Theorizing About Music

The Case of Gamelan

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PREFACE

Like any music theory, gamelan theory developed in response to conditions of socio-musical life and technology at given periods of history. A seed of theoretical perspectives of gamelan can be found in the early Javanese literature. For example, some passages or sections of *Serat Tjențini* (a lengthy poetic work written in the early nineteenth century) discuss gamelan practices, repertoire, and performance contexts. Usually, the discussion of gamelan in these manuscripts is an integral part in the consideration of other topics. As history advanced, a handful of Javanese manuscripts focusing on gamelan emerged, such as *Sendhon Langen Swårå* (mid nineteenth century) and Tondhakusuma's *Serat Gulang Raryå* (1870).

Most of the Javanese sources represent a compendium of knowledge and interests of the author rather than the exposition of an abstracted, unifying topic (Becker 1984: xii); they belong to partly oral partly typographic tradition. Another trait shared by these writings is the lack of notated musical examples. Therefore, these sources show us only an incomplete picture of musical practice of that time.

Nineteenth-century Java also witnessed the interaction between European intellectuals, learned Javanese courtiers, and leading court artists. The interaction created an atmosphere of a mixed Western-Javanese intellectual life. It was in this context that gamelan theory developed. Gamelan writings written by both Western researchers and Javanese theorists proliferated. There were also experiments in notation for gamelan. Subsequently, notation became a part of gamelan tradition. It is used for archiving pieces, musical analysis, and as a learning aid for rudimentary playing.

The mixed Western-Javanese intellectual life continued to be an important context for the development of twentieth-century gamelan theory. With the development of ethnomusicology, the mixed intellectual atmosphere was intensified in the mid-twentieth century, as a result of the increasing number of ethnomusicologists to study gamelan in Java and the opportunity of a number of Javanese theorists studying ethnomusicology in the West. Consequently, Western-Javanese intellectual interaction continues to produce a fruitful result in the development of gamelan theory. The present study is no exception.

SPELLING AND PRONUNCIATION

Javanese	Pronunciation	Javanese example
a	in a closed syllable, as in father	<u>d</u> adi
å	in an open syllable, as in l <u>aw</u>	lim <u>å</u>
c	<u>ch</u> urch	<u>c</u> èngkok
d	dental sound	<u>d</u> emung
dh	palatal sound, as in <u>d</u> ay	gen <u>dh</u> ing
e	<u>a</u> bout	nem
é	ate	pélog
è	let	gend <u>è</u> r
i	in an open syllable, as in f <u>ee</u> t	dad <u>i</u>
	in a closed syllable, as in <u>bit</u>	al <u>i</u> t
ny	ca <u>ny</u> on	ma <u>ny</u> urå
0	in an open syllable, as in zer <u>o</u>	<u>sléndr</u> o
	in a closed syllable, as in l <u>aw</u>	ken <u>o</u> ng
r	rolled r	site <u>r</u>
t	dental sound	<u>dh</u> å <u>dh</u> å
th	palatal sound, as in later	pa <u>th</u> et
u	in an open syllable, as in <u>too</u>	<u>gu</u> l u
	in a closed syllable, as in p <u>u</u> t	tab <u>u</u> h

Notation for each of the illustrations is presented in both Western Stave and Kepatihan.

I. INTRODUCTION

I.a Gamelan Instruments

Deriving from the root word "gamel" (lit. "to strike"), the term "gamelan" refers to an ensemble consisting of predominantly gong and metallophone type instruments which produce tones when struck with mallets (*tabuh*). Other types of percussion instruments in the gamelan ensemble are a wooden xylophone (*gambang*) and a set of three headed drums (*kendhang*). There are a few instruments in the gamelan which are not percussion instruments: a two-stringed bowed instrument (*rebab*), a plucked zither-type instrument (*celempung* or *siter*), and a horizontal bamboo flute (*suling*). A complete ensemble also includes a female singer (*sindhèn*) and a male chorus of two or more singers (*gérong*).

1.b Notation

Music notation is commonly used for illustrating musical examples. But notation for gamelan was not introduced until the late nineteenth century (Sumarsam 1995; Perlman 1991). The lack of musical notation might have restricted the elucidation of the complexity of gamelan melodic structure. It should be mentioned, however, that since notation has been used in gamelan, it has influenced the direction and character of gamelan theory, particularly the tendency to focus on the commonly notated "melodic theme" of *gendhing* (gamelan compositions), the middle strata of the gamelan texture.

Initially, notation was used for learning the music. Subsequently, in line with a notion of archiving old cultural artifacts to save them from extinction, notation was used for documenting gendhing. Whether used for documenting or learning the music, descriptive notation (i.e., notation with precise rhythmic and melodic representations) has never been important to gamelan musicians. A complete score of all the parts of the gamelan ensemble has never become necessary. The aural transmission of the music seems to keep gamelan notation in a prescriptive form, to be used as a learning aid or a mnemonic device. Although it is not uncommon nowadays to find young Javanese musicians learning gamelan from notation, it is always in combination with aural learning.

In the late nineteenth century and the beginning of this century, there were a number of experiments with notations for gamelan, modeled after Western notations (Sumarsam 1995: 107-113). Eventually, the Javanese chose *nut ongkå* (cipher notation) for its simplicity and efficiency. In the beginning of this century, the cipher notation was perfected with paraphernalia of the European Solfege system. This notation has been commonly used in Java since the beginning of this century to the present time.

In this notation, numbers represent pitches. The pitches for *sléndro* (see below), from low to high, are 1 2 3 5 6, representing named-pitch *barang*, *gulu*, *dhådhå*, *limå*, and *nem*; for pélog, 1 2 3 4 5 6 7, representing named-pitch *penunggul*, *gulu*, *dhådhå*, *pélog*, *limå*, *nem*, and *barang*. The paraphernalia of the notation includes: a dot or dots in line with the number indicate rests; a dot above or below a number to indicate upper or lower octave; a dash or dashes above the numbers indicate fractional duration of notes; groupings of four-note units (*gåtrå*) are indicated by a space, thus marking off these metrical units. Other symbols include:

= kempyang = kethuk = kenong = kempul () = gong.



Figure 1 Balungan melody of ladrang Dirada Meta (Angry Elephant), an excerpt.

I.c Laras

One of the unique characteristics of gamelan music is its tuning system (*laras*). The two principal laras, *sléndro* and *pélog*, are pentatonic tuning systems, whose pitches cannot be located in the Western chromatic scale. Each laras is defined by its intervalic structure. Sléndro is an anhemitonic pentatonic tuning system: a pentatonic scale without semitones, sometimes described as an equipentatonic scale. In practice, however, subtle differences between narrow and wide intervals exist. Furthermore, the scale is not standardized from one set of gamelan instruments to another, although gamelan tunings follow a certain

configuration of wide and narrow intervals which relate to modal practice (Martopangrawit 1984: 44-45; Hatch 1980: 130-158).

Named-pitches	Named-pitches in cipher notation	Western equivalences
barang alit	i	do-
Nem	6	La
Limå	5	Sol
Dhådhå	3	mi+
Gulu	2	Re
Barang	1	do-

Figure 2 Sléndro pitches and approximate Western equivalents

Note: the missing pitch 4 does not represent a gap note. It is used for the sake of uniformity with pélog (see below) in assigning numbers in one octave.

A sléndro saron has a sequence of slabs with the ordering of tones of

1	2	3	5	6	i
---	---	---	---	---	---

The five tones in a sléndro bonang are arranged as follow:

6	5	3	2	i	ż
1	2	3	5	6	1

Laras pélog is also pentatonic but consists of not one but three basic five-pitch scales (see figure 3). A gendhing may use one or a combination of these scales. Unlike sléndro, narrow and wide intervals in each of these scales are very apparent.

	Ι			II			I	II
						barang	(7)	si
nem	(6)	la	nem	(6)	la	nem	(6)	la
limå	(5)	sol#	lima	(5)	sol #	limå	(5)	sol #
			pélog	(4)	fa #			
dhådhå	(3)	mi-				dhådhå	(3)	mi -
gulu	(2)	re	gulu	(2)	re	gulu	(2)	re
penunggul	(1)	do+	penunggu	1(1)	do +			

Figure 3 Pélog three basic five-pitch scales and approximate Western equivalents

To accommodate the use of these three scales, most pélog instruments are built with seven pitches. For example, a pélog saron has a sequence of slabs with the ordering tones of

1	2	3	4	5	6	7
---	---	---	---	---	---	---

The seven pitches in a pélog bonang are arranged as follow:

4	6	5	3	2	1	7
7	1	2	3	5	6	4

Usually, sléndro and pélog gamelan of the same set share a common pitch (*tumbuk*): tumbuk 6 or tumbuk 5 (see figure 4 below). In gamelan tumbuk 6, two other pitches are considered the same: pitch 2 in both tunings and pitch 4 in pélog with pitch 5 in sléndro. In gamelan tumbuk 5, there are also two other pitches to be considered the same: pitch 1 of both tunings and pitch 6 in sléndro with pitch 7 in pélog.



Figure 4 Pitch relations of two gamelan tumbuk

I.d Classification of Gamelan Instruments, a Point of Departure

Gamelan instruments can generally be classified according to their functions in the ensemble. However, such classification cannot explain the full range of the performance practice of the instruments. This is because different types of compositional processes and different genres of gamelan pieces involve a variety of performance techniques on many instruments. Therefore, a precise classification of instruments will never be accomplished. The classification of instruments presented below should be viewed as a shorthand explanation; further detailed treatments will be found in the subsequent sections.

