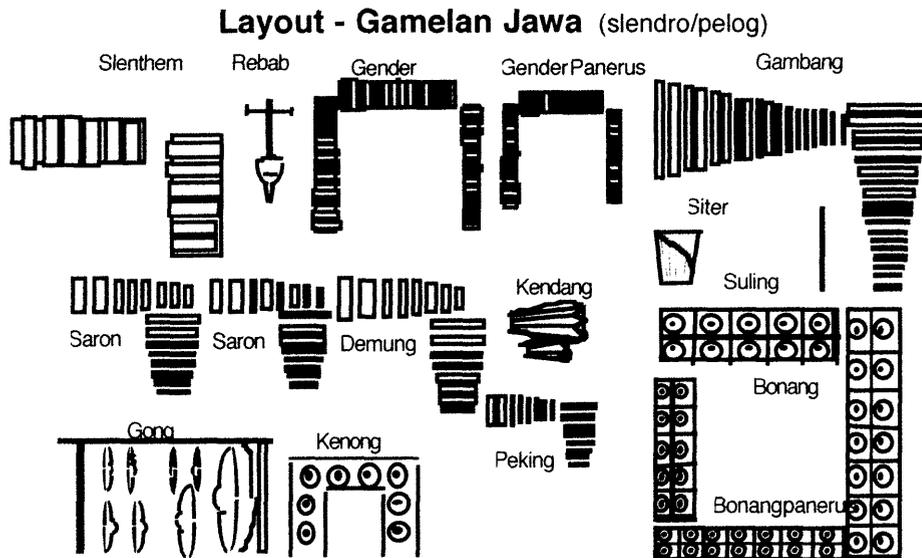
3B: Central Javanese *Gamelan* Music

At the outset it should be noted that Central Java has been dominated by a complex court system for many centuries, a court (*kraton*) that concerned itself with absorbing all the concepts and practices of successive waves of Buddhism, Hinduism, Islam (see Sumarsam 92). and Christianity, along with negotiating trading and administrative policies with those nations espousing those beliefs. The evolution of the *wayang kulit* shadow puppets, the *langendriya* dramas and even the instrumentation of the modern Javanese *gamelan* orchestra are directly connected to *kraton* responses to, respectively, the Islamic prohibition of depicting living things, the Dutch fondness for opera and oratorio, and the European orchestras that rivalled the Javanese for intricacy.

Central Javanese *gamelan* is premeditated far more than its neighbours, by which I mean that many aesthetics, canons and models will affect choice of repertoire, improvisation, and deportment even before the slow and deliberate structures of the pieces are commenced. This has made the Central (and largely mid-East Javanese) *gambang* style radically different from all those around it. This cultural gravity has been deepened by the popular scientific view of the late colonial period that Javanese Court *gamelan* was a high cultural form that rivalled any of the West. Many who held that view tended to ignore other Javanese *gamelan* forms and traditional musics from other islands. Some of the terms used to describe Central Javanese music are the result of recent indigenous processes to rival the west, and validate Javanese culture. These considerations bear upon any examination of the totality of the orchestral instruments and musical descriptors applied to the practice of *karawitan* - the musical structures of Central Javanese music.

3B1: Central Javanese *Gamelan* Instruments

The *gamelan* orchestra of Central Java can be the largest in Indonesia, and serves as a comprehensive introduction to other regional orchestras. The *gambang* is the only wooden keyed instrument in the orchestra, though there are usually two in each orchestra, the *slendro* and *pelog* versions. It is usually placed to the side and front of the orchestra.

Fig 25: Javanese *gamelan* layout

Many modern textbooks begin by dividing the orchestra into *wilah* (keyed), *pencon* (knobbed gong), and miscellaneous sections, and before explaining their musical roles. I shall follow that practice. There are often three registers in each family - low, middle and high. The *siter panerus* is a recent addition, and the *bonang panembung* is regarded as obsolete. Some instruments have a "familiar", common name as well as a proper one, as shown underlined in the following table.

Family	High	Middle	Low	Nature of instrument
Wilah (keyed)	<i>Saron panerus</i> <u><i>Peking</i></u>	<i>Saron barung</i> <u><i>Saron</i></u>	(<i>Saron</i>) <u><i>Demung</i></u>	Loud bronze bars
	<i>Gender panerus</i>	<i>Gender barung</i> <u><i>Gender</i></u>	<i>Gender panembung</i> <u><i>Slenthem</i></u>	Soft resonant bars
Pencon (Knobbed gong)	<u><i>Bonang panerus</i></u> <i>Kempyang</i>	<u><i>Bonang barung</i></u> <i>Kenong, ketuk</i>	<i>Bonang panembung</i> (rare)	Two rows of kettlegongs Kettlegongs in individual boxes
Miscellaneous	<i>Siter panerus</i> <u><i>siter</i></u>	<i>Siter barung</i> <u><i>Celempung</i></u>	<i>Gong, kempul</i>	Suspended gongs Plucked zither

Fig 26: Table of Javanese *gamelan* instrument families

It may be because of the fact that a *gambang* already has three registers (*ngisor*, *sedeng*, *ngelik*) that it has never been made in a smaller (*panerus*) form. The different families have distinct roles, which are subject to regional variation across Central and East Java.

3B1.1: *Wilah* (leaf shapes or keys)

There are a number of metal keyed instruments in two families, the **saron** and **gender**. The *sarons* are characterised by bars that are long, thick and heavy, resting upon a cushioning along the edges of a trough resonator carved from a piece of dense wood, or else made as a *grobogan* like a smaller version of the *gambang*.

The **gender** family are characterised by lighter, thinner bars, suspended by cords and bracepins over bamboo tube resonators held together in a wooden frame. The *slenthem* and the *saron* family

play single notes, damping the sound of the previous note with the spare hand. The *gender* are played with short-stemmed padded-head beaters, similar to *gambang* beaters, in contrapuntal style, damping the unwanted sounds with the thumb or palm. They have a soft sound, barely audible to Westerners in most performance. The *gambang*, having keys, belongs to this category, and its technique lies in many ways between *saron* and *gender* technique.

3B1.2: *Pencon (knobbed gongs)*

This second category comprises all the gongs: the large hanging (*gantungan*) **gong** (*gong agung*, *gong suwukan* and up to 14 **kempul**); the **kenong**, **ketuk** and **kempyang** - tall, medium and small kettle gongs which sit on individual cradles in wooden frames of up to three units. These instruments all mark out structural points, which guide the *gambang* player in performance. Also included are the **bonang**, as small as the *kempyang*, sitting in frames of up to fourteen kettle gongs in double rows. The *bonang* are found in the *panerus* and *barung* pitch ranges. The *bonang panembung* is only found in Yogya, and rarely used even there. The *bonang* have very distinctive variation techniques, and the *bonang panerus* technique has some relevance to the *gambang*: while the arm movements are spatially quite different, the actual notes sequences occasionally show similarities, and the *bonang panerus* often plays at the same speed (density referent) as the *gambang*.

3B1.3: *Miscellaneous*

Other vital instruments, related to the **gambang** not by form, but rather by function and sophistication, include: the **rebab** (a bowed spike fiddle with two strings) which plays a major role in cueing sectional changes for the rest of the *gamelan* orchestra; the **kendang** (drums) - a pair (*kendang kalih*) and a single *ciblon* drum, which give key signals concerning tempo and sectional cues; the **suling** (bamboo flute) which has an interjectory role; and the **siter** or *celempung* (box zithers) which plays busy patterns like the *gambang*, usually maintaining the same density referent, and as loudly as the *gambang*, but with motifs that range less widely. In addition there is a vocal chorus or *gerong*, which may be male or both sexes, and a female solo vocalist (*pesinden*), who sings antiphonally to the *gerong*. Most of these instruments are also an ensemble in their own right, the *Gamelan gadon*, which plays many of the same pieces, but with only *slenthem* playing the *balungan*, and usually a male or female singer, with instrumentalists singing the *gerong* part.

There are various percussion instruments -*kemanak*, *keprak*, *gentorag*- that are generally included in this category but are not commonly employed, nor have they any effect on pitch choices.

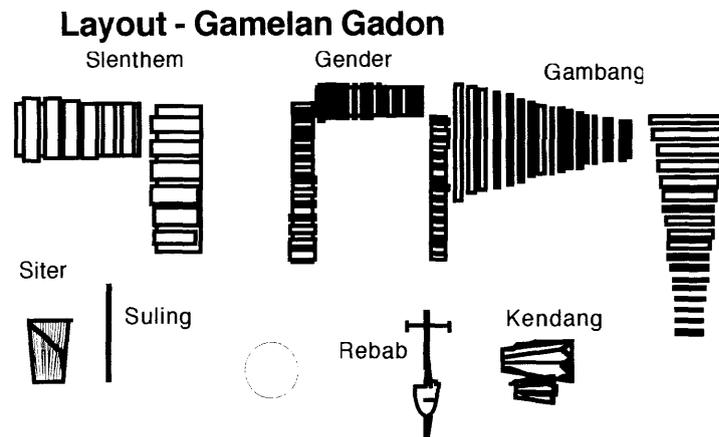


Fig 27: Layout of *gadon* ensemble

The *gambang*, *gender*, *rebab*, *suling* and *kendang* (drums) are close to one another here and in the full *gamelan* previously shown, and often have their own passages during which the louder bronze - *saron*, *bonang* and *kenong* - are quiet. It could be said in contradistinction to the *wilah-pencon*-miscellaneous model that the full *gamelan* comprises: the *balungan* instruments playing nuclear melody variants, the *pencon* instruments decorating the nuclear melody by subdivision, the *gadon* ornamenting the nuclear melody with florid melodies; and the *kendang* and gong section, marking out the points of the cycle. Each of these quarters is governed by quite distinct rules.

