

Discourse on Pathet of Javanese Gamelan

The Period of Socio-cultural Transition

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Preface

In October 2021 the Institute for Ethnomusicology at Kunst Universität Graz organized a symposium with the theme “Rethinking Musical Mode.” The abstract of the symposium points to the definition of mode as “either a ‘particularized scale’ or a ‘generalized tune’ depending on the specific musical and cultural context,” put forward by one of the towering figures in ethnomusicology and musicology, Harold Powers, in the 1980 edition of the *New Grove Dictionary of Music and Musicians*. The aim of the symposium was “to recenter the performer, their performance practices, and their aesthetic preferences in our analyses and our reassessment of the word ‘mode’ in its many musical meanings,” which the organizers felt was lacking in Powers’ definition. I was invited to be one of the keynote speakers. (Thanks to Professor Sarah Weiss for inviting me). I must acknowledge that my presentation does not directly relate to Powers’ works; but, one of the topics of my presentation concerns the performer-cum-theorist’s perspective which Powers often refers to, in addition to addressing his intensive reference to gamelan theory in general (for example, see Powers 190).

I should also mention that Powers had a special relationship with Wesleyan’s gamelan program. In the late 1970s, he invited the Wesleyan gamelan ensemble to perform at Princeton University. Before the performance, the 12-page program notes he wrote were given to the audience as background material for his introductory lecture on gamelan. I would say, it is rare to encounter 12-page program notes at any concert. Around the time he published his entry for “Mode” in the *New Grove Dictionary of Music and Musicians*, the Wesleyan Music Department invited him to teach a graduate seminar on mode. Commuting from New Jersey (he was a Professor of Music at Princeton University), he taught his seminar on Monday; but he traveled to Middletown on Sundays, to take lessons on bonang from me and to join our gamelan rehearsals. He played bonang and sang *gérong* for our end-of-semester concert. He also joined our gamelan ensemble to perform a concert at the Metropolitan Museum of Art in New York. It was a privilege for me to have had this close relationship with one of the towering figures in musicology/ethnomusicology.

My presentation at the Graz symposium dealt with an example of discourses of pathet in the mid- to late-20th century, by which time Western modes of thought had influenced Javanese intellectual modes of thought. Pathet in Javanese gamelan has been intensively studied by both Western and Indonesian theorists (see Hood 1977 [1954], Hastanto 1985). Like any study of music theory, the study of pathet develops in response to certain conditions of socio-musical life at a

given period in history and the interest of certain individuals whose familiarity with music varies—from casual gamelan enthusiasts to professional musicians; from professional scholars of specific disciplines to self-taught scholars; or various combinations of the aforementioned.

Focusing on the study of *pathet* by two contrasting authors, Poerbatjaraka and Martopangrawit (intimately known as Pak Marto), I will show the ways scholars define *pathet* in terms of its tonal constraint (tonal hierarchies and relationships) and show their uniqueness and creativity in defining *pathet*—spanning from linguistic departures in interpreting the naming of *pathet* to viewing *pathet* from the performance practice of certain instruments.

Poerbatjaraka

Let me begin with a brief biography of Poerbatjaraka (see Pigeaud 1966). Growing up during the colonial and post-colonial periods as the son of a middle-high ranking court official of the Kasunanan court of Surakarta, Poerbatjaraka had the opportunity to receive an education from the Dutch school in Java and in the Netherlands. He received his doctorate degree in literature at Leiden University, specializing in the Old Javanese language. Returning to Java, he became a professor at a number of universities in Indonesia, spending much of his teaching and research time at the Universitas Gajah Mada in Yogyakarta.