Gamelan has accurately been described as an ensemble based on melodic stratification (Hood 1963: 452): several layers of different horizontal melodic strata with different levels of density defined by the registers of the instruments (i.e., generally, the higher the register of the instrument, the higher its density levels.) It should be mentioned that melodic registers of the instruments themselves are also stratified: instruments may comprise different octave ranges, extending from one octave or less to two and one-half

octaves. The interplay between these two kinds of stratifications can be used to explain the melodic and rhythmic functions of the instruments.

I. MELODY (see Figure 5a on page 56)

1. Instruments and vocalist that carry melody in both simple and elaborate forms.

1-a. Instruments with wider melodic registers that play from high to highest density levels perform melodies in elaborate forms. In this group, rebab and gender are considered to be the leading instruments in the ensemble. Gambang, sindhen and gérong are the second in importance. In most cases, especially in the soft-playing style, these instruments are an important melodic reference from which the melodic identity and the proper melodic motion of a gendhing can be sought.

1-b. Suling, gendèr panerus, and celempung, whose melodic registers are narrow, carry melodies in elaborate form in the highest density level (except suling). They play melodic ornamentation, adding to the textural sonority of the music.

2. Instruments which play a melodic abstraction or the melodic skeleton of a gendhing (*balungan*). They are: slenthem, demung, and saron barung (they will be referred to as saron, for short) These instruments carry melodies at a medium density level, although in certain musical contexts they may play in a low density level. These instruments play balungan within their one-octave range.

3. Instruments whose function is to mediate between group 1 and 2 are: bonang barung, bonang panerus, and saron panerus (peking). These instruments play at higher (bonang barung and peking) and highest (bonang panerus) density levels. Bonang barung (the low octave bonang) is one of the leading instruments in the ensemble. With its two and one-half octave range, it mediates the instruments in group 1 and 2, guiding the melody of the ensemble.

II. GONGAN STRUCTURE

Gongs of different sizes, either hanging or standing, play at the lowest density level in the ensemble. They are: gong ageng, kenong, kempul, kethuk, and kempyang. Marking important accents, these gongs delineate the formal structure or *gongan* of the piece. The term "colotomic" is commonly used by Western scholars to describe this structure.

III. TIME

Kendhang of different sizes and different playing styles regulate temporal flow and temporal density (*irama*) of a gendhing. The kendhang also control transition and signal the end of a piece.

I.e Gamelan Setup (see Figure 5b on page 57)

The functions of the instruments circumscribe their placement in a performance space. The soft-sounding instruments are grouped together in the front row, with leading instruments (rebab and gendèr barung) in the middle. Bonang barung, another leading instrument, is also positioned in the front row, to the left or right of other leading instruments. To serve properly in its role to lead temporal aspects of the ensemble, the drum placed in the middle. The third row consists of a group of saron, whose function is to play balungan. Colotomic instruments are in the last row, with the gong in the middle or in the side, depending on the shape and the size of the space. The following descriptions of gamelan instruments are arranged according to the above musical categories.



Figure 5a Instruments of the Gamelan, Their Functions in the Ensemble

Figure 5b A gamelan setup

Note: each of the silhouettes represents a corresponding instrument.



II. THEORIZING GENDHING: BACKGROUND

II.a Balungan

It has been very common to view *balungan* (melodic skeleton, the middle density level of the multi-layer gamelan texture) as an important element of the melodic structure of gamelan; hence, the basis for many theories of gendhing. However, our understanding of the concept of balungan has gone through a process of reinterpretation and has significantly changed our understanding of gamelan composition. In the beginning, scholars assumed that balungan was the melody played by a group of one-octave saron instruments (Kunst 1973; Hood 1964). Balungan was said to be the principal melody from which other parts were derived. Subsequent studies show, however, that the balungan melody encompasses multi-octave register of gendhing (Sumarsam 1984); the saron instruments play balungan melody within their limited one-octave range. For example, the stepwise balungan melody of



Since no instrument can play balungan in its proper melodic register, it is assumed that the proper melodic directions of balungan exist only in the mind of the musicians (ibid., 1984). Bearing this in mind, however, the melodic structure of a gendhing is far more complex than an assumption which says that the melodies of different parts in the ensemble are based on the balungan. In addition, the construction of a balungan melody is an intricate process, involving a group consensus of melodic interpretation.

It is true that balungan is an important reference in discussing gendhing and is a useful part for learning the music. But the assumption of its supremacy as principal melody

is a reified interpretation. The term balungan in reference to the melodic skeleton of a gendhing may be a recent invention; it is absent from older manuscripts on gamelan (ibid., 144-153). However, this does not mean that in the past such melodic skeleton did not exist. It is even possible that some other terms were used to refer to the skeletal melody. A manuscript from the court of Yogyakarta, *Serat Pakem Wirama* (1934) suggests that the term *wilet* may have referred to balungan (Perlman 1994: 557-558). An earlier source, *Serat Gulang Rarya* (1870) suggests that the term cèngkok refers to the melodic skeleton played by demung: "*demung dumunung ngirama, mangungkung cèngkok ngugeri*" (demung plays in appropriate tempi, sounding its cèngkok as a guidance....). In light of the overlapping use of these terms, it is safe to suggest that, in the course of the development of gamelan practice, new gamelan terms have been invented, and the existing terms became interchangeable with new ones, or, were given new meanings.

In fact, the interchangeability of gamelan terms is still very common in contemporary gamelan practice. For example, the term cengkok can mean "melodic style," "melodic pattern," or one gongan cycle; often, the term wilet ("melodic ornamentaion") is interchangeable with cengkok ("melodic pattern"); the term balungan may refer to the melody played by saron or the melody played by the lowest bonang called bonang panembung (as in the Yogyakarta tradition). This is to suggest a rich variable of musical practices and the interconnectedness of different parts in the ensemble. The key to understanding gamelan musical structure, therefore, lies in the dynamic interaction of different instruments (each with its own musical idiom and melodic range) in the process of expressing the melody of a gendhing.

II.b Gåtrå

Another element which is important in contemporary theories of gendhing is *gatra* (a four-note unit of balungan). These theories have given gatra an important place in defining modal system (*pathet*) and compositional process in gamelan. Becker (1980) has viewed gatra as stock of melodic formulas which can creatively be recombined or manipulated in creating a gendhing. Expanding this notion, Sutton (1991) finds that different gendhing and different parts of the ensemble are seen as variations of each other. These theories are supported well by quantitative data. Reexamining the issue is

worthwhile, however, since empirical descriptions of compositional process in the history of gamelan are lacking.

In contemporary gamelan discourse, gatra and cèngkok are seen as related to each other: cèngkok is the manifestation of gatra in the elaborating instruments. Familiarity with individual gatra and cèngkok is often helpful in learning to play these instruments or to sing. This is especially true with the gendèr. Musicians even identify some gendèr cèngkok with names. Martopangrawit (1972-76) has written an extensive classification of gendèr patterns. But other elaborating instruments only minimally use cèngkok classification and identification. The fact that classification of melodic patterns can be done rather successfully for certain instruments, but not for others, is an important question that needs to be addressed. In any event, the richness of gamelan performance practice has brought about the study of another type of compositional process. Before pursuing this elucidation, it is necessary to provide a background on colotomic structures of gendhing and pathet.

II.c Gongan

"Gong jumeglug mandul-mandul / gumulung ombaking ririh"[the booming and shimmering of the gong is as if the rolling of the soft-sounding ocean tide] (Tondhakusuma 1870: 5).

The passage above declares the beauty of the sound of the gong. It should be pointed out, however, that the passage refers to *gong ageng* (large gong), whose lowest sound in the ensemble is reverberating, waving, and gradually decreasing in volume, lasting as long as 12 seconds. Originally, the word gong is a Malay word. It is an onomatopoetic word, i.e., the name of the object derives from its sound: "Gong" is a vocal imitation of the low, reverberant sound of a large gong. Therefore, it is only a large hanging gong that should be called gong. But when the word is adopted into English, any circular-shaped instrument with a protruding knob on its center, despite its size or its sound, is called gong.

The remarkably powerful sound of the gong has given the instrument an important function in the gamelan ensemble. It is to mark the end of a formal rhythmic structure fundamental to the organizing principle of a gendhing. Because the gong is so important in giving a feeling of balance after the longest melodic section of a gendhing, this fundamental unit itself is called *gongan*. Musicians play the gongan section in repetition. Therefore, it is right to sense the gongan as moving cyclically.

There are several kinds of gongan or colotomic structures, each defined by a combination of two factors: its length (as determined by the number of the basic beats) and the position of the smaller gongs (kenong, kempul, and kethuk) in marking important structural points. According to the number of kenong per gongan, the structures are grouped into two: two kenongan and four kenongan per gongan.

	<u> </u>	1			1
basic pulses per gongan	2 kenongan per gongan		4 kenongan per gongan		size
16	ketawang		lancaran		alit (small)
	mérong	<u>inggah</u>	mérong	<u>inggah</u>	
32	ketawang gendhing kethuk 2 kerep	ladrang* or kethuk 4			tengahan (medium)
64	ketawang gendhing kethuk 4 kerep	ladrang	gendhing kethuk 2 kerep	ladrang or kethuk 4	
128	ketawang gendhing kethuk 8 kerep	kethuk 16	gendhing kethuk 4 kerep	ladrang, kethuk 4, or kethuk 8	
			gendhing kethuk 2 arang	ladrang, kethuk 4, or kethuk 8	
256			gendhing kethuk 8 kerep	kethuk 16	ageng (large)
			gendhing kethuk 4 arang	ladrang, kethuk 4, or kethuk 8	

Figure 6 Gongan structures of gamelan compositions

Note: (1) Although ladrang is classified as inggah, it can also be played independently.