3B2: Performance structures in Javanese Gamelan

In *klenengan* performances (*gamelan* without a dramatic performance or ceremonial context), whether live concerts or radio recordings of up to two hours, there is often a mixture of large and medium length pieces (*gendhing gede* and *gendhing*) featuring both loud and soft instruments. Even in the *soran* genre, which ostensibly has no soft instruments, these may enter during the second *irama*. Short pieces of one to a few minutes will open and close the program, the longer pieces taking as long as half an hour.

Wayang kulit (shadow puppet) or *wayang golek* (doll rod puppets) are all-night shows that will involve almost any piece from classical or popular repertoire. Hence the musical challenges over the nine hour period may be quite demanding, and the qualities of a *gambang* player in that situation will be tested: imagination, endurance, authority, attention and memory. Dance performances (*Tari*) are based on the same stories and performance patterns, but usually for only two hours. The pieces are referred to as *iringan* (accompaniments).

In the second half of the nineteenth century in Central Javanese *kraton*, the forms of *langendriya* and *langen mandrawanara* evolved in response to European music drama performance¹⁵, bringing together elements of song (*tembang*), ground bass pieces (*gendhing*), shadow puppetry (*wayang kulit*) and dance. These were further adapted in the popular form

¹⁵ See Sumarsam 95 Ch2.

ketoprak, which uses local historical romantic stories. Aria-like *tembang* sung by actor/dancers, and extensions of the mood-setting *sulukun*, accompanied by the *gadon* (soft instruments) were interpolated into passages for the loud bronze. During the twentieth century these styles spawned further offspring, such as *palaran* and *merong*, passages which have progressed from vocal interludes to the central point of interest for many *gamelan* lovers. As a result the soft instruments, particularly *gambang* and *siter panerus*, are heard exposed alongside the solo female singer (*pesindhen*). In the *palaran* this is supported by the steady tolling of the *kenong* as the goal tone shifts, and the *gender*, maintaining a soft dyadic or mode based accompaniment (see 3B3 below). This has given the *gambang* prominent opportunities for musical interaction in performance and recording that have retained it in the *gamelan* as one of the vocalist's constant helpers. In the Solonese style these quiet intermezzos have developed styles of *gambang* playing that require great skill and sensitivity.

The *gambang* has been absorbed into the Javanese *gamelan* orchestra, and is the melodic percussive companion to the *gender*. These instruments play some of the most complex patterns in the *gamelan*, and have to be equally skilled in ametric improvisation as well as highly rhythmic improvisation during large *gamelan* pieces. The *gamelan* ensembles that include *gambang* are more varied than the *gambang* itself, and its variation techniques, utilising common and regional terms, may reflect local variation techniques, or more universal ones. There is no standardisation, nor evidence of any collaboration in this. Indeed, it seems that each region takes pains to ensure that its terms and practices stand out from those around them, while still fitting within historical senses of *gamelan*.

3B3: Central Javanese musical theory and variation

Certain principles govern *gamelan* music, and therefore *gambang* playing in all these areas: most commonly, a series of goal tones, played in the bass or middle voice(s), accompanied by a structural punctuating pattern on various gongs; variations based on the goal tones, often played in anticipation; at least one pair of interlocking instruments; within a performance structure that encourages new variations to be explored, either in a contrasting tempo or density, or simply through a varied rhythmic texture. In most larger *gamelan* pieces independent tunes are woven around the goal-tone series and its derivations. There is a strong awareness of octave and fifth intervals, (dyadic harmony) often developed to an intriguing complexity.

Javanese balungan and lagu

The governing musical structures in this *gamelan* style are the **balungan** (lit. "skeleton" or ground, cantus firmus) played by the *saron* section and *slenthem*, and the **lagu** (song or melody), which is expressed in different ways by the vocalists, *rebab*, *gambang*, *gender* and *siter* (that is, the *gadon*, as seen above). The idea in essence is that the *saron* and *slenthem* play the nuclear melody, while the *bonang* play variations derived from the *balungan*, and the *gadon* players create more subtle variants, linked to the *balungan*, but not closely tied to it. They embellish and cue the *lagu*. The female vocalist, the *pesinden*, elaborates antiphonally, against the unison male choir, the *gerong*. In all cases their melody is said to follow the "*lagu*", rather than being a *lagu*. A *lagu* in its own right, meaning song melody, implies popular songs (*dolanan* such as *Gambang Suling*), or national songs.

The *balungan* may be determined (locally rather than universally) and written down, eg: 2nd line of Puspagiwang : **3 3 . . 3 3 5 6 7 2 7 6 3 5 3 (2)**. It is usually written in four note groups (*gatra*), as above. The last note in each *gatra* is considered a goal tone, and has extra weight for that reason. The parentheses represent the playing of the gong, and thus the end of that musical period. These notations include dots as rests, and occasionally the overlining to indicate doubling the rhythm (that is, crotchets becoming quavers).

The *lagu*, in contrast, is rarely written down and is difficult to determine, even locally (Sumarsam: 85, 92, Sutton 75-82, etc). Yet any detailed analysis of a Javanese *gendhing* will seek to establish the "inner lagu" (*lagu dalam*) as a progenitor to both the *gerongan* (that which is sung by the *gerong* group) and the *balungan*, all of which will coincide at the strong structural points marked by the *kenong*, *kempul* and *gong* (see Sumarsam 92 Ch4 for a thorough investigation). In the following example, based on the *balungan* just quoted, these points are marked. The silent "strong" beat marked * represents the first quarter point, with a pitch centre of 3 from the previously struck note:

Ketawang **Puspagiwang Pelog Barang** (Ngelik section)Gong=G, Kempul=P, Kenong=N, *Ketuk*=k, Kempyang=py

Gong, etc	py	t	py	.*	py	t	py	N	py	t	py	P	py	t	py	NG
<i>Balungan</i> :	3	3	.	.	3	3	5	6	7	2	7	6	3	5	3	(2)
<i>Gambang</i> :	67232723	27233373	33337333	35356356	76723332	26276356	36535353	66672672								
<i>Gerong</i> :		Parabesang	Mara	Bangun	Sepat	do--mba	- -	kali	o--ya							
(Choir)		3 3 35 3	. . 3 5	. 6567 6	. . 7 2	. 2327 6	7	2367 5	. 56532							

The *gerongan* moves through the main goal-tones in melismas, terminating at the end of the descent. The *gambang* follows a similar contour, but with a constant pulse. The *balungan* takes a straight path with octave substitutions as necessary. We see convergence on the goal-tone at each quarter-point; at the 3's below the pause (*); at the 6's below the N, 6's below the P and 2's at the gong. At most other points the convergence is imperfect. The *gatra* mark the quarter points of the cycle (*gongan*). The first *gatra* involves a "hanging" shape (*gantungan*), carrying across to the following notes 3. (The *gantungan* concept becomes vital in *gambang* performance choices, as we shall see below. Each of the interpretations is seen as *gantungan*: the *balungan* 33.. ; the vocal *gerong* phrase; and the *gambang* phrase.) The third *gatra* 7276 implies a melody 7 2' 7 6, the high 2 being implicit but unavailable on the *saron*. The multi-octave instruments - *bonang*, *gender*, *rebab*, *siter*, *suling* and *gambang* - will all play the high 2.

What I have just described is in keeping with most *gamelan* tuition, particularly for Westerners. However Sumarsam took care to suggest a different possibility:

Although the idea of *balungan* and *gatra* mentioned above has a certain element of truth in it, when these theories are contrasted with indigenous Javanese theories, another concept of the construction of Javanese *gamelan* pieces emerges: the intimate relationship between *gamelan gendhing* and Javanese vocal music. There is some evidence that vocal melodies are the melodic precedents of *gamelan gendhing*, and that *gatra* exist only through the reformulation of the melodic precedents of the *gendhing*, after *gendhing* are performed or *balungan* are notated. (Sumarsam 92: 242)

This comment is specific to the *gamelan* music of Yogya and Solo, but bears consideration in relation to Sunda and Bali as well, particularly since the equivalent goal tone structures of Sunda (*pola*) and Bali (*pokok*) have similar consequences for *gambang* players in those traditions. The *balungan* above might be more realistically represented as 3 3 3 6 2 3 5 (2), were it not for the fact that the *bonang* and *saron panerus* derive their parts so directly from the *saron balungan*.

Balungan are not standardised, nor are the *gambang* embellishments around them, but display regional variation. In Sutton's "Traditions of *Gamelan* music in Java" (Cambridge 91, Chapter 2) the "rival" traditions of Yogya and Solo are illustrated in *balungan* variants, for instance in the *gendhing* Bima Kurda.

Bima Kurda -Yogya

pytpy. pyt pyN	pytpyP pytpyN	pytpyP pytpyN	pytpyP pytpyNG
|: . 5 . 5 . 2 . 5	. 5 . 5 . 2 . 5	. 5 . 5 . 2 . 5	. 2 5 . 6 7 6(5):|
|: . 57 5 6 7 6	7 5 76 75 76	7 5 6 . 6 7 25	. 2 5 . 6 7 6(5):|
. . 57 5 6 7 6	7 2 32 . 7 6 5	. . 57 5 6 7 6	72 3 2 . 7 6(5)
|: 63 52 3 5 65	7 6 56 3 5 32	6 5 67 6 5 32	1 2 16 5 3 6(5):|

Bima Kurda -Solo

|: . . . 5 . 2 3 5	. . . 5 . 2 3 5	. . . 5 . 2 3 5	. 3 5 . 6 7 6(5):|
|: . 77 . 7 6 5 6	5 6 7 . 7 6 5 6	5 6 7 . 7 6 5 6	. 5 3 . 23 6(5):|
|: . 22 . 2 3 2 7	6 7 2 . 2 3 2 7	6 7 3 2 . 7 5 6	. 5 3 . 23 6(5):|

Many common features may be seen in the gong structure; goal tones at the quarter and eighth points and the pitch ranges for each line. The first lines are almost identical, though the Solonese version “softens” the 2 5 interval (almost a tritone in Yogya, but closer to a fourth in Solo) to 2 3 5. The second lines look similar, with their groups of 576, but if each second note is taken, and the *kenong* points marked out in bold, nuances of the goal tones have been altered:

Yogya: 57 6 **6** 5 6 5 **6** 5 6 7 **5** 2 5 7 (**5**)

Solo: 77 6 **6** 5 7 6 **6** 5 7 6 **6** 5 3 3 (**5**)

Further variants are shown in Sutton (ibid) for Banyumas, Semarang and East Javanese versions of supposedly standard *gendhing*. My own experiences in Wonogiri and throughout East Java corroborate this. These differences will be further compounded by local differences in variation technique. These are important differences for a *gambang* player. Thus a *gambang* performance of Puspagiwang will vary according to the local version of the *balungan*, the local *gambang* style and the individuality of the performer. We shall examine just such a version by Pak Soegito shortly. Regional preferences affect orchestral decisions as well: in the above case of Bima Kurda the *gambang* will be present in a Solonese version, and absent in the Yogyanese one. At the same time there are some pieces in which the simple form of the *balungan* is fixed, such as the welcoming *gendhing* Kebo Giro. The example above makes it clear, however, that a *balungan* is not necessarily a sequence of goal tones, as one might assume for the term “nuclear melody”.