Poerbatjaraka's study of *pathet* was inspired by a lecture on gamelan by a Professor of Engineering at Gadjah Mada University, Poerbadiningrat, whose presentation included a list of the definitions of *pathet*. Given his linguistics background, Poerbatjaraka felt unsatisfied with the explanations given in Poerbadiningrat's ten definitions (see in the footnote).⁶ In this context, he

⁶ Here is the list of 10 definitions of *pathet* Poerbatjaraka refers to:

1. R.T. Djodipoero (1921): *pathet* is the place of a *gendhing*.
2. Tuan Djakoeb and Wignyoemeksa (1913): the purpose of *pathet* is to give place to a *gendhing*.
3. Tuan Sperjapoetra: *pathet* is a rhythmic relationship between the tessitura (*tingginya*) of a melody (*lagu*) and the vibration in the air at certain times of day or night.
4. R.M. Sarwaka: the difference between one *pathet* and another is based on certain differences in *cengkok*.
5. Tuan Soelardi (1918): *pathet* is *pangrambyangan* [playing of the *grambyangan*] of an instrument according to certain rules from which the characteristics of the *gendhing* to be played are determined.
6. Tuan Sastrasoewignya (1931-32): *pathet* is the singing of the *dhalang* during *wayang*, accompanied by *rebab*, *gendèr*, *gambang*, *suling*, *kendhang*, and occasionally *gong*.
7. Tuan Jaap Kunst: we approach the meaning of *pathet* when we determine the predominant pitches of a *gendhing*.
8. R. Kodrat determines *pathet* from *kenong*. The first *kenong* tone constitutes the starting point (*titik pangkal*).
9. Ki Hadjar Dewantara (*pathet* 1936) gives the following diagram:

remembered passages from the 15th-century literary work *Panji Semirang* mentioning the term “patut.”

Raden Inu played rebab, Pangeran Anom the kromong, and Raden Brajadenta beat the drum, Jurudheh played saron, Punta the Salukat, Kartala the kangsi, and Semar the calapita. Cemuris played the gong. And Raden Inu played the rebab Asmara-ing-pegulingan. And it (*the rebab*) is tuned to (*dipatut*) with the kromong by Pangeran Anom. They were in tune indeed. (*Satala sekali bunyinya*) (Poerbatjaraka 1987[1957], 265-66. Translated by Stanley Hoffman)

I highlight the phrase “(*the rebab*) is tuned to (*dipatut*) with the kromong” in relation to Poerbatjaraka’s remarks on how the word patut should be pronounced, as it relates to the meaning of pathet in gamelan. After consulting another piece of literature, the 19th-century *Serat Tjenti*, he was convinced that the Javanese would not pronounce it as patut (“t” as it is pronounced with your tongue-tip touching inside upper teeth), but *pathut* or *pathet* (“th” as it is pronounced with your tongue-tip touching palate). This happened because Javanese people often spoke while chewing beetle nut. Therefore, they were not pronouncing the word patut properly; hence patut was and is now pronounced as pathet. Poerbatjaraka noted (it is true) that Balinese people would say “th” for any “t” until recent times.

pathet nem: gdlnb; pathet sanga: lnbgd; pathet manyura: nbgdl

oxxxx

oxxxx

oxxxx

10. According to the schema found in Mantle Hood’s *The Nuclear Theme as a Determinant of Patet in Javanese Music*

[1954: 8, 145], the arrangement on the keys of the saron can be illustrated as follows.

pathet nem		G1		G2	D	
	b	g	d	l	n	b

pathet sanga		G2	D		G1	
	b	g	d	l	n	b

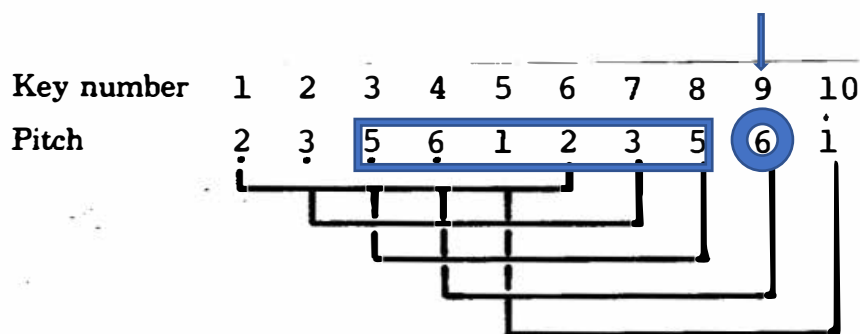
Pathet manyura		G2	D		G1	
	b	g	d	l	n	b

Poerbadiningrat 1987[1957]: 254-55. Translated by Stanley Hoffman.

Note: b, g, d, l, n -- these are abbreviation of the names of gamelan pitches: b, barang (pitch 1), g, gulu (pitch 2), d, dhâdhâ (pitch 3) l, limâ (pitch 5), and n, nem (pitch 6).