(2) In its widest sense, the word gendhing means gamelan compositions. In its

narrowest sense, it means the composistions with longer structure, consisting

The formal structure of a gendhing can be described as following the principal of binary and hierarchical subdivisions. For example, in a gongan cycle called *ladrang*, each gongan consists of 32 beats. The cycle is divided in quarters by the stroke of kenong, indicating the second most important structural points. Subdividing the kenong phrases are kempul and kethuk, respectively, indicating structural points of lesser importance (see figure 7). In *ketawang*, each cycle consists of 16 beats. The stroke of kenong divides the cycle in half, which is then subdivided further by kempul and kethuk (see figure 8)









Key: G = gong; N = kenong; P = kempul, T = kethuk

In longer gongan structure, there are two major sections. The first section is *mérong*, portraying a peaceful or solemn melodic character. The second section is the *inggah*, which is lively in melodic character. In addition, both sections, especially inggah, can be subject to different treatments, such as playing in different *irama* (tempo and density level, see below). Each of the structures of mérong or inggah is named and defined by the number and the position of the kethuk in the gongan cycle. For example, in a mérong called *kethuk 2 kerep*, the 64 beats of the gongan cycle is marked in quarters by the stroke of the kenong (i.e., a gongan consists of four kenongan). In each kenongan, the kethuk is played on the 4th and 12th beat. The word "kerep" means "often" or "close to each other," indicating the distance between two kethuk as being close to each other (7 beats). This is in contrast to the structure called *kethuk arang* ("arang" means "seldom" or "far apart"), in which the distance between two kethuk is far apart (in kethuk 4 arang, the distance is 15 beats).

Figure 9 Mérong kethuk 2 kerep (one kenongan)

Figure 10 Mérong kethuk 2 arang (one kenongan)

11

The structure of inggah is also named after the number of kethuk per kenongan. For example, in inggah kethuk 4, each kenongan is divided in quarters by the stroke of the kethuk (see figure 11 below). In both mérong and inggah, the kempul is absent, although conceptually the middle of the kenongan is felt as a comma.

Figure 11 Inggah kethuk 4 (one kenongan)

-^- -^- -^- ^-<u>,</u>

II.d Pathet

Literally meaning "constraint," pathet is a modal classification of gendhing. Each laras recognizes three pathet: sléndro nem, sanga, and manyura; and pélog lima, nem and barang. As modal practice, pathet circumscribes general mood or emotive content of a gendhing. The above sequence of pathet represents the progression of mood of gendhing, from solemn or majestic to lively mood, representing the ordering of pathet for a gamelan performance. During the daytime performance, however, calm pieces in sléndro pathet manyura or pélog pathet barang are played in the first period of the performance.

Pathet has been intensively studied by both Western and Indonesian theorists. Early studies looked at pathet in terms of a static abstraction of musical features. Pathet distinctions are defined in terms of the hierarchical use of tones. It has been proposed that tone hierarchies are associated with the cycle of fifth (Kunst 1973). The terms tonic, dominant, and subdominant are often borrowed to explain gamelan tonality (see Hood 1954; 1988). For example, tone hierarchies in sléndro pathet sanga are: tonic = 5, dominant = 2, secondary dominant = 6, transitional = 1, enemy = 3 (Hood 1988: 41).

Subsequent studies took a more empirical approach, by identifying pathet in terms of not only tone hierarchies, but, more importantly, the character of gatra and the position of gatra within the formal structure of the piece (Becker 1980: 22). Using statistical analysis of the distribution of gatra patterns of 300 pieces, Becker establishes the profiles of patterns use in each pathet. The profile is determined by the frequency of the appearance of gatra in particular positions within the formal structure (i.e., the positions, in the order of importance: Gong, Kenong, and Kempul). For example, the important patterns in pathet manyura in Gong position are 3216 ans 2126; In Kenong position: 2321, 5321, 3532, 6532,

3232, 5653, 6523, 3216, 2126; In Kempul position: 2321, 5321, 3561, 3532, 6532, 2222, 5653, 1653, 6123, 2123, 3532, 3333, 3265, 1216, 2126; Exclusive patterns in Gong position: 3126; In Kenong position: 5253, 1516, 3356; In Kempul position: 1123 (ibid. 181; for further discussion and tables of distribution of patterns in each pathet, see ibid.78-88; 166-187)

Other studies of pathet have taken into consideration the performance practice of certain instruments. For example, in analyzing sléndro pathet, gendèr playing is used to explain tones hierarchies and tone relations (Martopangrawit 1984; Sumarsam 1975)

Figure 12 Tone hierarchies and tone relations in sléndro pathet (drawn from Martopangrawit 1984: 53)

Pathet	dhung (lower kempyung)	dhong	dhang (upper kempyung)	dhèng (pelengkap)	dhing
Sångå	1	5	2	6	3
Nem	5	2	6	3	1 (see below)
Manyurå	2	6	3	1	5

As can be seen in figure 12, Javanese terms are used to describe tone hierarchies. The use of tone as *sèlèh* (goal-tone or cadential pitch) is important consideration for tone hierarchies. Dhong (the heaviest tone weight) is the most important tone to which the other tones are subordinate. Dhung, the lower kempyung of dhong is next in importance. Dhang, the upper kempyung dhong, is next in importance after dhung. The next in importance after dhang is dhèng, which is also described as *pelengkap*, upholder. And the weakest tone is dhing (the lightest tone).

Pathet nem does not entirely conform to this scheme of tone hierarchies, however. Although it has special characteristics, commonly pathet nem is considered as a mixture of patterns from pathet sanga and manyura. Therefore, the tone hierarchies are not as rigid as the other pathet. In fact, pathet nem has no dhing.

The use of the gradation of tone weights (dhong dhung dhung dhèng dhing) to explain tone hierarchies emphasizes the linear character of gamelan melodic structure, marginalizing vertical tone relations (i.e., harmony). There are only two terms which are commonly used to describe the vertical relationship of tones: *gembyang* (octave) and *kempyung* (combination of two notes separated by two tones or keys). These combinations of tones are used for the endings of gendèr patterns. In conjunction with the melodic character of a pattern, the use of gembyang and kempyung at the end of a pattern is an important factor for pathet distinctions.

Figure 13 Gembyang and kempyung for gendèr pattern in pathet sanga (Sumarsam 1975:167)



Key: Solid lines indicate the gembyang and kempyung which are used most often. Broken lines indicate the gembyang and kempyung which appear less frequently



Figure 14 Gembyang and kempyung for gendèr pattern in pathet manyurå (ibid.)

Below are examples of pathet sångå and manyurå patterns of gendèr. They are transposable to each other, and each pattern ends on gembyang or kempyung.

Figure 15 Pathet manyurå and sångå transposable gendèr patterns



a manyurå pattern ending on kempyumg 3-	i a sångå pattern ending on kempyung
2-6	
<u>ż.iż 6 ż ż ż i 5 . 6 i 6 .56 i</u>	<u>i .6i 5 i 2 i 6 3 . 5 6 5 .35 6</u>
$. 1 2 . 6 \overline{216} 1 . 3 . 1 . 2 . 3.$	$. 6 1 . 5 \overline{165} 6 . 2 . 6 . 1 . 2$
a manyurå pattern ending on gembyang 6-6	a sångå pattern ending on gembyang 5-5
<u>535.35651.6.1.616</u>	3 2 3 .23 5 3 6 . 5 . 6 . 5 6 5
· • • • • • • • • • • • • • • • • • • •	••••••••••••••••••••••••••••••••••••••

Comparison between the above gendèr patterns reveals that patterns in pathet manyurå and sångå are transpositions of each other. This does not mean, however, that all pathet manyurå pieces can be transposed to pathet sångå (There are only a handful of pieces which have versions in both pathet). Other parameters, such as the extent of melodic range of a gendhing and the treatment of pattern on different instruments, enter into consideration for pathet distinctions.

As previously mentioned, tone hierarchies in pathet nem need a special consideration. It is true that pitch 2 tends to be the strongest tone in pathet nem. But the important characteristic of pathet nem lies in the ways sångå and manyurå patterns are linked to each other. In fact, a certain combination of two patterns even become specific identification of pathet nem.

Figure 16 A specific pattern of pathet nem, a special linkage of manyurå to sångå patterns

THE HI	}					f			2			ſ			•		2	<u>}</u>	<u>↓</u>				•							0	
			5				6				5				3				2			1				6				5	
ż	•	īż	6	ż	ż	ż	6	ż	i	ż	i	ż	ż	ż	i	6	•	6	i	6	. 6	3	6	i	ż	2.i	ż	i	6	5	
•	1	2		2	3	5	•	•	•	. 6	55	3	53	32	3	•	2	3	5	.2	2352	6	3	•	2	3	5	6	16	5	

Tone hierarchies are also an important consideration for pélog pathet. However, pélog pathet need special attention. This is because, unlike sléndro, pélog gendhing uses three basic five-pitch scales. As previously mentioned, the three scales are: 123 56; 12

456; and 23 567). Pélog pieces using the third scales (23 567) are in pathet barang. Only a few pieces in pathet barang use pitch 4 (forming the scale 234 67) or 1 in a weak position. Although tone hierarchies exist, sub-pathet based on them are not identified. In pathet barang, 5 and 2 are the strongest tones; 6 is the next in importance, which is followed by 3 and 7.