The *gambang* has a unique role in all this: while fully aware of the *balungan* and vocal *lagu*, it never plays either, but instead creates running ornaments appropriate to both, while observing certain constraints. This will be examined in the analyses at the end of the chapter.

Karawitan and patet

Musical theory in Java, called *karawitan*, includes *gamelan*, unaccompanied singing (*tembang*) and small ensembles. In Central Java, many pieces maintain clear hierarchies of notes leading to goal tones. These playing practices and theories depend on modes or note hierarchies called *pathet*, a nebulous system about which much debate accrues. Sumarsam (92) shows that many of the fundamental terms such as *karawitan*, *gatra*, *cengkok* and *balungan*, have only emerged in the last century as Javanese intellectuals sought indigenous responses to European (primarily Dutch)

music theory. *Pathet* theory itself may well have become a good deal more complex as it was investigated from practice to theory and back to practice.

The table from Groves (Mode §V,3(i)) describes three *slendro pathet*, but Sutton (88; p17) gives contrasting *patets* for Central and East Java in *slendro* and *pelog*: (Translations in italics).

Modal family	Central Java	East Java	Goal tones	Secondary	Avoided
<i>Slendro</i>	nem (6)	sepuluh (10)	2,6,5,3	1	none
	sanga (9)	wolu (8)	5,1	2,6	3
	manyura (peacock)	sanga (9)	6,2	1,3	5
	galong (clay)		serang (attack)	3	2
<i>Pelog</i>	lima (5)	ber, sorog	2,6,5	7	
	nem (6)	wolu (8)	5,1	7	
	barang(thing)	barang	6,3,2	1	

Fig 28: Table of Javanese *Pathet*

But in fact the tonal hierarchies vary with each piece. The Solonese *gendhing* Kembang Kapas demonstrates a different *patet sanga* model;

(5) 1515 1235 2353 252 **(1)**5151 5321 3213 123 **(5)**

The goal tone 5 here is of slightly greater importance than 1, in that it begins and ends the piece. 3, normally an "avoided" tone, appears in places of structural importance, followed by 2, and 6 is entirely absent. Ketawang **Subakastawa** in the same *pathet* suggests something closer to the table:

. 1 . 6 . 1 . **5** . 1 . 6 . 1 . **(5)** i1i6 i1i**5** i1i6 i1i**(5)**
 Ngelik: i2i1 i6i**5** i2i1 i6i**(5)** x2 i2i1 i2i**6** i2i1 i6i**(5)**

Goal tones at the end of each *gatra* (in bold) are points that a *gambang* player will aim for, and it will be seen that broader applications of *patet* note hierarchies will also affect note selection in *gambang* performance. That is, it is easy to apply conventional *pathet sanga* choices in Subakastawa, since it follows *pathet*, than in Kembang Kapas. (See analysis 3D2). Constraints of *pathet* may be found in most Javanese *gambang* practice, but are far more pronounced in the hands of a court or academy musician than the average village player.

Central Javanese variation techniques - irama and imbal

The *bonang* and *peking* parts are usually created directly from the *balungan*, depending on two other factors: *irama* and *pathet*. *Irama* involves a few rhythmic concepts, and may be initially illustrated on the *saron panerus*. The *saron panerus* or *peking* usually doubles, quadruples or octuples each successive pair of notes, depending on the level of relative density (*irama*). For instance:

Balungan:	3	5	3	2	
<i>Peking:</i>	3	3 5	5 3	3 2	(Solo style)
	3 3	5 5	3 3	2 2	(Yogya)
<i>Irama 2</i>	3 3 5 5	3 3 5 5	3 3 2 2	3 3 2 2	(Yogya)
	3 3 5	5 3 3 5	5 3 3 2	2 3 3 2	(Solo)

Irama 3 33553355 335223355 33223322 332553322 (Yogya)

The increasing density of these parts is dependent on slower renditions of the *balungan* line. Note also that as the *irama* density increases, the *peking* anticipates the goal tones with more notes. Further, the Yogya style is one note in advance compared to the Solonese model. Similar density transformations will occur in the *bonang*, *gender*, *siter* and *gambang* parts. The initial rendition of a *balungan* line will often be performed at a faster speed than its intended tempo. As the decelerations are cued, instruments move to their next levels of *irama* change. These are nowadays referred to as 1/2, 1/4 and 1/8, meaning the number of notes played per *balungan* beat, the actual terms being variable according to locality. This results in a hierarchy of achieved *irama* densities¹⁶:

Original/slowest	1/ 1	<i>Slenthem/demung/saron</i>
Next fastest <i>irama</i>	1/ 2	<i>Saron pancer, bonang barung</i>
Next fastest	1/ 4	<i>Peking, bonang panerus, gender, gender panerus</i>
Fastest	1/ 8	<i>Siter, gambang, kendang</i>

Fig 29a: Irama table 1

A simpler model, in a piece that does not go through so many *irama*, would be:

Original/slowest	1/1	<i>Slenthem/demung/saron</i>
Next fastest <i>irama</i>	1/2	<i>Bonang barung, gender, peking, gender panerus</i>
Fastest	1/ 4	<i>Siter, gambang, kendang, bonang panerus</i>

Fig 29b: Irama table 2

Significance for the gambang

However, for the *gambang* there is an important transformation of approaches, as a *gendhing* slows into its intended *irama* (slowing the tempo until it can double its density). In many pieces there will be two *irama* changes. In Yogyakarta, these are usually the *cepat* or "fast" (meaning that the *balungan* part will take less time to play) and *lambat* or *rangkap*, in which the *balungan* is played over a longer period, yet in each *irama* the sense of tempo may be *andante*, *allegro* or *presto*. In Solo there are five levels. Gitosaprodjo calls these Irama 1/2 or *lancaran*, Irama I or *tanggung*, Irama II or *dados*, Irama III or *wiled*, the STSI *kendang* monograph has *seseg/lancar*, I/*tanggung*, II/*dadi*, III/*wiled* and IV/*rangkep*, while Martopangrawit has *irama lancar* (1/1) and *wiled* (1/8). Widiyanto (p.c.) also mentioned *irama gopak*, used in *sampak* pieces. Despite these varying terms, the practice is consistent across Java. The *peking* transformations shown above are clear formulae, and Sutton (88) shows how these have may some latitude of variation, but follow similar patterns throughout. The *gambang* may start (in 1/2 *irama*, that is, two notes to each *saron* note) exactly as a *peking* does, but then change, either at the beginning of the 1/4 section or by the end of it, to

¹⁶ Rebab and suling are not played in strict time, and are therefore not included.

cengkok formulae (1/8 or 1/16). based on the end note of the *gatra*. This may be seen in Ex 4 below, based on Widiyanto's version of *Subakastawa* (analysis 3D2).

The image shows a musical score for four measures of Gambang Doubling. The top staff is labeled 'Saron' and the bottom staff is labeled 'Peking'. The measures are: 1. 'Gambang Doubling - peking style' with fingering 5 5 2 2 1 1 2 1; 2. 'Quadrupling - beginning of cengkok style' with fingering 6 6 2 2 1 1 2 1 and 6 5 2 3; 3. '1st seleh' with fingering 5 5 1 6 5 3 5 3 2 2 5 2 3 5 3 2; 4. 'Octupling - 2nd seleh' with fingering 6 6 1 6 1 2 6 1 2 6 1 6 5 3 5 3 2 2 3 2 3 5 2 3. The Peking part shows a sequence of notes with fingerings 5, 1, 6, 1.

Ex 4: Example of gambang irama-based changes of approach

The *gambang* moves from *peking* style to its own unique style, but as it does, it breaks away from the *balungan*. Halfway through the third bar the *balungan* and *peking* arrive on 1, yet the *gambang* moves between 2 and 5. In the next bar the 6 is in accord with the *balungan*, but again halfway through 2 rather than 1 is favoured. This supports the idea that there is a strong harmonic aspect to *pathet* - 6 leads up to 2, 2 leads up to 5, and the 1 simply acts as a filler note (*pancer*).

Imbal technique (interlocking)

The *imbal* technique practised by *saron* and *bonang* is hocketing up to high speeds. In the case of Central Javanese *saron* the leading *saron* plays the goal tone on the beat, with the second *saron* playing off-beat ahead of it. On the third of the four beats, each *saron* plays an auxiliary note two keys away and returns to the goal tone on the concluding beat.

That is, *Saron I*= [goal tone + auxiliary] on-beat, *Saron II*= [adjacent+aux] off-beat, as demonstrated in abstract and realised forms in Fig 30a below.