Growing up in the circle of royal family, Poerbatjaraka and his brother used to join the Surakarta court musicians to play gamelan. He remembered when he played rebab, he tuned the main string to tone Nem (6), a standard practice until recently. He speculated that Inu, in the story *Panji Semirang*, must have tuned the main rebab string in the same way he (Poerbatjaraka) did. Hence “dipatut” means that the main string of rebab is tuned to pitch Nem. Then he hypothesized the genesis of the name of one of the pathet: pathet Sângâ (Sângâ means nine).⁷ First, he proposed that the old *gendèr* has only 10 keys,⁸ from which five octaves can be established (see figure 1 below). He then speculated that the principal octave (the *ur* octave) must have been the central octave (5̣6̣1̣2̣3̣5̣). Now, since the main rebab string was tuned to pitch Nem (medium Nem), and the tone medium Nem was the ninth key of the old *gendèr*, he concluded that that is why the pathet was called pathet Sângâ, i.e., the pathet of the ninth key of the *gendèr*, which the main rebab string was tuned (fitted) to. Clever, isn’t he? As far as I know, he is the only person to explain the name of one of the pathet (Sângâ) the way he did.

Figure 1 Five octaves of the ten-keyed *gendèr*, and the rebab’s main string is tuned to the ninth-key of the the *gendèr*



What about the other pathet: pathet Nem and Manyurâ? Poerbatjaraka doesn’t have good explanation, except to say that for pathet Nem, the left string of the rebab is tuned to the sixth key

⁷ There are three pathet in sléndro gamelan: Pathet Nem, Sângâ, and Manyurâ. There has not been any good explanation why a pathet is called Nem (six), Sângâ (nine) and Manyurâ (peacock?).

⁸ This old ten-keyed sléndro *gendèr* was played especially for accompanying wayang performance. This is still true until now in Bali. And in Java, *gendèr* is the main instrument for accompanying wayang performance—the *gendèr* player does not play only on *gendhing*, but also accompanying song by the *dhalang* and *grimingan* (performing melodic passages to heighten the content of the scene).

(i.e., pitch 2) of the ten-keyed *gendèr*. For *pathet Manyurå*, he acknowledges that the meaning is even less clear.

In describing *pathet*, Poerbatjaraka also refers to other scholars' works, for example, to Jaap Kunst's work on the function of gong-tones to define *pathet*, as you can see his chart below. (He based his chart on his reading of Jaap Kunst's work.)

Figure 2

- [1.] Of 53 *gendhing* in *pathet nem*, most gong tones fall on the note *gulu* [2] (64.2 percent); 32 percent fall on *lima* [5]; and 61 percent fall on *nem* [6].
- [2.] Of 98 *gendhing* in *pathet sanga*, the gong tones of 51 percent fall on *barang* [1], and 84.7 percent fall on *lima* [5].
- [3.] Of 122 *gendhing* in *pathet manyura*, 41 percent fall on *gulu* [2], 33.6 percent on *dhadha* [3], and 59 percent on *nem* [6]

(Poerbatjaraka 1987[1957], 253. Translated by Stanley Hoffman)

Another fascinating hypothesis of Poerbatjaraka relates to the origin of *gendèr*. He suggested that *gendèr* must have derived from *Gandhara*, a region in India known as the center of art and culture in the context of Mahayana Buddhism. This Indian religious tradition was introduced to and adapted by people in Southeast Asia in the early centuries of Southeast Asian history (Ibid, 275). His linguistic perspective led him to propose that the name of the instrument *gendèr* was derived from *Gandhara*, by way of wordplay. He argued that (1) a number of words ending in the syllables *èk*, *èl*, *èt*, and *èr* originally ended in *ak*, *al*, *at*, and *ar* (e.g., *suwèk* – *suwak*; *dhèdèl* – *dhadhal*; *sèrèt* – *sarat*; *cèrèt* – *carat*); and (2) the final *a* of many Indian words has disappeared: *Singapura* – *Singapur*; *daca* – *das*. Therefore, *gendèr* must have derived from *gendara* (another spelling for *gandhara*) by way of *gendar*—which happens to be a word that means cracker—*karak gendar*, the shape of which is similar to the slab of the instrument *gendèr*. Purbatjaraka strengthens his argument by pointing out that (1) *gendara* in Javanese *wayang* refers to a land of the birthplace of Dewi Gendari (the mother of the Kurawa brothers in the *Mahabharata* story), and (2) in an Old Javanese story (*Wiratha Parwa*), the word *gandhara* means a musical instrument.