Gendhing pathet limå and nem share the first and second scales. Therefore, the difference between these two pathet is very subtle. As with her study of sléndro pathet, Becker (1980) also analyzed pélog pathet in terms of the character of gåtrå and the frequency of particular gåtrå as they appear in strong or weak positions within the structure of the piece. Martopangrawit (1984) and Hastanto (1980) also examine tone hierarchies of pélog pathet. Significantly, they search for certain features of the ways the two scales in their complete octave registers are used and linked. The two scales with their complete octave registers are:

Figure 17



The following are some features which indicate where the strength of each pathet lies (drawn from Martopangrawit 1984: 158-162 and Hastanto 1980: 176-192).

Pathet Limå

The lowest tone (1) appears as a goal tone exclusively in pathet limå. It is used in either scale I (123 56) or scale II (12 456). Scale II in th low octave is also specific to pathet lima. In other words, pitch r never appears in pathet nem. In the medium range, pitch t in scale II (56 12 4) and pitch 1 in both scales (12 456 or 123 56) are important goal tones. The prevalent use of pitch 3 as a goal tone also strengthen the character of this pathet. This means that pitch 4 becomes less important as a goal tone.

Pathet nem

The lowest tone used in pathet nem is pitch w, appearing as a goal tone in only a few pieces. In this lowest octave range, pathet nem gendhing use only pitch set I (23, 56, 12). Pitch 3 can also be a goal tone in this range, but pitch r is always absent from this pathet. In the medium range, the strength of pathet nem lies in the use of pitch 6 and 2 as goal tones. Pitch y appears in scale I (6, 123, 5) and pitch 2 appears in either scale I (23, 56, i) or scale II (2, 456, i). Other pitches, especially 5, and 1, may also serve as goal tones. But their use is always in conjunction with other features of pathet nem.

Figure 17 Example of balungan of gendhing in pélog limå and nem (an excerpt)

Kombang Mara, pélog lima (excerpt)



Sengkawa, pélog nem (excerpt)

6 **♦** N ۲ a de prima N 6 2 2 2 2 3 6 1.1.1 N <u>∲↓</u>↓↓↓ ╞╘┋┋╞ 6 N/G 6 ? 6 N 1613 9 3 3 Ŧ -Ó ------1 1 -۲ ٢ N/G <u>ĞJJJJIJJJIJ</u>I<u></u>₹₽₹ 6 ŢŢ 2 . . 1 2 ----____ N/G

Gendhing Kombang Mårå

Gendhing Sengkåwå

_	0165	0156	2165		2122	5 2 2	2122
••••	2165	2156	2165	••••	3123	.532	3123
			\sim				~
15.6	1.21	3212	.165	.532	5654	2.44	2126
			^				
15 6	1 21	2212	165	6	26	26	122
12.0	1.21	3212	.105	• • • 0	.2.0	.2.0	.123
• •			••	•	•	•	
			â				
EG	1654	2156	216(F)	5676	E / 2 1	6122	5676
	1054	2450	210(5)	50/0	5421	0123	2010
• •	• • •		•••			•	

				••••	66	66.5	6356
•••• ⁵	2165	2156	2165	.567	5676	.535	3212
15.6	1.21	3212	.165	.321	<u>6</u> 132	.321	<u>6</u> 123
15.6	1.21	3212	.165	56	6676	.535	3212
33	3353	6532	312(3)				
				••••	3123	.532	3123
••••	3356	7653	2123	.523	5654	2.44	2165
1235	••••	5654	.521	••••	5535	66	1653
. 561	••••	.1	1156	22	2321	<u>6</u> 123	212 ⁶
11.2	3216	5612	3212	•••63	2132	3123	2123
				••••	33	33.2	3521
••••	22.4	5654	2165	. <u>6</u> .3	2132	3123	212 <u>6</u>
15.6	1.21	3212	.165	••••	6676	.535	3212
15.6	1.21	3212	.165				
66	6656	.1.6	532(3)	umpak	(transi	tional p	hrase)
				.6.3	2132	3123	2126
••••3	.123	.123	·123	.5.5	.2.6	76	5421
.6.5	.421	12	4565	6653	2356	.653	2356
6542	1245	6542	1654	22	3216	3565	2232
••••	4456	1654	212(1)				

Baring a few exceptions, when pitch 7 appears in pathet lima or nem pieces, it is played by the saron and bonang as pitch 1. As evident in rebab and other soft sounding, elaborating instruments (including vocalist), the underlying melody of the passages in question employs pitch 1.

It is worth noting that sléndro gendèr playing can also be used to analyze the distinction between pélog pathet limå and nem (Martopangrawit 1984: 162). Gendhing of pélog pathet limå use gendèr pattern of sléndro pathet sångå. Paticularly, phrases with ending-pitch 5 and 1 should be treated as gendèr pattern in sléndro pathet sångå: in a phrase

ending on 5, this pitch should be treated as gembyang (see figure 15 on page 63), and ending-pitch 1 should be treated as kempyung. In pélog, a phrase ending on 2 should be treated as gendèr pattern in sléndro manyurå. For a phrase ending on 1, it can be treated by gendèr either as kempyung (as in sléndro sångå) or gembyang (as in sléndro manyurå), depending on its context.

Figure 18 Comparison of gendèr pattern ending on pitch 1 and 2 in sléndro sångå and sléndro manyurå



a sångå pattern ends on kempyung 15	a manyurå pattern ends on gembyang 1-1
<u>6 i 6 .56 i 6 ż . i . ż . i 6 5</u>	<u>ż .iż 6 ż ż ż i 6 .56 ż . i ż i</u>
••••••••••••••••••••••••••••••••••••••	. 1 2 . 2 532 3 .21 2 . 161 1 1
a sångå pattern ends on kempyung 2-6	a manyurå pattern ends on kempyung 2-6
<u>i .6i 5 i ż i 5 i 6 i .6i ż i 6</u>	<u>i ż i .6i ż i ż . ż . ż . ż i ć</u>
. 6 1 . 1 2 1	$. \overline{.12} . 3 2 3 . 1 . 6 1 2 \overline{321} 2$

I. THEORIZING GENDHING: II. PROCESS

III.a Melodic Precedent and Melodic Identity of Gendhing

....kang sinebut gendhèng-gendhing / gendhèng punikå angkahnyå / pangolahing swårå titis / ingkang ginandhèng gendhing / tuwin tembang sekaring rum / gantyå gendhing winahyå / angkahirå pangolah mrih / gitå swårå kang ginandhèng ing gamelan //

[....What is gendheng-gendhing? Gendheng is intended for the cultivation of definable sound; it is connected to gendhing and beautiful sung poetry. About the term gendhing, it means the cultivation of singing as it is related to gamelan.] (*Serat Tjențini* (1912-15: 204)

The passage clearly suggests the importance of vocal music in gamelan. The following account gives a historical context to the above quotation.

In its early history, gamelan was not as large as the ensemble we know today (Sumarsam 1995: 17-18). There might have been various small ensembles in which singing was important. Others were strictly instrumental ensembles, consisting of only loud-sounding instruments, such as Monggang and Kodhok Ngorèk. These ensembles play a repetitive two to four note melodic pattern in a short cyclic structure. Gamelan pieces with shorter gongan structures and repeated two- or four-note melodic units, such as pieces composed in *lancaran* and *ladrang* structure, might have been directly inspired by these ensembles. Other early ensembles consisted of a few instruments suitable for accompanying singing (ibid. 15-16).

Throughout history, instrumental ensembles and vocal music have gone through continuous interaction, exchanging each other's musical idioms, and developing new musical forms and repertoire. Evidence of the process of these exchanges and the existence of early ensemble is scanty. A few evidence suggest that a compositional genre of *gendhing kemanak* represents an early type of ensemble, exemplifying an early development of gamelan repertoire.

The earliest mention of gendhing kemanak can be found in the eighteenth-century literature *Serat Pasindhèn Bedhåyå*. An accompaniment for women's court dances, gendhing kemanak are performed by a mixed chorus accompanied by a small ensemble, consisting of colotomic instruments (gong, kenong, and kethuk); kemanak (a pair of bronze instruments with the shape of a hollow banana), providing the basic beat; and a pair of drums, guiding the tempi with simple rhythmic configurations. Musicians believe that gendhing kemanak represent ancient music. The rare use of kemanak strengthens this belief. In fact, this instrument was already mentioned in the twelfth century Javanese literature (Sumarsam 1995: 15).

The piece used as an example here is Anglir Mendhung (Resembling a dark cloud), which was composed in the late eighteenth century. It exemplifies a creative way of recomposing vocal melody to fit into a fixed rhythmic structure. The process of recomposition involves the expansion of the original melody of an unaccompanied *måcåpat* song Durma to accommodate the fixed length of the gongan structure of the piece.