Instrument	Note	Abstract pattern	Realisation
<i>Saron 1</i>	goal tone	..0...0...0...0...0	.6.6...6...6...6
	auxiliary tone	.....0...0...0...0..	.....3...3...3..
<i>Saron 2</i>	adjacent tone	0...0...0...0...0...0	5.5...5...5...5.
	auxiliary adjacent tone	.....0...0...0...0....	.....2...2...2.....
Resultant pattern:			5656235623562356

Fig 30a: Javanese *saron imbal*

The initial doubling of the goal tone (eg: *saron 1* part 6636) makes the goal tone very prominent. Other variants are possible. Central Javanese *kintilan* are fast interlocking *saron* passages using the same notes in rapid alternation. These techniques are practised at higher speeds in East Java, with other variants. In *imbal bonang* two patterns are used, one as above but without initial doubling, and a second form terminating the *imbal* with a *sekar*, a "flower" or flourish.

Instrument	Note	Abstract pattern	Realisation
Bonang barung	<i>pathet</i> tone + auxiliary tone	...0...0...0...0. <i>sekar</i>	.1.3.1.3.1.3.1.3.1.3.1.3.6.6.6.3.2.3.2.2
	adjacent tone + auxiliary adj tone	0...0...0...0... <i>sekar</i>	5.2.5.2.5.2.5.2.5.2.5.2.5.3.3.3.3.3.3.3.
Resultant pattern:			512351235123512351235123512353666332333232

Fig 30b: Javanese *bonang imbal*

It may be seen that the *bonang barung* has the melodic matter of the *sekar*, while the *bonang panerus* confines itself to a dyad on adjacent notes to the goal-tone, a technique also seen in bamboo *gambang* technique in outer regions of Java. *Sekar* are considered to be in the *cengkok* continuum (see below), decorative motifs leading to *seleh* /goal tones, so the above example would be used to lead to a 2 in a four note cell (*gatra*), eg: 6 5 3 2, 3 1 3 2 or 6 3 5 2, as played on the *slenthem* or *demung*. *Imbal* tends to be *pathet*-based, particularly for *bonang*, so its choice of notes 1 and 3 is irrelevant to the goal-tone 2, and related instead to the *pathet* of the piece. The resultant patterns of *imbal* are often imitated by the *gambang* or *siter*, although both are solo instruments. These forms of *imbal* are, in fact, *gambang* techniques of great importance in Banyuwangi and Banyumas, on the extreme east and west of Java, and also a mainstay of Balinese *gambang*, but more of those in subsequent chapters.

The other *bonang* variation techniques tend to be further away from *gambang* practice: *mipil*, in which each pair of notes is doubled twice, quadruple or octuple the *balungan* speed is relevant to the bamboo *calung* of Banyumas and occasionally seen in Banyuwangi; and *adu manis*, use of a non octave dyad such as a fifth, will occur on *gambang*, but on the *bonang* it has a more strident sound¹⁷.

We can see that each instrument has its own distinguishing phrases, formed through a blending of physically appropriate motion and local aesthetics (for *gender* see Sumarsam 92, Brinner, Weiss; for further details on *bonang* Lysloff). Many of the variations discussed above have regional characteristics, and part of the method of this thesis was to see whether regional variants on other *gamelan* instruments have had any impact on the *gambang*. However, the variation techniques generally prescribed for *gambang* are far less easily demonstrated.

3C: Motivic phrases for *gambang* Java

The essence of Javanese *gambang* playing is that it is suspended between *balungan* and *lagu*, as an elaborating instrument that may imitate others, but with a texture and role unlike any. To fully understand this, both the *gambang*'s standard elaborating phrases (*cengkok*) and its textural rhythmic decorations must be examined before we can conduct analysis of performance. Many identifiable *gambang* phrases will occur throughout the course of a piece, though of course the

¹⁷ Here is an example of the *bonang* variations mentioned

<i>Balungan</i> ...	5 2 3 .	3 6 3 5	3 5 3 5	6 1 6 5 , etc
Bonang:	6 . 6 . 6 . 6	3 6 3 6 3 5 3 5	5 5 5 . 5 5 . 5	6 1 6 1 6 5 3 5 , etc
	2 2 3 3		5 5 5	
	[adu manis][mipil]		[nggembyang]	[mipil]

complete piece is always unique and distinct from its fellows in some aspects, and may contain moments that are completely improvised.

3C1: Cengkok and gatra shapes –phrases from STSI, Sutton and Suryabrata

A compendium of typical *gambang* phrases is possible within a region, and the Arts Faculty of the Sekolah Tinggi (ke)Senian Indonesia in Solo (known as STSI Solo) has published such a list - "*Cengkok Gambang Umum*" - *gambang* phrases for common use. This list is mainly arranged in terms of movement from one goal tone to another. The phrases, 32 or 64 notes in length, suitable for a "musical sentence" (*kalimat lagu*) of two *gatra*, are presented with alternative forms. For instance, to proceed to goal tone 1 after two *gatra* these phrases are suggested by Mulyadi:

6126 1263 1265 3523 6532 1265 3336 3561
 6121 .1.1 .121 2353 6162 1621 6365 6321
 .6.6. 3561 2612 6121 6161 6121 2353 6365 6321
 6121 .1.132312323.533221661612612

Ex 5: *Gambang cengkok* by Mulyadi

A further consideration involves the goal tone you have come from, and beyond that, there are occasionally *cengkok* related to a particular interpretation of that goal tone movement. For instance, to proceed from tone 1 to tone 3 in *pathet manyura*, there is a neutral phrase, but many players would choose to use a variant of *kacaryan*, considered a paradigm for moving from 1 to 3. *Kacaryan* is the name given to a variety of *cengkok* related to a well known vocal melody, part of the *gendhing* Puspawarna. In Fig 31 there are three interpretations of the *gambang* part for *kacaryan* by three respected players. (These are generally 1/8 or *irama wiled*).

Balungan	3	2	6	5	1	6	5	3
Lagu	6̄1	2̄ 3̄	6	5	6 6	1̄2̄	6 5̄	3
Words	ka-	-ca-ry-	-an	ang-	-gung	ci-	-na-	-tur
Darsono	6123 2352	6165 3532	2523 5612	2316 5635	2356 1656	5326 2356	3521 6216	6261 2353
Wignyosusastro	6161 2161	6161 2612	6565 3532	2323 5235	2353 2356	5323 2356	2123 2612	6165 3123
Mulyadi	1111 2266	3333 2612	5321 6156	5323 5235	2353 2356	5323 2356	2165 3532	6661 2123

Fig 31a: *Kacaryan* section of *Puspawarna* with three *gambang* realisations

Only every second goal tone is followed (confirming the distinction above between *balungan* and true nuclear melody), and the terminal notes of each eight note *gambang* phrase tend to be 2s and 6s. The main exception is the midpoint, where 5 must be emphasised, despite its being the "avoided"

tone of *pathet manyura*. This running against the grain of the *pathet* is part of what makes the *cengkok kacaryan* recognisable, for the *gambang cengkok's* relationships to the corresponding vocal melody are hard to define. *Cengkok* tend to start low, and move up through a series of plateaux until the final goal tone (*seleh*) is reached in the low register, as seen in three versions of the *putut gelut cengkok* by the same practitioners:

Putut Gelut variations

Putut 3>2 Ds

The image shows a musical score for 'Putut Gelut variations' in the key of D minor (Ds). It consists of three staves, each representing a different realization of the piece. The first staff is labeled 'Ws', the second 'My', and the third is unlabeled. Each staff contains a melodic line with various rhythmic markings and fingerings (numbers 1-6) written below the notes. The score is divided into four measures, with a double bar line at the end of the fourth measure.

Fig 31b: *Putut gelut cengkok* with three *gambang* realisations

In general, the scales do not exceed an octave, and recursive patterns (stepping in the opposite direction occasionally) are common. Wignyosusastro and Mulyadi tend to have more repetition (particularly single-note) than Darsono.

As models for a performer’s exploration, the STSI *cengkok* are a worthy resource, but still fall short of presenting a complete insight into the models and stratagems employed by *gambang* players during performance. But this may be considered a typically Javanese approach – the standard *cengkok* must be thoroughly memorised before stratagems for playing may be discussed.

Sutton (75) places great emphasis on motivic phrases and their relationship to goal tones, constrained by *patet* relationship. He places his analysis within the *kalimat lagu* of two *gatra* or eight *balungan* notes, of which the final, the goal tone, is the crucial one. His analysis breaks the *gambang* performances down into eight eight-note phrases, one to each note of the musical sentence. That is, eight phrases to one sentence or *kalimat lagu*. These eight note phrases are then classified according to:

1. their final two steps; (codes: a- leap down, b - step down, c repeat, d -step up, e - leap up)

a	b	c	d	e	ae	be	cd	dd	bb
0.....	.....	.....	.....	.....0	0...0	.....0	.....	.....0.	.0....
.....	.0....	.....	.....0.	.....	.....	0.....	.....0	....0..	....0.
....0.	.....0.	.0.0.	....0...	.0...	...0...	...0...	.0..0..	.0....	.....0

The double patterns were named: U V R S G

2. their previous step;
3. their lowest note and its relationship to the final.

207 patterns are found in his corpus of six *gambang* realisations of separate Yogyanese *gendhing*, each illustrating a different *patet*. Some of these shapes appear to be related to the *tresillos*, some are scalar, others involving large jumps, said to be "*ugal-ugalan*" (playful), and some are less definable. One of his findings was that a large number of patterns ended with an ascent of two steps (S - endings), usually at the bottom of a longer phrase.

Eg: S2-17or S3 - 12

```

.....
.....
.....
.....0
.....0.....0
....0.....0.....0...
0.....0.....0.....