I hope readers find Poerbatjaraka's work fascinating and entertaining. His hypothesis makes sense from his linguistic point of view; but there is no way to confirm or deny its validity. More corroborating evidence is needed. In any event, his work is part of the landscape of the discourse of musical analysis which happened during the transitional period of the Javanese intellectual atmosphere, from a traditional modality to one influenced by 20th-century western intelligentsia. As a scholar specializing in Old Javanese literature, I learned a great deal from his close attention to the topic of Java-India literary encounters.

Martopangrawit

Now, I would like to turn to Bapak Martopangrawit (Pak Marto), who also lived during the transitional period. But, his intellectual foundation was shaped by his position as a professional musician.⁹ He grew up as the son and grandson of well-known court musicians, which led the way for him to become a court musician himself. Then, in the 1950s, he became a civil servant of the Republic of Indonesia, as an employee of the gamelan conservatory. Thus, his musical and intellectual development were shaped by ideological, cultural, and political transitions as Java/Indonesia changed from a traditional, feudal state to a Westernized democratic society—a change that bore the fruit of the founding of the gamelan conservatory and academy.

In the 1950s and 1960s, his work at the gamelan conservatory was not as a teacher of gamelan, but as a member of the research division, whose work was creating study material for gamelan and to engage in documentation and research with his colleagues, who were musicians and gamelan theorists. Occasionally members of the research division performed gamelan for public audiences and for special gamelan events, such as accompanying lectures given by gamelan theorists.

His position in the research division at the conservatory had prepared him for his next assignment. In 1965, the gamelan academy (ASKI) was founded. Pak Marto was appointed as a *dosen* (lecturer), teaching gamelan theory and gamelan performance. He was the only gamelan teacher who was also a gamelan theorist. From 1967 to 1977 he published seven monographs. Many of them are collections of notations (sometimes with some explanations), others are on the

⁹ Pak Marto's biography is based on my manuscript of "Learning to Play Gender," an essay which is now published in this book