Figure 19 Comparison of gendhing kemanak Anglir Mendhung and måcåpat Durmå



<u>355337(7)</u>

A- nglir men-dhung

3 5 6 7



 Key: 0 0 . = alternating two-tone kemanak (high-low-high-rest) 0
 Melody above the texts is gendhing kemanak Anglir Mendhung
 Melody below the texts is måcåpat Durma Another juxtaposition of two musical forms can be found in the eighteenth-century Kodhok Ngorèk ensemble of the court of Yogyakarta. The juxtaposition involves no vocal repertoire, but two groups of instruments, one group provides a gongan structure and its basic beats, another provides a melody. This example is useful here to show the variety of experiments in which cyclic structure and linear melody were juxtaposed.

Believed to be an ancient ensemble, Kodhok Ngorèk consists of loud-sounding instruments of gongs, kendhang, and a group of saron. The length of the gongan cyclic structure consists of 16 beats, which is divided in half by kenong. The two alternating, pélog-like tones of bonang articulate the basic pulses of the piece. A single tone bonang, whose pitch is higher than the other two, plays continuous drone. The piece starts in a fast speed. When the piece slows down, as guided by the drum, a group of sléndro saron (demung and saron barung) joins the ensemble. Tha sarons' melody consist of two melodic phrases.

Figure 20 Kodhok Ngorèk Kyai Kebo Ganggang (excluding kendhang and *rojèh* or cymbals) (based on a recording by Brunet 1973)



	banggèn				4				<u>2</u>				4			!	5			4	Ļ			2				4				•
I	bonang I		6		•		6		5		6		•	(б	ĺ	5	6	5	•		6		5		6		•		6		5
	bonang II	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2																																
II	sléndro saron	•	3	5	2	3	5	6	5	6	3	2	5	2	3	5	6	•	5	6	3	5	6	i	6	ż	i	6	i	6	5	3
5																																

The expansion and modification of vocal melody to fit the fixed length of of a gongan structure become a common model in composing gendhing for a larger gamelan. For example, the melodic precedent of gendhing Lobong is the melody of an unaccompanied macapat song entitled Kinanthi Sastradiwongsa. *Serat Tjențini*, written in the early nineteenth century, mentions this piece. It means that Lobong must have been composed in the eighteenth century or before.

Figure 21 Comparison of macapat Kinanthi Sastrådiwongsa and gendhing Lobong sléndro many (Sumarsam 1995: 185)









• 2	2 16	1 2	2 6	123	3	2 12	1 3	3 2	2	<u>126</u>	5312	1 2	<u>1 .</u> 6	<u>36</u> 1	i
2	2	•	•	2	3	2	1	3	2	6	5	3	3	5	6
36	i	<u>ż</u>	<u>3</u>	i i	<u>i ż</u>	<u>i</u>	<u>6</u>	33	2	2	13	<u>3</u>	1	2 1	6
Na- II	- Ka	a-n1-		ra ing	da-	lu		Wong a	- gung	mang-	sah se-	me-	d1		
. i	<u>i6</u> .	īżi	i īż	6 <u>iż</u>	ż	īżi	i ż	<u>2163</u>	2 16	1 2	2 12	1 2	1.6	<u>36</u> i	i
3	3	•	•	3	3	5	6	3	5	3	2		1	2	6
36	i	<u>ż</u>	<u>i</u> i	i	<u>i ż i</u>	6		33	2	2	1 3		<u>53</u>	2	2
3 6 Sirep	i kang b	<u>2</u> 0å-	<u>i</u> i lå v	i wa- nå	<u>i ż i</u> - rå	6	Sa- c	33 lå- y	2 vå wus	2 sa-m	13 ni	gu-	<u>53</u> lin	_2 g	2
3 6 Sirep . 6	i kang t Ż	<u>ż</u> på- īżi	<u>i</u> i lå v i ii	i wa- nå <u>6 iż</u>	<u>i ż i</u> - rå 3	<u> </u>	Sa- \overline{a}	33 ^{lå-} y 2163	2 ² ² ² ² ¹ ⁶	$2 \\ sa-m \\ 1 2$	$1 3$ ni $\frac{1}{2 12}$	gu- 1 2	$\frac{5 3}{1 2}$	2 g .261	2
3 6 Sirep . 6 3	i kang b 2 3	<u>2</u> ^{bå-} ī2i •	<u>i</u> i lå v i i i i i i i i i i i i i i i i i i i	i wa- nå 6 iż 3	<u>i ż i</u> - rå 3 3	<u>6</u> <u>121</u> 5	Sa- c i ż 6	33 lå-y 2163 3	2 ² ² ² ¹ ⁶ ⁵	2 sa-m $\frac{1}{1}$ 2 3	$1 3$ ni $2 \overline{12}$ 2	gu- 1 2	$ \frac{5 3}{lin} \frac{1 2}{1 2} $	2 g .261 2	2 2 6
3 6 Sirep $\overline{}$	i kang b ż 3	<u>2</u> Då- <u>12</u> 1	<u>i</u> i lå v i i i	i wa- nå <u>6 iż</u> 3	<u>i 2 i</u> - rå 3 3	<u> </u>	Sa- c <u> i</u> <u> 2</u> 6	33 lå-y 2163 3	$ \begin{array}{r} 2 \\ 7a & wus \\ \hline 2 & \overline{16} \\ 5 \\ \end{array} $	2 sa-m $1 2$ 3	$1 3$ ni $2 \overline{12}$ 2	gu- 1 2 •	$\frac{5 3}{1 2}$	2 g .261 2	2 2 6
3 6 Sirep . 6 3 3 5	i kang b ż 3	2 ^{3å-} 121	$\frac{\dot{3}}{\dot{1}}$ $\dot{1}$	i wa- nå 6 iż 3	<u>i 2 i</u> - rå 3 3	6 <u>i</u> 2i 5 <u>2</u> 1	Sa- c <u> i</u> <u> ż</u> 6	33 lå-y 2163 3 3	2 vå wus 2 16 5 2 2	2 sa-m $1 2$ 3	$1 3$ ni $2 \overline{12}$ 2 $1 3$	gu- 1 2 •	$\frac{5 3}{1 2}$ 1 2	2 g .261 2	2 2 6.
3 6 Sirep - 6 3 3 5 Nadya	i kang b ż 3 n a-	2 nå- 121 6 ri	<u>i</u> i i i i 5 3 Sudar-	i wa- nå <u>6 12</u> 3 <u>3 5</u> så-	<u>i 2</u> i - rå 3 3	<u>6</u> <u>121</u> 5 <u>2 1</u> nå	Sa- c i ż 6	3 3 då- y 2163 3 3 Wus da-	2 *å wus 2 16 5 2 2 ngu 1	2 sa-m 12 3 2 nggèn-	$1 3$ ni $2 \overline{12}$ 2 $1 3$ i- rå	gu- 1 2 • <u>3 1</u> gu-	$ \begin{array}{c} 5 3 \\ lin \\ \overline{1 2} \\ 1 \\ l \\ l \\ lin \end{array} $	2 g .261 2 1 (2 2 6.
3 6 Sirep - 6 3 3 5 Nadya: - 2	i kang b 2 3 n a- 2 1	2 nå- 121 6 ri 232	$\underline{\dot{3}}$ $\underline{\dot{1}}$ $\underline{\dot{1}}$ $\overline{\dot{1}}$ $\dot{1}$ $$	i wa- nå 6 12 3 3 <u>3 5</u> så- 123	<u>i ż i</u> - rå 3 3 3	$\frac{6}{121}$ 5 $\frac{2}{12}$ $\frac{1}{2}$	$Sa-c$ $\overline{i \ 2}$ 6 $\overline{1 \ 3}$	$3 3$ $\frac{3}{2163}$ 3 $3 3$ Wus da- $\overline{3 2}$	2 vå wus 2 16 5 2 2 ngu 1 2	2 sa-m $1 2$ 3 nggèn- 126	$ \begin{array}{c} 1 & 3 \\ \hline 2 & 12 \\ 2 \\ 1 & 3 \\ i- r^{a} \\ \overline{5312} \end{array} $	gu- 1 2 3 1 gu- 1 2	$ \begin{array}{c} 5 & 3 \\ & \\ 1 & 2 \\ 1 \\ & \\ 1 \\ 1 \\ 1 \\ 1 \\ 2 \\ 1 \\ 1 \\ 2 \end{array} $	$\begin{array}{c} 2\\ g\\ \hline 2\\ \hline 2\\ \hline 1\\ g\\ \hline 2\\ \hline 2\\ \hline 1\\ g\\ \hline 2\\ \hline 61\\ \hline \end{array}$	2 2 6 2

Note: The comparison begins from the second kenongan to the end of the piece. The first kenongan is a restatement of the last kenongan. Melody above the text is måcåpat Kinanthi Sastrådiwongsa; melody below the text is rebab and balungan.

The amalgamation of the interaction and experimentation of vocal and instrumental music described above eventually reaches its peak in the form of the present-day grander gamelan ensemble with its repertoire of hundreds of gendhing. This is to say that the origin of larger gamelan ensembles and gamelan pieces can be traced only from heterogenous and syncretic musical elements. Despite of the fact that today's grander gamelan ensemble consists predominantly of percussion instruments, vocal music is an important element in gamelan repertoire. Landmarking the importance of vocal idiom was the presence of the rebab, a vocally based, two-string fiddle of Middle Eastern origin, which became the most important melodic leaders of the ensemble.

The importance of the vocal element continued even when the grander ensemble was established. The creation in the nineteenth century of *gendhing gérongan* is a case in point. The melodic identity of pieces in this genre lies in the metric unison choral singing of male chorus, the *gérong*.