```

These put me in mind of a previous classification system I had seen. There was a classification of *saron gatra*, presented to me in 1983 by Bernard Suryabrata (Ijzerdraat) which appear closely related to Sutton's list. Three of these are named after well known Javanese *gendhing*: Udan Mas, Kodok Ngorek and Monggang, in which they feature as predominant or exclusive *gatr*as.

mipil	luk gantung	ukel	udan mas	kodok ngorek	monggang
o o o	o o o	o o o	o o o	o o o	o o o
o	o	o	o	(rest)	o

They were:

Fig 32: Suryabrata's *gatra* classification

The first term, *mipil*, may be taken as a method of *bonang* playing, (explained above in 3B3 *bonang*). It is invertible. The second, *luk gantung*, occurs in classifications of *balungan* types. "*Gantungan*", referred to above in 3C2, means "hanging", here in the sense that the first-and-final note defines the pitch centre of the *gatra*. In addition to the forms as depicted (eg: 3123 or 3653) there are forms that circle around the goal tone (2132 or 5635), and forms (such as that seen in Puspagiwang) in which there are only goal tones and rests (. . 6 . , 5 5 . . , or . . 22). Becker's own definition of this is "*balungan* in which there is no melodic motion, in which a single tone is sustained". In "*Ilmu Karawitan*"¹⁸ Sindoesawarno writes of *luk* as an aesthetic rising and falling of melody. *Gantungan gatra* are accompanied by *gambang cengkok* that return to the goal tone every second or third note. See below for further examples. The third term *ukel* does not occur in any of the standard texts, and translates as a weaving, curve or skein. It and the *udan mas* shape are simple scalar movement, and give rise to a wide range of patterns when octave transposition takes place, due to the limited range of *sarons*. (eg: 1216, 1612 - ukel- and 2165, 3216 - udan mas). Similar remarks may be made of *monggang*, which can be seen in 2126, and with alternate goal tones as in 6562 6561. Note that it and *kodok ngorek* are non-invertible, unlike the preceding

¹⁸ Becker/Feinstein 82 p383.

Ex 6a: Closing phrases from Sutton

These patterns could conclude on any goal tone, but the Fd- motifs were felt to be most appropriate for penultimate points in the sentence, and the S motifs for finals. They were affected by *pathet*: to approach a 3 from 1 below implied *pathet sanga*, while to approach it from 6 below implied *pathet manyura*. My lessons with Paimin confirmed this. He gave me a pattern for *seleh* which Sutton would have described as Gb-3/S2-17, a combination which occurs nowhere in Sutton's data.

Gb-3	S2-17
0.....0.....	.....
.....0.....	.....
....0.....0.....	.....
.....0.....0.....	.....0.....
.....0.....0.....	....0.....0.....0...
.....0.....0.....	.0.....0.....0.....

Eg: 3̇1̇3̇2̇1̇6̇5̇3̇ 3̇5̇3̇5̇6̇3̇5̇6̇ or 5̇2̇5̇3̇2̇1̇6̇5̇ 5̇6̇5̇6̇1̇5̇6̇1̇

Ex 6b: Closing phrase from Paimin

In Sumarsam (85 p262) there is an identical motif: 2̇1̇3̇2̇1̇6̇5̇3̇ 3̇5̇3̇5̇6̇3̇5̇6̇.

S2-17 is a simple *tresillo*, as are its variants seen below, and its popularity as a *seleh* phrase leads to further questions: were there other *seleh tresillos*? Are there standard phrases that precede them? Do they occur in places other than the eighth point of the musical sentence (*kalimat lagu*)? A number of motifs in the S and G categories take the tresillic form 2+3+3, in steps going up or down, that is;

2notes (up/down/static)+3up/down+3up/down such as:

S2-3	S5-10	G2-3	or	S2-18
.....0.....	.....0.....	.....		.....
0.....	0.....0.....	.....0.....		.....
.....0.....	.....0.....	.....0.....0.....		.....
.....0.....	.....0.....	.....0.....0.....		.....
.....0.....0.....	.....0.....	.....0.....0.....0.....		.....0.....0.....
.....0.....	.....0.....	..0.....0.....0.....		.....0.....0.....
.....0.....	.....	0.....0.....0.....0.....		.0..0.....0.....

Ex 7: Tresillic seleh phrases

Investigating Sutton's data further, we find tresillic forms at most gongs, and even at *kenong* points in the longer structures, eg: (tresillic forms in bold type)

- Puspagiwang (G) **G2-3**, S3-12 **S2-17**, Walagita (G) **S2-17** (x4)
- Mijil Wedaring (G) **S2-17**, **G2-3**, S3-12 Pangkur (G) **S2-17**, S2-13
- Sembawa (G) S3-12, S2-13, **G2-3**, **S2-17**, S3-16
- Gambir Sawit (G,n) **S2-17**, **S2-17** S2-4, **S2-17** **G2-3**, S3-12, **G2-3**,

N4-1?, L4-3, S3-12, **G2-3**, S2-19, S5-9, S3-12, S2-3

Tresillic forms 17/32 Non tresillic forms 15/32

Fig 33a: Tresillic frequencies in Sutton's data

The extreme frequency of G2-3 and S2-17 demonstrate that tresillic *seleh* phrases are virtually habitual; although acknowledged players like Darsono will often practise the more awkward variants to demonstrate their skill. In the example of *kacaryan* above, Darsono avoids the more formulaic

seleh patterns, where the other two players choose frequent tresillic phrases. Further investigations into the *Gambang Cengkok* STSI confirm this.²⁰ Final motifs to a given gong *seleh* for a standard *cengkok* are given below, by the three practitioners Darsono (Ds), Wignyosusastro (Ws) and Mulyadi (My), translated into Sutton's code, where appropriate.

<i>Putut Gelut</i>			
1 as 6>2	Ds: Ge-3, 6i653216	Ws: 61612162	My: S2-18
2. as 1>2	Ds: Ge-3, 6i532312	Ws: S2-18	My: S2-18
3. as 3>2	Ds: 6i532312	Ws: .3653212	My: S2-18
<i>Debyang-debyung</i>	Ds: S2-17	Ws: S2-17	My: S2-18
<i>Ayu Kuning</i>	Ds: 36356121	Ws: 63656321	My: 33356561
<i>Kacaryan</i>	Ds: S5-4	Ws: S2-5	My: 66612123
Tresillic forms	14/20	Non tresillic forms	6/20

Fig 33b: Tresillic frequencies in STSI *gambang cengkok*

The terminal 3 steps-up/down is clearly a paradigm, though again Darsono avoids these choices. However, Vi King's transcriptions of four other *gendhing* played by Darsono confirm a frequent choice of one of the G or S motifs. Is there a harmonic factor at work here that sets up the notes two keys above or below the goal tone as a type of voice-leading? Yes, in *imbal* (see 3C in this chapter) the auxiliary to the goal tone is chosen two keys either above or below, given the constraints of limited octaves. These notes will often be found compatible within *patet*. Martopangrawit (in Becker/Feinstein) gives the "range of *kempyung*" (usable fifth-like dyads) on the *gender* as: 1/5, 2/6, 3/1', 5/2', 6/3'. These would also apply to the *gambang* (and *siter*). These also function as harmonic directions: 3 leads up to 6, and less strongly down to 6; 2 can also lead up or down to 6, but less strongly than 3. The data suggest that the order of strength is 3 up to 6, 2 down to 6, 3 down to 6, 2 up to 6 in *patet manyura*. Sutton's predictions for *patet manyura* confirm this. (75 p241-2), and it is quite consistent with Kunst's *ngrachik* and *nyaruk* figures. Combining Sutton's predictions for each *slendro patet* with the possibility of downward cadence we get the following: (< = up to, > down to)

<i>Pathet</i>	To 1	To 2	To 3	To 5	To 6
<i>nem</i>	5<1, 3>1	6<2, 5>2	1<3, 6<3	2<5, 1>5	3<6, 2>6
<i>sanga</i>	5<1, 3>1	5<2, 5>2	1<3, 3>1	2<5, 1>5	2<6, 2>6
<i>manyura</i>	3<1, 3>1	6<2, 6>2	6<3, 3>1	2<5, -	3<6, 2>6

Fig 34: Goal tone voice-leading in Javanese *pathet*

And what of the penultimate motifs? Many of Sutton's F-motifs that precede these patterns reach a top note an octave (*gembyang*) above the low note of the *seleh* phrase, descend to one of the S-motifs and ascend to the final, as in the full *seleh* phrases in Ex 7a. There is an implication that leading to the final from both above and below is consistent with *pathet*, creating a satisfying ending. Finally, if we take the notes at the midpoint of a *seleh*, each fourth note, it can be seen

²⁰The relationship to the original vocal index is inexact. While the original rhyme and its *gender* equivalent may be seen as similar to a melody-accompaniment pair, with the *gambang* following contours and goaltones at a distance, the *gender panerus* and *siter cengkok* are different again. the compositional process of *cengkok* is not clear, but requires consensus.

that many of these create clear voice leadings to the goal tone: **2)2323 5235**, or **2132 1653 3535 6356**, which may be condensed to 2-3-5 and 2-3-5-6.

In summary, we can see that *seleh* points in Central Javanese *gambang* are executed on the *gambang* in tresillic phrases using an auxiliary note below and/or above, in accordance with *pathet*. Movement following a *seleh* point, as well as opening phrases, tend to be upward movement with special attention to forthcoming prominent notes. Along these paths, perhaps the more improvisational side of the *gambang*, there are certain twists and turns, often in the four note groups of Suryabrata's classification, with particular exceptions for *gantungan* phrasing, which will be examined in detail shortly. Beyond shapes, two other *gambang* phenomena seem worthy of remark. One of these is **anticipative repetition**, where a note is repeated, sometimes in triplet or tresillic form, prior to being struck by the *balungan* instruments (recalling two of Kunst's listed *gambang* functions). A more complex one can involve larger jumps to the auxiliary note. It includes in a sense the *gendul keplak* phrase, since the phrase is structured around the goal-note and its "dominant". Central Javanese *gambang* utilises patterns (not unlike tonic-dominant/sub-dominant) based on three successive notes, which are of three types:

- the scalar symmetrical patterns, initially ascending;
- the alternating tonic-auxiliary patterns, such as *gendul keplak*;
- and the preparation-*seleh* variants; in which the scalar versions are used for minor goal tones, while the tresillic forms are used for half-points or gongs.