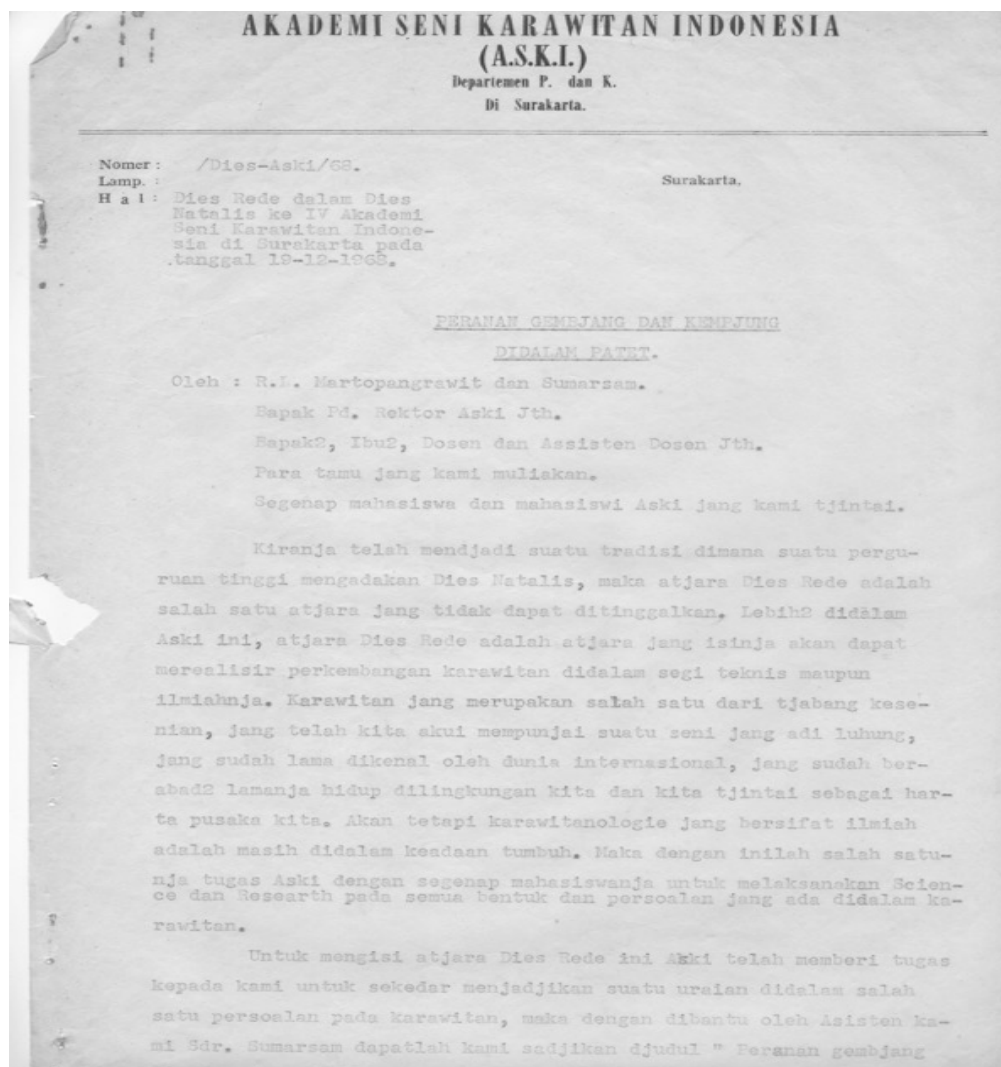
theory of gamelan.¹⁰ So, Pak Marto went through a number of transitional periods: from court musician, to member of a research division, to becoming a gamelan teacher and theorist. During his search for suitable gamelan pedagogy, I was Pak Marto's assistant.¹¹

One of the topics Pak Marto was interested in, which I considered one of the most important and original topics coming from his creative thought, was his analysis of *pathet* from the perspective of the function of *gendèr* in the ensemble. When, in 1968, ASKI asked him to deliver a commencement speech for the graduation ceremony of its first generation of students, he chose this topic for his speech. The title of his speech was “Peranan Gembyang dan Kempyung didalam Pathet” [The function of *gembyang* and *kempyung* in *pathet*]. He generously acknowledges me as his collaborator in writing his speech (see Figure 3 below). *Gembyang* means an octave interval; *kempyung* is usually defined as approximately a fifth interval—actually, it refers to any combination of two pitches in between two slabs of *gendèr*.

¹⁰ One of them, the two-volume monograph on gamelan theory, are known to many of us in its English translation (1986).

¹¹ I must mention that the reason for appointing students as assistant lecturers was not because they were exceptional students; but primarily because the academy was desperate to find more teachers, to teach the growing number of students enrolling in the academy.

Figure 3 The first page of the text of Pak Marto's speech



When I wrote my first book (Sumarsam 1995), I was very happy to find an old photo of Pak Marto delivering his speech as I played *gendèr* to provide examples (see figure 4 below). Notice, there is a diagram attached to the *gendèr*, also written on the blackboard (see Figure 6 below). The diagram shows how many *gembyang* and how many *kempyung* you can find in the *gendèr*. According to Pak Marto, the *gembyang* and *kempyung* as *sèlèh* (end tone) of *cèngkok* (melodic patterns) of *gendèr* playing differentiates one *pathet* from another.

Figure 4 The author played gender, providing illustrations for Pak Marto's speech in the 1968-ASKI graduation ceremony