The style of this genre might have been inspired by a Javanized Islamic *terbangan* ensemble, an ensemble consisting of unison choral singing accompanied chiefly by frame drums (*terbang*) (Sumarsam 1995: 95-100). Furthermore, two factors are important reasons for the development of gendhing gérongan: the continuing interest of recomposing unaccompanied måcåpat song into gamelan pieces and the urge to incorporate literary texts in gamelan pieces. The vigorous growth in written and oral literature in nineteenth-century Java has influenced this development (Ibid).

The importance of vocal melody is clearly stated in *Sendhon Langen Swårå*, written during the reign of Mangkunegara IV (1853-81). The melodies of each of the nine pieces described in this manuscript are said to be based on sung poetry (ibid. 1). Other evidence offers similar justification for gendhing gérongan based on the unaccompanied måcåpat song and *gendhing panembråmå* (Sumarsam 1995: 95-99; see below for further discussion of gendhing gérongan). The panembråmå pieces were composed to commemorate important events in the Central Javanese court of Surakarta, as described in the texts used by the singers.

III.b Performance Technique and Melodic Interpretation, Garap

"*Tegesing gamelan nyekeli / Gendhing muni tinabuh kelawan tangan*" [The meaning of gamelan is to handle. / The sound of gendhing is produced by hands.] (*Serat Tjențini* 1912-15: 204)

The passage above gives us a particular perspective on the meaning of the word gamelan: "gamelan" refers to the process of performing a gendhing. That is, gamelan instruments are the means for musicians to handle, render, or treat a gendhing in performance. Contemporary musicians call this process *garap* ("working" to produce something). It is the way in which musicians *creatively* utilize performance techniques in playing a gendhing. Interaction is

fundamental in garap. Therefore, the core competence of the musicians must include "knowledge of interactive networks, systems, and structures" (Brinner 1995: 208).

In the widest sense, the character of gendhing guides garap; it directs musician to create melodies on their instruments accordingly. On one level, the character of a gendhing is defined by its pathet and the length of its formal structure (The longer the structure of a gendhing, the more solemn is its character.) On another level, each gendhing embodies its own individual identity and character.

Garap in colotomic instruments

With different degrees of freedom and limitation, all instruments practice garap. For colotomic instruments, their garap lie in the right timing and the style of playing, as they are guided by the gongan structure of the gendhing. In large and medium size pieces (gendhing ageng and tengahan), in approaching gong, the ensemble slows down, towards a delayed gong stroke followed by the strokes of the other instruments (In the longest gendhing structures, such as gendhing kethuk arang, this practice is also found with kenong). The practice of delaying the strokes of kenong and kempul is also found in the playing of pieces in shorter gongan structures. In transitional phrases and in the playing of gendhing in *iråmå tanggung* (see below), however, the kenong and gong are played without delay.

Another aspect of garap for kenong and kempul is guided by the pathet and melodic register of the gendhing. Particularly gendhing in sléndro sångå, when a phrase ends on pitch 1, kenong or kempul play pitch 5, in order to strengthen the feeling of pathet. But if a kenong or kempul phrase end on pitch 1 (high 1), they play the same tone, reinforcing the melodic direction of the piece. These practices also apply to pélog pieces in pathet lima and nem.

Group garap, balungan

It is worth remembering here that the widest melodic range of gendhing encompasses two and onehalf octaves. But most instruments in the gamelan, except rebab and gambang, have narrower ranges than the full gamut of the melodic register of gendhing. It is the effect of these range limitations in rendering the proper melodic motions of a gendhing and the performance idiom of individual instruments in which the concept of garap lies. Instruments entrusted to play balungan are a group of one-octave saron. Since these instruments must play a unison melody, the garap happens in the process of conceiving it. Musicians from different groups or different regions (e.g. Surakarta and Yogyakarta) often play different passages of balungan melodies for the same gendhing. An individual's or group's aesthetic preference causes this difference.

In some cases, the limitation of the saron's range has a certain effect on considering the construction of balungan melody: the composing of a balungan melody which follows closely to the proper melodic register of the piece and the construction of balungan based on the smoothing out of a melodic passage whose motion is constrained by the one-octave saron. The former produces a disjunctive saron melody, the second, a conjunct saron melody.





III.c Conceptual Melodic Leader and Melodic Identity, Rebab

The above discussion is viewing garap in the widest sense of the concept. The most common narrower sense of garap is the musician's interpretation of melodies on the elaborating instruments. First, a comment on the term "elaborating" (a classificatory term for a group of instruments), is in order. The term is said to be associated with a Javanese term "panerusan" or filling in (Kunst 1973: 247), a term that is rarely used by Javanese musicians. The term "elaborating", and others like it (such as "paraphrasing"), is used in the context of a particular view of gamelan melodic structure. This view emphasizes the important role of balungan as the "theme" or "principal melody" of a gendhing; it is used as a basis for elaboration by instruments such as rebab, gendèr, gambang, and bonang; hence, the "elaborating instruments." There is some truth to this idea. The melody of some pieces or passages of a piece may derive from balungan. Balungan is also an important melodic reference for the ensemble. But balungan is not necessarily the entire basis from which other instrumental melodies are derived. Therefore, the use of the term "elaborating instrument" here should be understood to mean instruments that play elaborate melodies in their own right; it does not necessarily refer to the process of elaborating the balungan.

Leading instruments in the ensemble, especially rebab, gendèr, and bonang barung, are commonly used to illustrate garap. Other elaborating instruments are rarely used to discuss garap, because of their supporting roles and their limited melodic vocabulary.

Musicians consider rebab as *pamurbå lagu*, that which has authority over melody. Its role as a melodic leader includes determining which gendhing is to be played by the ensemble by playing the *bukå* (melodic introduction) and cueing the ensemble for some types of transitions. Significantly, the importance of the rebab in the ensemble relates to its melodic character and melodic representation: a vocally inspired melodic line with a complete and proper melodic register.

It is true that rebab does not provide melodic guidance in term of note-per-note, "real time" (Perlman 1994: 140). But musicians insist that rebab is constantly giving clues to the course of the gendhing (ibid. 144). Essentially, the rebab's authority over melody should be understood on a conceptual level. The vocally inspired rebab melody is closely associated with the identity and the proper melodic range of a gendhing, the manifestation of which is to be seen as emanating from within (Brinner 1995: 216). If the rebab cannot be heard clearly, or, if it is absent from the ensemble, the voice-like melody will always be present in the minds of the musicians, as one of the important references. Even in *gendhing bonang* (a group of pieces whose presentation does not include the participation of soft-sounding instruments and singing), musicians also conceptualize its melodic flow as voice-like melody (Sumarsam 1995: 216-118).

Like other instruments, the melodic treatment of rebab is based on four considerations: the player's knowledge of repertoire, idioms, transformational procedure, and pathet frameworks and procedures (Brinner 1995: 64). The rebab player is expected to have a great knowledge of repertoire (hence, a trustworthy memory), since the ensemble will rely on him if other players' memory fails them (Perlman 1994: 143). In this context, the rebab player must have a thorough knowledge of hundreds of pieces and their characters. The character of a piece will guide the rebab player for creating appropriate melodic interpretation. For example, the rebab player must know when to play *barang miring* for certain passages of a gendhing. Commonly evoking a sad feeling, barang miring is a vocally oriented tuning whose creation is based on lowering two of the five notes in sléndro, resulting in a pélog-like tuning to be performed in sléndro gamelan.

There are two other elements associated with the melodic idioms of rebab, related directly to technical application: bowing technique and finger positions. In his manual on how to play rebab Djumadi (1972) lists ten bowing techniques (a few are given below). These different bowing techniques and their articulations will help to convey the melodic character of a gendhing.

Figure 23 Three different kinds of bowing techniques



	kosok wangsul		mbalung
6.	$\begin{array}{c c} \hline \\ \hline $	iż ż	$\overline{\overline{121}}$ 6
	sendhal Pancing		
. 12	$\begin{array}{c c} & \\ \hline 1 & 2 \\ \hline 1 & 2 \\ \hline \end{array} \begin{array}{c} \hline 1 & 2 \\ \hline \hline 1 & 2 \\ \hline \end{array} \begin{array}{c} \hline \hline 1 & 2 \\ \hline \hline \hline 0 & 1 \\ \hline \end{array} \begin{array}{c} \hline \hline 0 & 1 \\ \hline \hline 0 & 1 \\ \hline \end{array} \begin{array}{c} \hline \hline 0 & 1 \\ \hline \hline 0 & 1 \\ \hline \end{array} \begin{array}{c} \hline 0 & 1 \\ \hline 0 & 1 \\ \hline \end{array} \begin{array}{c} \hline 0 & 1 \\ \hline 0 & 1 \\ \hline \end{array} \begin{array}{c} \hline 0 & 1 \\ \hline 0 & 1 \\ \hline \end{array} \begin{array}{c} \hline 0 & 1 \\ \hline 0 & 1 \\ \hline \end{array} \begin{array}{c} \hline 0 & 1 \\ \hline 0 & 1 \\ \hline \end{array} \begin{array}{c} \hline 0 & 1 \\ \hline 0 & 1 \\ \hline \end{array} \begin{array}{c} \hline 0 & 1 \\ \hline 0 & 1 \\ \hline \end{array} \begin{array}{c} \hline 0 & 1 \\ \hline 0 & 1 \\ \hline \end{array} \begin{array}{c} \hline 0 & 1 \\ \hline 0 & 1 \\ \hline \end{array} \begin{array}{c} 0 & 1 \\ \hline \end{array} \end{array}$		
	mbalung nduduk		
2 3	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\frac{1}{1 \cdot 6} = \frac{1}{2}$	L é

Finger positions are set forth so that the pitches produced by fingers can be accomplished with ease, i.e., the comfortable way the player's fingers spread in stopping the strings (Martopangrawit 1984: 141). Significantly, the finger position is determined in the framework of pathet. In sléndro, the rebab strings are tuned to pitch 6 and 2. The finger positions for pathet sångå and manyurå differs in the two positions of medium and higher octaves, and the finger positions of pathet nem are a mixed of sångå and manyurå positions.