These are often used in this order, so that a shape of scalar ascent-plateau with downward jumps-descent to *seleh* is a common strategy for movement between primary goal-tones.

3C2: *Gantungan* and *pathetan* phrasing

Gantungan patterns imply suspension, and when executed on the Central Javanese *gambang* generally involve an auxiliary note two steps below the goal tone. The *gendul keplak* phrase described under rebound is a common form. Soegito at the Indonesian Embassy, Canberra (See DVD track 2), showed two other phrases: the first employing a damping of the left hand note,; the second resembling *saron imbal*, one of the only such examples in Central Javanese *gambang*.

RH . 7 . 3 . 7 2 3 2 7 . 3 . 7 2 3 etc
 LH . 70 70 7 2 3 2 7070 7 2 3 (0 = damp)

Ex 8a: Gantungan employing damping.

The damping technique employs the back of the index finger touching the closest edge of a *gambang* key. This technique is standard in *saron* and *gender* playing, though rare in *gambang*. As the finger touches the key, the beater falls slightly towards the lower key, with the result that the lower key sometimes sounds quietly. This results in a more complex texture:

RH . 7 . 3 . 7 2 3 2 7 . 3 . 7 2 3 etc
 LH . 70 70 7 2 3 2 7070 7 2 3
 Beater 6 6 6 6

Ex 8b: Gantungan employing damping, showing ghost notes

There are parallel *gamelan* practices to this : the interlocking *banyakan* between *demung* and *slenthem* heard in *sampak*, and *demung imbal*. A second form of *gantungan* involved alternating hands. (See DVD track 3.)

RH . 7 . 3 . 7 . 3 2 7 . 3 . 7 2 3 etc
LH 6 . 2 . 6 . 2

Ex 9: Gantungan employing imbal phrasing

Note that the *imbal*-like figure is in two different octaves. Soegito said this was a rare form, and was not comfortable using it.

Pathetan is the name of a special modulatory interlude played during *wayang kulit*, concert and broadcast performances (*klenengan*). It features the quiet instruments (*gadon*) perhaps at their most virtuosic, and serves to change the *pathet* for dramatic or musical purposes. It may be described as a brief, somewhat ametric exposition of the primary notes of the *patet* of a preceding or following larger piece. Brinner (95) makes a special analyses of the hierarchies of *rebab*, *gender*, singer (*dhalang*), *gambang* and *suling* in a Solonese performance, largely for the purpose of showing a chain of cueing. This phenomenon is not confined to Solo, although the hierarchies are varied in Yogyakarta, East Java and Sunda. The *pathetan Slendro Sanga Wantah* takes the goal tone form 5 2 1 2 5 1' 2 1 (6) 1 5. The primary goal tones are 1 and 5, with 2 featuring as an introductory tone (it would have been a primary note in the *wayang kulit*'s previous mode *pathet nem*). Low 6 features as a transitional note to the final low 5. This form of modal cadence is a little different to the standard *gendhing*, partly because it is non-cyclic. The other forms connected with *wayang - Srepegan*, *Sampak* and *Ayak-ayakan* - all demonstrate similar goal tone movement, and more of a sense of modal cadence. In *wayang*, it is more or less compulsory to perform *pathetan* at the two changes of *pathet* in the three acts. More frequently, a number of mood setting songs may be utilised by the *dhalang - suluk*, *greget-saut*, *sendhon*, *bawa*, *celuk*, etc. They all have a ritualised, almost sacred atmosphere, and along with *pathetan*, are considered to be work for the advanced player, having to observe complex modal rules, *cengkok* and cueing hierarchies. The *gambang* has a pivotal role in most of these.

In summary, then, the Central Javanese *gambang* has an important place in the *gamelan* orchestra that shapes its practice. Proceeding from the commonly known techniques of the bronze *gamelan*, the *gambang* creates its variations from *cengkok* as the fastest steady instrument, it plays largely in parallel octaves, with a moderate use of *tresillos*, rebound ornamentation, some contrary and independent motion (particularly in the rubato forms *pathetan*, *sulukan*, etc) and it has particular forms to observe at *seleh* points. It is now time to examine some Javanese *gambang* performances, and analyse them in these terms to see how closely *cengkok* canons are followed, and what other strategies are involved.

Goal tones and contour

From the gong 6 the *gambang* begins short scalar runs to the *gantungan* on note 3, establishing as auxiliary notes first the 7, and then the 6. The last bar of the first line is a S-2 *seleh* phrase to high 6, approached from below. This ascent continues in the second system to the high 2, anticipating the vocal melody. The second bar begins the descent with a tresillic pattern to 6, while the last two bars fit the preparation *seleh* pattern described above, with 3 as the upper/lower dominant, at the same time as it supports the descending vocal line. This example shows a typical usage of the *gambang's* range: the highest note (in this case a 3) is reached at the highest pitch of the vocal line, while the segment begins and ends in the low range, though there is still an octave of bass notes unused. These would be employed in the final *gongan*, where the lowest 3 leads up to the low 6.

Figuration

The first figure uses strict scalar alternation from 7 to 3, which is naturally symmetrical. The pattern using 3 and 6 is a form of the rebound *gendul keplak* pattern as a *gantungan* figure, and the rebound phrasing also accompanies the *gerong*. The following *seleh* (3 to high 6) has tresillic shape. The next four bars show a similar approach: scalar-tresillic jumps + scalar-full *seleh*.

3D2: Subakastawa from Widiyanto

The second example was one of a number of suggested *gambang* parts for Subakastawa. It is as it were, one level up from the previous example in difficulty as an ensemble piece, and specifically as a *gambang* exercise. This analysis will look at the piece from its beginning through to the point at which the cycle starts again. At the beginning of the piece the first half of the metallophone line (the *ompok* of the *balungan*) is played in simple form: 1 6 1 5 1 6 1 (5), gradually decelerating to almost half its incipit speed. On its repeat a "filler" (*pancer*) note "i" is added throughout, rendering the *balungan* as i 1 i i 6 i 1 i 5 i 1 i i 6 i 1 i 5. This *pancer* is then continued through the rest of the piece, which proceeds directly into the sung section, the *ngelik*. The decelerating section moves from *irama lancar* (1/2) to *irama wiled* (1/16).

The musical score for 'Subakastawa (from Widiyanto) First cycle' consists of three staves: Gambang, Saron, and Peting. The Gambang staff is marked with a 5/4 time signature and the instruction 'In parallel octaves, decelerating'. It shows a sequence of notes with fingerings (5, 5, 2, 2, 1, 1, 2, 1) and a later sequence (6, 6, 2, 2, 1, 1, 2, 1, 6, 5, 2, 3). The Saron staff has a 3-22 pattern. The Peting staff has a 5 1 pattern. The score includes various musical notations such as notes, rests, and dynamics (F moll, V moll).

Ex 11a: Subakastawa (from Widiyanto) First cycle

In the first three bars the *gambang* moves from a *peking* style to *cengkok*. Using Sutton's system we see the F- and V- motifs, finishing in S- motifs. Looking through the third and fourth bars we see

that the highest note of the complex patterns follows the *balungan*, moving from 1 to 5 to 6. It ascends to high 2, then down to low 2 and up to finish on 5, changing *irama* - the density level or diminution – as it passes through *seleh* phrases. The contour follows the *balungan* and its goaltones, though the fourth 1 in the *balungan* is played with 2s by *gambang*, because they lead through upper and lower octaves to the gong 5 (*seleh*). Thus a clear *seleh* phrase assists the transition (*layar*) into the new *irama*. With this orchestral depth the *gambang* moves into its lower register, adding richness of tone.

Second cycle

The *gambang* has moved in *irama* from four notes per *balungan* goal tone through 8 to 16 (the *pancer* note *i* is not considered part of the *balungan*). Although the female singer (*pesindhen*) is improvising at the stage, this is still the *ompak* section, and the *gambang* has no particular goal tone to anticipate. The two identical halves of the *ompak* (i1i6i1i5) are executable with the same phrase.

Ex 11b: *Subakastawa* (from Widiyanto) 2nd cycle

Goal tones and contour

This phrase begins with a climbing pattern to 5 (**a** above), a zigzag crest (*ukel*) around 1 (**b**) and a *pathet*-based filler 56525652 (**c**) [a kind of *gantungan*] in the descent to the 6 (**d**). These 6's, at the beginnings of bars 8 and 10, are not preceded by a *seleh* phrase. This is consistent with the *pathet* hierarchy, which in this piece has the order 5, 1, 2 and 6, with 3 to be avoided on main beats. Examining the fourth notes of the *gambang* part from the gong 5, we have **5-2-5-1-2-2-1-5-6** so far (the bold numbers representing the *saron* strokes, which are the stronger beats). The next five of these are 6-**5-3-1-5**, and are distinguished by long scalar passages. The second descending one of these is an excellent example of the use of recursive scales on the *gambang*. After the initial descent i653 there is a pattern of down-up-down-down in sequence: 2321, 6165 and 3532. (The opening of these two bars displays two ascending recursive scales). Letter **e** marks a repeat of the standard *seleh* phrase (2 to 5) seen in the previous last two *gatrās*. Again, the playing exploits the range of the *gambang*; combining this two octave melody with parallel hand playing three full octaves are utilised.

Third cycle

In the next section, the *ngelik*, the *gambang* adapts those patterns to the *gerongan*, the choral melody or *lagu* that complements the *balungan*, a repeated i2i1i6i5.