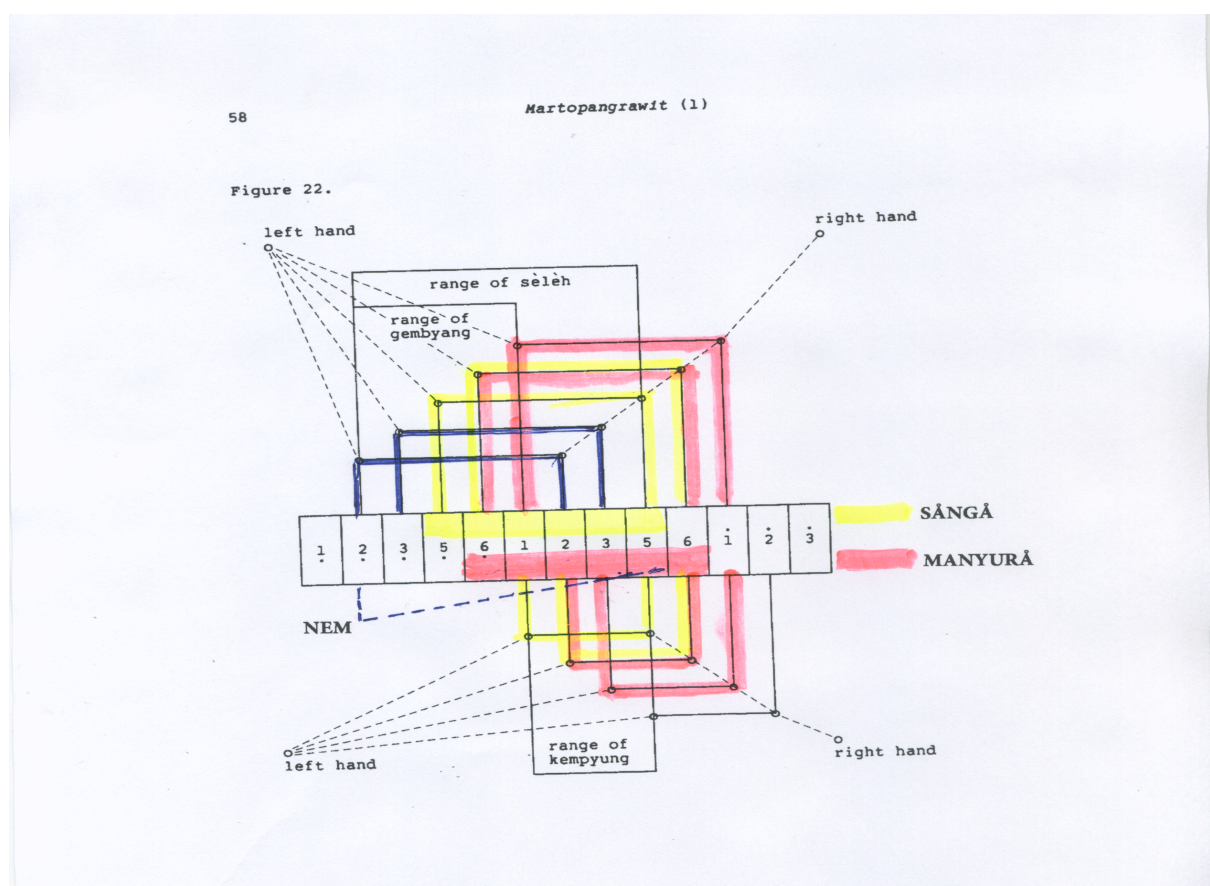
Now, I will discuss Pak Marto's analysis. First, he establishes the tonal hierarchies of each pathet. That is, each pathet designates a particular tone as *dong* or *nada dasar* (basic tone), which, if used as *sèlèh* (end-tone of a melodic pattern), gives the feeling of resolution. The next important tone after *dong* is lower kempyung, which also gives the feeling of resolution, but not as strong as the *dong* tone. Next, upper kempyung gives a weaker *sèlèh* tone. *Pelengkap* (supporter) tone is also a weaker *sèlèh* tone. Finally, *ding* is the weakest tone; it is never used as a *sèlèh* tone.

Figure 5 Tones hierarchy determining pathet (Martopangrawit 1984, 53)

pathet	lower kempyung	upper kempyung	dhing	dhong	pelengkap
pathet sanga	1	2	3	5	6
pathet nem	5	6	1	2	3
Pathet manyura	2	3	5	6	1

The reason for using *gendèr* to analyze *pathet* is because *gendèr* is the only instrument in the ensemble using both *gembyang* and *kempyung* intensively. The diagram attached to the *gendèr* in the photo shows the number of *gembyang* and *kempyung* available on the instrument. Within the range as defined by the tones used for ending the *cèngkok* (*sèlèh* tones), there are five *gembyang* and four *kempyung* (see the diagram below).