Key: a, index finger; b, middle finger; c, ring finger; d, little finger

In pélog pathet lima, the strings are tuned to pitch 1 and 5. In pathet nem and barang, the strings are tuned to 6 and 2.



pa	thet	lim	a									pat	het	nem	l								
1 '	5	5																					
2	ė	6a										<u>2</u>	6										
3												3.											
4	1	1b	Ι	1								4	1	1 a									
	2	2c		2a		2						2		2b	Ι	2 a		2					
	3			3d		3a						3		3c				3a					
	4			4b	Π			4a				4				4b	Π			4a			
	5			5c		5b	III	5b		5		5		5d		5c		5b	Ш	5b		5	
	6			6d		6c		6c	IV	6 a		6		6		6d		6c		6c	IV	6a	
	 i					ia		ia		1 h	N	i						ia		ia		ih	v
						10		10		10	v	T						10		10		10	v
	ż					ż		ż		żc		ż						ż		ż		żc	
	١ ₃									зd		ż										Зd	

pathet barang

2 6 3 7 7a 5 2b I 2--2 3c 3 3a 4 4d 5 5b II 5a 6 6c 6b 6--7 7d 7c III 7a żd ż żb IV ż ż зċ ż 4d

It should be mentioned that the importance of the rebab's role in playing the underlying melody of a gendhing does not always hold true for all genres of compositions. The case in point is gendhing gérongan. As previously mentioned, the melodic identity in these gendhing is not a rebab-like melody, but rather a gérongan melody.

In performing gendhing gérongan, the rebab does not imitate the gérongan, rather, it plays its own melodic idioms. Its function to guide proper melodic direction remains the same, however. In fact, the rebab is crucial in providing melodic bridges between the gérongan lines.



•		6	•	•	ż	ż	ż	î	ż	ż	6	5	2	3	5	3
•	6	īż.	ż.	ż ż .ż	<u>.</u> i	6	īżi	i iż	6 i	że	5 3 50	555 35	5 3 5	 66	<u>i6</u> 5	3
•		•	•	•	. ż Kemb	3 ang	īżż ken-	żi cur	• 6 Ka	iż.	. <u>3</u> 126 yan	5 ang-	. 6 gung	6 İ.	<u>-</u> 26 16 na-	53 tur
		•	3	2	5	3	2	î	•	3	•	2	•	1	•	6
•	6	ī ż	6	\overline{i} $\overline{\overline{2}\overline{1}}\overline{2}$	<u>i6</u> 3	2	11 2	1	•	3 3	23	2 2 1	.2 1 2	2 1	<u>.</u> 62	 16
								•								
•		•	6 Sè-	iżż dhet	3 12 kanş	63 g sa-	3 53 ri-	21 rå	•	•	3 Gan-	52 dhes	353 ing	3 wi-	121 rå-	. 6 gå
		2	•	3	•	2	•	î		3		<u> </u>		1	•	6
3	56	56	ī6	_ 53	2 3	2	.11 2	1	•	133	$-\frac{1}{23}$	2 2 1	2 1 2	2 1	<u>.</u> 62	16
•		•	3 Kè-	563 wes	• 5 yèn 1	6 1gen-	3 53 - di-	 21 kå	•	•		.52 nge-	35 nga-	- 3 3 nyut		1 6 wå

Figure 26 Puspå Warnå (balungan, rebab, gérongan)

Key: indicates how the rebab directs the melody of the gérongan by anticipating the tone or tones which will be approached.

It is clear that gendhing gérongan has made the melodic directions of gendhing clearer, strengthening the melodic identity of a gendhing. In the development of gamelan practice, this genre became quite popular, so much so that new gérongan melodies were composed for non-gérongan gendhing (Sumarsam 1995: 99).

There are other genres of gendhing in which the vocal part is featured, including *jineman* and *palaran*. In both genres, the melodic feature is the solo female singing of the sindhèn, while the instruments accompany it.

III.d Melodic Fragmentation, Gendèr

The vocal-like, continuous, or smoothly flowing quality of the rebab melody characterizes the underlying melody of a gendhing. Therefore, rebab melody is less susceptible to fragmentation. In modern learning of this instrument, the teacher has to write out the whole rebab part of a gendhing. In describing the rebab melody, the terms cèngkok (melodic pattern) and wilet (melodic ornamentation) are often used interchangeably. This is not the case with other elaborating instruments. For example, the fragmentation of melody into melodic patterns is necessary in theorizing and learning the gendèr. This melodic fragmentation came about because the gendèr with the limitation of its range, must coordinate its melodies with the proper melodic direction of a gendhing (Although the gendèr range encompasses more than two octaves, because it is played with two mallets, its range is reduced to one and one-half octaves.) Like gatra in balungan, gendèr playing evolved and a group of individual gendèr patterns emerged.

The range limitation of gendèr brings about two types of gendèr patterns: patterns whose melodic direction are in congruence or divergence with the proper melodic motion of a gendhing. A congruent gendèr pattern is created when it is possible for the gendèr range to express the proper melodic motion of a passage. When gendèr range cannot attain this, divergent gendèr patterns (patterns which move in the opposite direction from the proper melodic motion) become inevitable. In addition, the gendèr will also have to find *rambatan* (creeping), a smooth way to link its patterns when situation demands.

The view of the importance of gåtrå of balungan and gendèr patterns in creating or performing gendhing has influenced the development of gamelan theory. Classifying gendèr patterns and naming them individually has become a trend in learning gendèr. Apparently, the original idea of naming patterns was to allow a senior musician to casually call out patterns by name to inexperienced gendèr players. Not all gendèr patterns have names, however. Most of the names refer only to those patterns which have evocative meanings relating to exciting vocal melodies (e.g., ayu kuning, jarit kawung).

Figure 27 Gendèr pattern "ayu kuning," sléndro manyurå



To certain extents, the classification of patterns can help one to learn to play the instrument. However, it may also create an impression that the musical system of gamelan is based on the manipulation of inflexible melodic patterns. Patterns are the means to express the melody of a gendhing, but they are always in constant interplay with and susceptible to the vocally inspired, proper melodic direction of the piece.

Another element pertinent to conveying the mood of a gendhing is the style of gendèr playing. Basically, there are two styles: *lombå* (single or regular) and *rangkep* (double) style. The speed of the lombå style is around 104-176 on the Maelzel Metronome, and the rangkep style, 208-320. The feeling of a gendhing and the effect of iråmå (see below) guide the player in his decision to render his gendèr playing in one style or another.

Figure 28 Comparison of a gendèr pattern in lombå and rangkep style, sléndro sångå



lomba	3	5	3	•	3	5	3	2	5	.3	5	2	5	3	5	6
	•	•	• 5	6	1	6	1	•	• 5	3	2	•	5	16	55	6
rangkep	.3	.5.	.3.	2.3	3.	5.	3.	2.	5.	3.	5.	i.	5.	6.	i.	6
	1.	16	561	.1	.1	65	661		. 1	61	. 1		. 2	216	5.6	5.

III.e Mediating and Guiding, Bonang

The idiomatic character and the playing technique of an instrument is the basis for determining its function in the ensemble. For example, because of its limited range, the gendèr can only indirectly function as a guide to the proper melodic direction of a gendhing; rather, gendèr serves more to create a fullness in the sonority of the ensemble. Bonang barung, another melodic leader of the ensemble (second in importance after the rebab), directly leads the melody of the ensemble. Unlike rebab, the bonang guides the melody not on a conceptual level, but in "real-time" performance (Perlman 1994: 148). In the playing technique called *pipilan* (to pick off single notes one at a time), the bonang guides the saron players in which tones to play by anticipating the balungan two tones at a time (see figure 29 below). Another bonang technique is *gembyangan* (octave playing); it is played to express sustaining melodic passages (*gantungan*). Bonang also has certain ways to give a clue for the melodic character or the proper melodic direction of a gendhing. For example, the gembyangan can be used to emphasize the arrival of a goal tone or to indicate the higher register of the melody unattainable on the bonang (The range of the bonang is less than two octaves; therefore, the bonang will never be capable of conveying the whole range of melodic motion, especially the highest octave of melodic passages).





	gei	nbya	ang			pip	oilan					gen	nbyan	g			
Bonang	<u>3</u> . 3	• <u>3</u> •	• <u>3</u> •3	53	53.63	36	36.5	650	65.3	53!	53.63	i6:	i6.2:	i66 <u>6</u> . 6	<u>6</u> . 6	• <u>6</u> •	• <u>6</u> ••• 6
Balungan		•		3	5	6	3	5	6	3	5	6	i	ż	ż	i	6

Note: The first gembyang is to convey the sustaining melodic passage; the second gembyang, to emphasize the arrival of a goal tone and to convey the higher register unattainable on the bonang. Also notice the anticipatory nature of pipilan to guide the balungan tones.