Ex 11c: Subakastawa (from Widiyanto) 3rd cycle

Goal tones and contour

The first segment moves the pitch focus up from the 5 at gong to 6, subsequently rising to 2, the first note to be reiterated so obviously. The repeated 2 has two functions or tonal alignments: it anticipates the 2 in the *saron balungan* and gives the singers their starting pitch. It returns to the 2 after a drop to 6 (note that the 6/2 dyad is the alternative to the 5/1 harmonic axis of the *pathet*) and then plays a *seleh* to 1, again anticipating the *gerongan*. At this point, the *gerongan* note is held, as a break in the 8 syllable line, and the *gambang* plays a complex pattern, which is based on the three note cell 561, but plays 2s as terminal low and high points. These patterns, combining tresillic and symmetrical melodic patterns are similar to *kotekan* motifs in Bali (ch 5). Both *gambang* and *gerongan* begin a descent, though the *gambang* returns to the upper register, perhaps because Widiyanto wished to limit the number of phrases to be learned. More commonly the *gambang* would descend into the same register as the *gerongan*, as in fact it does at the end of the second 8 syllable line. (Up to that point the range of the part has been restricted to one octave, in strong contrast to the previous cycle). As the *gambang* weaves around the *gerongan* line, an experienced player will treat the phrase -2-1-6-5 slightly differently each time. But Widiyanto's

version is a blueprint from which the student must develop his own version, so the two halves of this *gongan* are almost identical, varying only in the final *seleh*.

Fourth cycle

The next *gongan* follows the same format, varying only in the words being sung, which still maintain many of the same vowel sounds on each corresponding melisma.

Fifth cycle

The image displays two systems of musical notation for the fifth cycle of Subakastawa. Each system includes three instrumental parts (Gambang, Saron, and Gejang) and a vocal line. The Gambang part is written in treble clef with a 2/4 time signature and includes rhythmic notation above the staff. The Saron part is written in treble clef with a 5/8 time signature. The Gejang part is written in bass clef with a 5/8 time signature. The vocal line is written in treble clef with lyrics below it. Annotations in the Gambang part describe melisma patterns: 'seleh 1', 'scalar', and 'descent to low 6'. Annotations in the Saron part describe melisma patterns: 'non-seleh iteration of 6' and 'preparation seleh on low 5'. The lyrics for the first system are 'di - - i nad - yan a - r - i Su dar - so - -'. The lyrics for the second system are 'no kang a - jog - sa - ki - ng wi - ya - - - ti'.

Ex 11d: Subakastawa (from Widiyanto) 5th cycle

Goal tones and contour

The last section of the *ngelik* has a different pitch orientation. It starts as before, but moves to 6, on a strong point (a *kenong* beat), briefly moving away from the normal 5 and 1 goal tones. The preparation for this 6 is different from others we have seen, not using the tresillic forms, but almost a parenthetical form. The 6 is prolonged for the next two *saron* beats, and over the vocal 6, by other iterations that avoid *seleh* formulae. These are processes consistent with its place in the *pathet* hierarchy. When 1 is reached on the beginning of the fourth bar of this *gongan*, many new phrases have been employed, some of them scalar, but the one leading to the 1 and the one leading away from it demonstrate two different forms of symmetry not seen in the normal shapes of the rest of the piece. The last bar returns to the *seleh* on a low 5, imitating the contour of the

gerongan. In fact, most of this cycle (*gongan*) has been in the *gambang's* low registers, in keeping with the low ambit of this part of the *gerongan*.

Issues rising from analyses – *pathet* constraints and three note cells

In summary, this and the previous example shows the importance of extended scales, *seleh* phrasing and *pathet*, moderated against the contour of the *gerongan* within the *gendhing*. Widiyanto's Subakastawa omits rebound phrasing and left/right alternation or omission, which he would then encourage the student to add *ad libitum*. Two other lines of investigation spring from studying the minutiae of this Subakastawa: firstly, how the role and scalar configuration of the *gambang* are constrained by *pathet* to employ recursive and hanging shapes; and secondly, the recurrence of three-note cells.

Given that the *gambang* is a pentatonic instrument played scalar in four, eight and other binary-length patterns (*cengkok* are presented as 32 notes in length), a four note ascent from a goal note 5 will arrive at 3, a note to be avoided in *pathet sanga*. Therefore the ascending scalar stratagems from 5 are: to start from 1 above in ascending recursive shapes to reach 5 (1 $\underline{6}$ 12 3235 figure a in ex 11e below); or to start from 2 below, to continue 6 then high 2 (2 $\underline{3}$ 56 16 $\underline{5}$ 6 5 $\underline{6}$ 12 2222). If the next goal tone is 2 or 4 steps away, there are many scalar-recursive shapes that might be employed, but if the next goal tone is 1, 3 or 5 steps away, at least one jump (asterisk) must be employed: 6) 16 $\underline{5}$ 6 1235 *i653 2321); or 2) i656 56i2 * 6i *56i *56i)

Three note cells occur in various ways as strategies for improvisation and decoration, as may be seen be a reexamination of the second cycle (previously ex11b, detailed below in 11e).

Ex 11e: Three note cells in *cengkok* phrasing

Figure c is a *pathetan*-like figure, a three note cell missing the "avoided" tone 3; and e is a tresillic *seleh* on the three note cell 235. The *gendul keplak* and many *gantungan* phrases are based on three-note ranges expressed differently in each hand, as are many of the tresillic phrases examined in Ex7-9, given that the 3+3+2 formula virtually creates such forms. Sutton (78, p282-7) demonstrates a parallel phenomenon of three and four note symmetrical right hand patterns in *gender* playing, emphasising the kinesthetic nature of *gamelan* performance, adding "What is 'comfortable' to do becomes 'comfortable' to hear", which is equally true for tresillic phrasing and three note cells in *gambang* performance. Thus it prepares goal tones (*seleh*) by wide-ranging phrases or by three-note cells.

Improvisation, variation and fixity

These two examples of Solonese *gambang*, taken with Sutton's data (from a Yogyanese player with a preference for the Solonese style) and the STSI *cengkok* publication, point to a well-defined and influential style. To what extent improvisation is practised or practicable is a debate for later (Conclusions 7B), but acceptable innovation is admired. Darsono is considered innovative, perhaps daring, but is at a loss to improvise with Western musicians in comparison to East and West Javanese *gamelan* leaders. The Solonese ideal of *garap* leans more towards innovative decoration. Given the constraints of limited scalar movement, parallel octaves, three note cells, and constant movement, improvisation would be limited anyway, compared with *raga*, *maqam* or jazz. Yet we shall see outside contemporary Solo there are other models, and freer styles. The Solonese style is not fixed, but undergoes renewal through consensual innovation, which nonetheless increases aesthetic constraints. This is consistent with the Solonese milieu, where the desire for thing *alus* (refined) opposed to *keras* (coarse) runs parallel with the lineaments of social power. As we move away from this region, we also find alternatives to these aesthetics.

3D3: East Javanese Ayak-ayakan

This performance was transcribed from a video taken at Padepokan Seni Mangun Dharma, Malang. (DVD track 4.) As such it represents a freely improvised part to an introductory piece, part of a performance of traditional and modern works.

Ayak-ayakan Malang

The musical score is presented in four systems, each with a Gambang staff (treble clef) and a Balungan staff (bass clef). The key signature is one flat (B-flat) and the time signature is 4/4. The score includes various musical notations such as rests, eighth notes, and sixteenth notes. Fingerings are indicated by numbers 1-6 below the notes. Asterisks (*) are placed above certain notes in the Gambang staff to indicate specific performance techniques or accents. The Balungan staff uses a simplified notation with numbers 1-6 representing notes.

System 1: Gambang starts with a rest, then enters with a sequence of eighth notes. Balungan starts with a rest, then enters with a sequence of eighth notes. Asterisk (*) above the first note of the Gambang staff.

System 2: Gambang continues with eighth notes. Balungan continues with eighth notes. Asterisk (*) above the first note of the Gambang staff.

System 3: Gambang continues with eighth notes. Balungan continues with eighth notes. Asterisk (*) above the first note of the Gambang staff.

System 4: Gambang continues with eighth notes. Balungan continues with eighth notes. Asterisk (*) above the first note of the Gambang staff.

Ex 12: East Javanese Ayak-ayakan

Goal tone and contour

The cycle is long, and should be seen as a series of *gatra seleh*, so that from the *gambang's* entry the series of goaltones (fourth note in each *balungan gatra*) is 6-3-2-6-3-6-2-6-1, East Javanese *patet sanga* (Central Javanese *pathet manyura*). The range is constrained to seven keys, an octave plus one note, much smaller than Central Javanese practice. There are frequent rises to the high 1, followed by zigzag descents, to the low 1 or 6, and rising to the 2 or 3, for goal tone. (NB: in this *patet* 2 is the companion to 6). In bar 11 there is something like a *gantungan* to 3, though the goal tone 3 occurred in the previous bar.

Figuration

This style is different to the Solonese²¹. This practitioner was more influenced by the continuing local traditions of *gamelan* in Malang than by theory or the Solonese style. The zigzag drops may be a personal trademark. It is the continuously flowing nature of the line, and the occasional rebound that make it similar to Central Javanese style, not so much the figures.

²¹ Widiyanto is an STSI Solo graduate, and Soegito comes from Klaten, between Solo and Yogyakarta.

3D4: Sorong Dayung –an earlier style

Sorong Dayung

from Kunst V2:483-7

The musical score for Sorong Dayung is presented in eight staves. Each staff contains a melodic line with notes and rests, and a corresponding rhythmic line with fingerings (numbers 1-5) and some rests. Measure numbers are placed at the beginning of specific sections: 131, 135, 141, 145, 151, 155, 161, and 166. The notation includes various note values and rests, typical of gamelan notation.