Figure 6 Yellow *Sàngå*; Red, *Manyurå*; Blue, *nem* – indicating certain *gembyang*- or *kempyung*-end-tone of *cèngkok* as one of the markers of *pathet* identification.



Certain *gembyang*-end-tone or *kempyung*-end-tone of *cèngkok* inform *pathet* of *gendhing*—see examples below (Figure 7).

Pangkur pathet Manyurå

3	2	3	1	3	2	1	$\widehat{6}$																							
$\dot{2}$	$\overline{.1\dot{2}}$	6	5	6	5	3	6	$\dot{1}$	6	$\overline{.56}$	5	6	$\dot{1}$	6	$\overline{.56}$	$\dot{1}$.	6	$\dot{1}$	6	6									
.	1	2	.	6	$\overline{126}$	5	3	.	3	6	5	$\overline{216}$	1	.	2	3	.	$\overline{212}$	2	2	$\overline{.16}$	5	3	.	5	.	6	6		
$\dot{1}$	6	3	~ 2	5	3	2	$\widehat{1}$																							
$\dot{1}$	$\dot{2}$	$\dot{1}$	$\overline{.6\dot{1}}$	$\dot{2}$	$\dot{1}$	$\dot{3}$.	$\dot{2}$.	$\dot{3}$.	$\dot{2}$	$\dot{1}$	6	5	6	5	.	5	6	5	3	6	5	6	3	6	5	6	$\dot{1}$
.	.	$\overline{.12}$	3	2	3	.	1	.	6	1	2	$\overline{321}$	2	.	.	$\overline{.61}$	2	1	2	.	$\overline{.65}$	3	.	6	$\overline{216}$	1	6			
3	5	3	~ 2	6	5	3	$\widehat{2}$																							
6	$\overline{.56}$	$\dot{1}$.	6	$\dot{1}$	6	$\dot{1}$	$\dot{2}$	$\dot{1}$	$\dot{3}$.	$\dot{2}$	$\dot{1}$	6	$\dot{1}$	$\dot{2}$	$\dot{1}$	$\overline{.6\dot{1}}$	$\dot{2}$	$\dot{1}$	$\dot{3}$.	$\dot{2}$.	$\dot{3}$.	$\dot{2}$	$\dot{1}$	6	
.	2	3	.	$\overline{212}$	2	2	$\overline{.16}$	5	3	.	5	.	6	.	.	$\overline{.12}$	3	2	3	.	1	.	6	1	2	$\overline{321}$	2	6		
5	3	2	~ 1	3	2	1	$\widehat{6}$																							
5	6	5	.	5	6	5	3	6	$\overline{.56}$	3	6	5	6	$\dot{1}$	6	$\overline{.56}$	$\dot{1}$.	6	$\dot{1}$	6	5	3	5	$\dot{1}$.	6	$\dot{1}$	6	
.	.	$\overline{.61}$	2	1	2	.	$\overline{.65}$	3	.	6	$\overline{216}$	1	.	2	3	.	$\overline{212}$	2	2	$\overline{.16}$	5	3	.	5	.	6	6			

Figure 12 Ladrang *Sobrang* Pathet Nem, pathet analysis

1	6	5	3	2	3	5	6
5 3 5 1̇ . 6 5 3 2 1 2 5 . 3 5 3	5 3 5 .35 6 5 1̇ . 6 . 1̇ . 6 1̇ 6						
. 1 . 5 6 . 5 6 .53 5 . 323 3 3	. . .16 1 6 1 . 5 . 3 5 6 1 2 6						
Pathet nem							
1	6	5	3	2	3	5	6
5 3 5 1̇ . 6 5 3 2 1 2 5 . 3 5 3	5 3 5 .35 6 5 1̇ . 6 . 1̇ . 6 1̇ 6						
. 1 . 5 6 . 5 6 .53 5 . 323 3 3	. . .16 1 6 1 . 5 . 3 5 6 1 2 6						
1	6	5	3	2	3	5	6
5 3 5 1̇ . 6 5 3 2 1 2 5 . 3 5 3	5 3 5 .35 6 5 1̇ . 6 . 1̇ . 6 1̇ 6						
. 1 . 5 6 . 5 6 .53 5 . 323 3 3	. . .16 1 6 1 . 5 . 3 5 6 1 2 6						