Besides pipilan, there is another bonang playing technique called *imbal* or *imbal-imbalan*. In this technique, bonang barung and bonang panerus play interlocking patterns with melodic ornamentation (sekaran) usually at the end of the phrase, creating a playful melody. Thus imbal bonang is played in joyful pieces (or a section of them) according to the iråmå and the drumming treatment. Unlike the pipilan technique, the imbal bonang does not provide melodic guidance to the ensemble.





III.f Playing Time and Structure, Iråmå

It is clear from the above discussion that the interconnection and interaction of different instrumental and vocal parts are fundamental in gamelan playing. Another important interactive aspect of gamelan, involving the manipulation of time and structure, is contained in iråmå. In the narrower sense, iråmå is tempo, i.e., the rate of temporal flow: seseg (fast), sedheng (moderate) and tamban (slow). In a wider sense, iråmå represents the process of expansion or contraction of formal structure which is accompanied by the change in density levels of the elaborating instruments. This means that the change of iråmå requires the doubling or halving of the beats of the elaborating instruments in ratio to the basic beat of a gendhing (often carried out by balungan).

There are four levels of iråmå: tanggung (I), dadi (II), wilet (III), and rangkep (IV). Believed to be a recent development, iråmå rangkep has its own characteristic. There is also another iråmå called *lancar*. It is played only in pieces with the shortest gongan structure, *lancaran*.

Figure 31 below illustrates the gradation of density levels of elaborating instruments. Instruments playing the highest density levels are gambang, bonang panerus, gendèr panerus, and siter. Bonang barung and gendèr barung play the higher level. Providing the basic pulses, rebab and saron play the medium level.

Ι	С	000000000000 0 0 0 0 0 0 5 6 5	00000 0 0 0 5 3	highest density level higher medium	MM 52-120
II	00000000 0 0 0 0 5	00000000000 0 0 0 0 0 0 6	000000000000 0 0 0 0 0 0 5	00 0 3	MM 30-54
III			000000000000 0000000000000000000000000		000000000 0 0 0 0 0 3 MM 12-18

Figure 31 Three level of iråmå, using a melodic passage of balungan ladrang *Ginonjing* to represent the basic pulses.

The transition from one irama to another is carried out by a gradual slowing down or speeding up of tempo, which is then followed by the increase or decrease of the density levels of the elaborating instruments. When the iråmå of a piece is changed, the pulse and the melody of balungan may or may not change, depending on the iråmå in which a piece resides (see below),

The instrument whose function is to guide and set up iråmå is the drum (kendhang). There are three drumming styles, each corresponding generically to the mood of a gendhing (or a section of it) or to the character of a dance or the mood of a theatrical performance. These drumming styles consist of rhythmic patterns, ranging from the repetition of a simple pattern with an underlying regular beat (kendhang satunggal and kendhang kalih) to elaborate patterns with underlying regular but elusive beats (kendhang ciblon and wayangan) (see figure 32). In a medley

presentation, two or more kendhang styles may be used in different sections of the performance of a gendhing.

Actually, the change of iråmå has wider musical implication than the change of density levels alone. Most significantly, it allows a single piece to assume different lengths, different degrees of instrumental or vocal embellishment, different playing styles of some instruments, and, therefore, different moods. In other words, the change of iråmå (as guided by the change of drumming style) affects the melodic content of the piece, the playing technique, and the melodic embelishment of instrumental or vocal parts. For example, in playing the first section of ladrang Pangkur, kendhang plays a less elaborate configurative rhythmic pattern in the kendhang kalih style; gendèr plays in the lomba technique; and bonang plays pipilan. When the drum cues the ensemble to change to irama wilet (by guiding the ensemble to slow down with the livelier kendhang ciblon style), the gendèr will change its playing from lomba to rangkep style; and the bonang playing changes from pipilan to imbal technique

Figure 32 Comparison of a passage from Pangkur played in irama dadi and wilet Iråmå dadi (gendèr lombå, bonang pipilan, kendhang kalih)

kendhang kalih	<u>, , , , , , , , , , , , , , , , , , , </u>	P b P	j P Þ	J¥J¥ P b P	b K =	<u> </u>	j P P	6 P	ц
rh. gendèr lh.	ᢤᡟ᠋ᢩ᠄ ᢟᢧᠶᡗ	,,,,, Îr • •	IJ↓ ÎÊ PP	<mark>┟╻┙╻╸</mark>	╞╞╞╞╞ ┎═╴┇╴┇	l l Trif	L, , , , Î î î î î	↓ ↓ ₽ ₽	9
rebab	ş	ļį	<u></u>		J	ļ	•	╻╻	Ŧ
bonang	å ₹ F F	1 – f	12	n i	<u>}</u>				
balungan	<u></u>		U	•	Ŧ	U	÷		

balungan				2				1				6				5
rebab		2		2		1	2	1				2		1	- 6	5
gendèr	5	•	35	6	•	5	6	5	3	2	3	6	•	5	6	5
	•	1	2	•	1	61	1	1	•	65	3	2	•	3	•	5
bonang	2	1	2	•	•	1	2	•	6	5	6	•	•	5	6	•
kendhang		p		0	β	ρ		β		k	0	k	•	k	0	k





- b = dhe t = tak
- l = thung l = lung
- d = dang L = lang
- $\bullet = dhet \quad \circ = tong$
- k = ket . = rest

The fact that a single piece can be played in different irama implies a fluidity in the melodic identity of the piece. It should be pointed out, however, that the original melodic identity of most pieces resides in iråmå dadi and iråmå wilet (the latter is true only for some gendhing gérongan). This is to say that other iråmå have particular performative functions.

In most cases, iråmå tanggung is a temporary iråmå, used for particular purposes: (1) making transition from one section to another, or, from one piece to another; (2) performing a section of dance which requires lively drumming in a repeated short cyclic structure; and (3) performing a piece or a section of it (such as a sesegan section in a gendhing bonang) to be played in instrumental, loud style playing, as the conclusion of the piece.

The inggah section for many pieces can also be played in iråmå wilet. The original melodies of the inggah also reside in the iråmå dadi. In fact, many inggah melodies derive from the corresponding mérong melodies. The need to accompany animated dance movements, whose drumming requires a lively style called ciblon, have originally been the reason for playing inggah in iråmå wilet. As has been mentioned earlier, the rhythmic patterns of this drumming are directly related to dance movements.

Playing inggah in iråmå wilet with ciblon drumming became a common practice in *klenèngan* (gamelan performances for listening), although no dancing is present. It is a way to create a livelier mood for the performance. In expanding their melodies, musicians of the elaborating instruments focus more on the treatment of individual patterns. In doing so, a single gatra pattern becomes two patterns. To create a lively mood, musicians will change their technique and melodic ornamentation accordingly. For example, in a piece played in iråmå wilet with ciblon drumming style, gendèr will play rangkep style and bonang will play imbal.

Believed to be the most recent invention, iråmå rangkep gives rise to the liveliest melodies and moods. This iråmå does not link itself only to iråmå wilet; it also links to iråmå dadi. Iråmå rangkep does not transform a single pattern to become two patterns, but to double the density level of the existing melodic patterns by repeating sections of a pattern and adding more whimsical melodic ornamentation. The drum also plays animated rhythmic patterns by repeating elaborate patterns associated with dance movements, playing them in tempo faster than the tempo in iråmå wilet. Other practices which contribute to the lively moods of the performance of iråmå wilet include *andhegan* (a stop in the middle of the piece and resuming again after the singer sings an interlude), the highlighting of certain evocative melodies or rhythms by elaborating instruments and singers, an occasional jocular pattern created by bonang, and playful *senggakan* (stylized cries) by male singers while performing interlocking claps.

GONGAN		
STRUCTURE	IRÅMÅ	
Gendhing		
Mérong	tanggung ┥ 🔤 dadi	
Inggah	tanggung 🔶 dadi —> wilet rangkep	
Ladrang	tanggung 🔶 dadi 🔶 wilet rangkep	
Ketawang	tanggung 🔶 dadi rangkep	
Lancaran	lancar 🛶 🛶 tanggung 🔶 dadi	

Figure 34 The application of different iråmå to gendhing of different gongan structures.

Note: Each gendhing has its own limitations as to how different iråmå can be applied to it. The original melody of a piece resides in one of the iråmå printed in bold.

Figure 35 The effect of iråmå and drumming style on the gendèr and bonang playing technique

IRÅMÅ	PERFORMANCE STYLE			
	KENDHANG	GENDÈR	BONANG	
tanggung	kalih or satunggal	lombå	pipilan	
	ciblon	. rangkep	imbal	
dadi	kalih or satunggal	lomba	pipilan	
	ciblon	rangkep	imbal	
wilet	kalih or satunggal	lomba	pipilan	
	ciblon	rangkep	imbal	
rangkep	ciblon	. rangkep	imbal	

In the present study of compositional processes, certain features emerge. The most important feature is the heterogenous and syncretic nature of the development of gamelan, consisting of a continuous interaction and juxtaposition of different types of musical idioms, both instrumental and vocal. Significantly, the vocal element has a strong influence in the development of gamelan compositions. The highly hybridized musical forms present in today's grander gamelan with its repertoire of hundreds of gendhing epitomize the peak of the evolutionary process of the gamelan. In essence, gamelan composition embodies a complex relationship of different strands of musical idioms. Framed by the colotomic structure, these idiomatic strands are interacting with each other in an elaborate musical language that cannot be encapsulated within a single musical grammar.

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