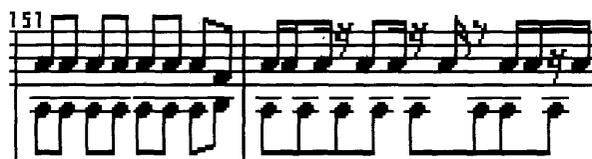
Ex 13: Sorong Dayung (from Kunst 27 Vol2 pp483-7)

This piece, transcribed jointly in the 1920's by the head of the *gamelan* and the lead violinist²² from the Solo *Kraton* string group²³ represents an older style of *gambang* playing. There is little of

²² transcribed Lebda Pradonga/Jatiswara 1923. See Kunst 27, p4837.

the *cengkok* style is evidence here, and certainly a lot more repetition of goal tones, either simultaneously or alternating between hands. It may be that in *irama tanggung*, at this time the prevalent style avoided the *cengkok* patterns, applying them in *irama wilet* and *rangkep*, which *iramas* would not occur in this piece.

Bar 149, leading to a new *gongan* on A/note 5 is where one would expect a tresillic *seleh* phrase. Instead a scalar phrase leads down from the Eb/note 2, and up from the low 2. There are enough similarities to the *seleh* phrases already seen to see it as part of the same continuum - high2-low2-goaltone 5, consistent with *pathet lima*. A more familiar tresillic pattern occurs at bar 140, where we see high 6 - low 6 -leading to *kenong* on 2 (see also bars 144, 157). The *gantungan* on 5 at bar 150 uses simpler forms of the phrases seen above:



Ex 14: *Gantungan* from 1920's

This phrase contains both inner contrary movement and rhythmic alternation of left and right hands. The use of *kempyung* here (the Bb/F or 6/3 dyad) is seen many other places in this transcription. Also common is the practice of omitting one of the hands, and then the other (bars 135-6, 139, 156) though right hand omission is more common (bars 140, 144, 148, 154, 157, 162). Towards the end we see (bars 166-7) a phrase featuring rebound that has a little more in common with the *gendul keplak* phrase, which sustains *gantungan* on a *kenong* 2. It is significant that the long ascending passages found throughout contemporary Solonese publications and performances are absent here.

3D5: Phrases from the *gambang gangsa*

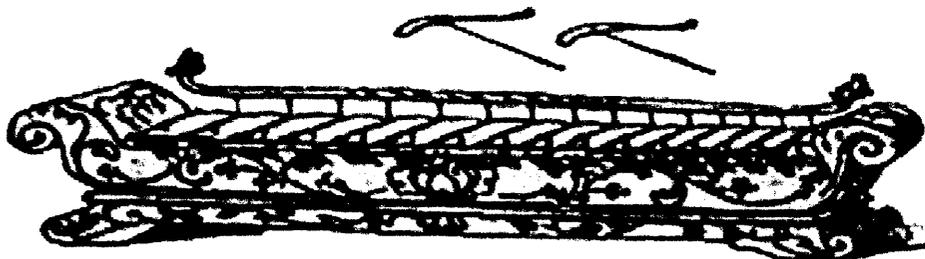


Fig 35: *Gambang Gangsa*

The *gambang gangsa* is a small metallophone, not present in today's Javanese *gamelan*. It has the stand of an elongated *saron*, but with thinner bars, like a *gambang*. Its name appears in early documents, and implies bronze *gambang*, so I was interested to see if its phrasing was connected in any way to the modern *gambang*. Kunst (33:171-2) stated that the *gambang gangsa* was no more than an older instrument containing all the notes of *peking* (*saron panerus*), *saron* and *demung*, and

that it was only played nowadays in the Solonese gending *Celepita* (yet to be sourced). Suryabrata's version of the Yogyanese *gendhing* Liwung contained a part, taught to me on *peking*, but attributed to *gambang gangsa*, being the only example of that style I have seen. It is certainly unlike any other *peking* part that I have come across.

<i>Balungan</i>		6		5		3		2		6		5		3		2														
<i>Gambang gangsa</i>	6	6	6	6	6	3	6	5	3	3	3	6	5	3	2	6	6	6	6	6	3	6	5	3	3	3	6	5	3	2
<i>Phrase shape</i>		4		M		4		U		4		M		4		U														
	i	6		i		6		2		1		2		(6)																
i i i i	6	6	6	6	i	5	6	i	5	6	i	6	2	3	2	2	1	2	1	1	2	3	2	2	2	3	5	6		
	4	4		L		K		A		A		A		U																
	3	2		1		6		3		2		1		6																
3 5 3 3	2	3	2	2	1	2	1	1	6	i	6	6	3	5	3	3	2	3	2	2	1	2	1	1	6	i	6	6		
	A	A		A		A		A		A		A		A		A														
	3	2		1		6		3		5		3		(2)																
3 5 3 3	2	3	2	2	1	2	1	1	6	i	6	6	3	2	3	3	5	6	5	5	3	2	5	3	2	1	3	2		
	A	A		A		A		A		A		A		L		L														

Ex 15: Liwung (from Suryabrata) gambang gangsa part

Analysing it by Suryabrata's terms, it contains the phrase shapes *monggang* (M), *ukel* (K) *luk gantung* (L), *udan mas* (U) and two other forms - four identical notes in anticipation of the goal tone (4), and a phrase leading to note A of ABAA form (A), which is certainly the most common. There are *gambang*-like elements here, together with the refined, classic style that Suryabrata favoured. The principle of anticipative repetition, heralding a goal tone, is found on both *gambang* and *peking*, but the example is more like *gambang*, as will be seen in the table below. Two of the phrases - i 5 6 i 5 6 i 6 and 3 2 5 3 2 1 3 2 - could easily be found on the *gambang* today, though the first might also appear on *bonang panerus*.

These patterns may be compared with the *imbal demung* technique used in Yogya, and as a further comparison, the following score for Liwung (1st two *gattras*) shows three second density (Irama 2) parts: a more standard *peking* part (my own version); and the *saron pancer* (a *saron* part with pedal/filler note 3 - 2nd line, called *Pancer*) and *demung imbal* (3rd and 4th lines - Ir 1 and 2 parts) parts as given by Rudhatin (85).

Bal	6		5		3		2		6		5		3		2																		
Peking	6	6	5	5	6	6	5	5	3	3	2	2	3	3	2	2	6	6	5	5	6	6	5	5	3	3	2	2	3	3	2	2	
Pancer	3	6	3	5	3	6	3	2	3	6	3	5	3	6	3	2																	
Dem Ir1	2	3	5	6	5	6	5	.	5	6	5	3	2	3	2	.	2	3	5	6	5	6	5	.	5	6	5	3	2	3	2	.	
Dem Ir2	2	3	5	6	5	3	5	6	5	3	5	6	5	3	2	3	2	3	5	6	5	3	5	6	5	3	2	3	2	3	2	3	2
GmbG	6	6	6	6	6	3	6	5	3	3	3	3	6	5	3	2	6	6	6	6	6	3	6	5	3	3	3	3	6	5	3	2	

Ex 15a Peking, saron pancer and demung imbal for Liwung

The *peking* part is clearly of different and simpler construction than the part given by Suryabrata²⁴, the *saron pancer* part shows no similarities to the *gambang gangsa* part, and the only

²⁴ See Sutton 88, for further *peking* variations.

common feature the *demung imbal* and *gangsa* parts share is an occasional A motif – eg. 2322 – though this occurs in different places of the *gendhing* for each instrument.

The other piece often cited for *gambang gangsa*, *Celepita*, needs to be added to this work, but I have been unable to track it down. The *gambang gangsa* evades definition, but if Suryabrata's example is authentic, the style contains aspects that link it to the *gambang*, and the design of the instrument in the Raffles *gamelan* clearly place it within the form of *gambang*.

Summary

Following the analyses of four Javanese *gambang* performances, it appears that the Solonese *cengkok* are followed in Solo more than elsewhere. They represent refinements of playing that may not always be heard in live performance throughout Java. A complete compendium of Javanese motivic phrases may become an enormous volume, and the function of the phrases, as well as their form, may elicit debate. Nonetheless, many common features emerge from this small selection:

- after a gong in a fully established *irama* the *gambang* tends to rise from a low note towards the next goal tone in the upper middle range. It will move to the highest range a little later, gradually descending to the lowest form of the goal tone when the large gong is sounded;
- the rising and descending contours feature recursive or zig-zig scales, while the middle plateaus feature tresillic *seleh* phrases (Sutton's S-shapes and the preparatory F shapes, etc);
- three phrases have distinct shapes related to their functions – the *gantungan* phrases; those like *kacaryan* that reach a goal tone antithetical to *pathet*; and phrases with anticipatory repetition, which in Solo may not involve more than five successive notes, but which may be considerably more in other regions.

In fact, many of my videoed examples of Central Javanese *gambang* are less complex than the STSI Solo examples (see DVD tracks 4 and 5). Solonese practitioners like Paimin and Darsono appear to convey a lot more *pathet* and deliberation in their performances than many rural practitioners, who are engrossed in the performance in their own way. *Gambang* in Central and East Java is improvisational, and that may range from embellishment to stringing together some well rehearsed patterns to consciously varying well-established *cengkok*. Much will depend on the player. To what extent this is influenced by regionalism is not easy to ascertain in the Central and Eastern areas. So much depends on the moods and conditions surrounding the performance. A lesson at STSI, a rehearsal of a private group, a recording for Radio Republic Indonesia or a village *selamatan* will all attract different levels of attention, of *alus* (refined) and *kasar* (coarse) behaviour, and these will affect the performer's choices. Javanese consider social harmony (*rukun*) to be paramount (Sutton

91), and though this is bound to be present in a player's choices, it would be impossible to separate it from personal ability, peer influences, the player's own education and current styles. Research into distinct regional styles in Central and East Java would probably begin in those places where other regionalisms have been researched – Solo and Yogyakarta being the two most obvious, though following Sutton's lead, Semarang, Surabaya and Malang will also prove to be identifiable.

Once we travel to West Java, further east or across the sea, however, we find that far more has changed in the style of playing the *gambang*.