Pathet nem

$$\begin{array}{cccccccc} & 2 & & 2 & & . & & \sim \\ 3 & . & 5 & 6 & 5 & . \overline{35} & 6 & . & 5 & . & 6 & . & 5 & 6 & 5 & 6 & \hat{1} \\ \hline . & 2 & . & 6 & . & 1 & . & 2 & \overline{16} & 1 & \overline{12} & . \overline{16} & 1 & 5 & . & . & 2 & 1 & 2 & . & 6 & . & 5 & 6 & 1 & \overline{216} & 1 \end{array}$$

Pathet sângả

$$\begin{array}{cccccccc} & . & & . & & 1 & & 2 & & 3 & & 5 & & 6 & & \hat{5} \\ . & . & 6 & 5 & \dot{1} & 6 & \dot{1} & 5 & 3 & . & 5 & 6 & 5 & . \overline{35} & 6 & . & 5 & . & 6 & . & 5 & 6 & \dot{1} & 6 & 5 & 3 & 6 & . & 5 & 6 & 5 \\ \hline . & . & . & 5 & . \overline{61} & 1 & . & . & 2 & . & 6 & . & 1 & . & 2 & \overline{16} & 1 & \overline{12} & \overline{16} & 1 & 1 & . \overline{65} & 3 & 2 & . & 3 & . & 5 \end{array}$$

$$\begin{array}{cccccccc} & \dot{1} & & 6 & & 5 & & \sim & & 5 & & 3 & & 1 & & \hat{2} \\ \dot{1} & . \overline{61} & 5 & \dot{1} & 2 & \dot{1} & 6 & 5 & 3 & 5 & \dot{1} & . & 6 & \dot{1} & 6 & \dot{1} & 2 & \dot{1} & . \overline{61} & 2 & \dot{1} & 5 & \dot{1} & 6 & \dot{1} & . \overline{61} & 2 & \dot{1} & 6 \\ \hline . & 6 & 1 & . & 1 & \overline{321} & 2 & . \overline{16} & 1 & . & \overline{656} & 6 & 6 & . & . & . & \overline{12} & 3 & 2 & 3 & . & . & . & . \overline{53} & 2 & \overline{321} & 2 \end{array}$$

$$\begin{array}{cccccccc} & 1 & & 6 & & 1 & & \sim & & 1 & & 3 & & 1 & & \hat{2} \\ . & 5 & . & 6 & . & 5 & 6 & 5 & 6 & \dot{1} & 6 & 2 & . & \dot{1} & 6 & 5 & \dot{1} & . \overline{61} & 5 & \dot{1} & 2 & \dot{1} & 5 & \dot{1} & 6 & \dot{1} & . \overline{61} & 2 & \dot{1} & 6 \\ \hline \overline{16} & 1 & \overline{12} & . \overline{16} & 1 & 5 & . & 2 & . & 6 & 1 & \overline{216} & 1 & . & 6 & 5 & . & 1 & 2 & 3 & . & . & . & . \overline{53} & 2 & \overline{321} & 2 \end{array}$$

$$\begin{array}{cccccccc} & 5 & & 3 & & 2 & & \sim & & 6 & & 5 & & 3 & & \hat{5} \\ . & 5 & . & 6 & . & 5 & 6 & 5 & 6 & \dot{1} & 6 & 2 & . & \dot{1} & 6 & 5 & 3 & 2 & 3 & . \overline{23} & 5 & 3 & 6 & . & 5 & . & 6 & . & 5 & 6 & 5 \\ \hline \overline{16} & 1 & \overline{12} & . \overline{16} & 1 & 5 & . & 2 & . & 6 & 1 & \overline{216} & 1 & . & . & . & \overline{65} & 6 & 3 & 5 & 2 & . & 3 & 2 & 3 & 5 & 2 & 3 & 5 \end{array}$$

$$\begin{array}{cccccccc} & . & & . & & 5 & & 6 & & 1 & & 2 & & 3 & & \hat{2} \\ . & 2 & 3 & . \overline{23} & 2 & 3 & 5 & \dot{1} & 6 & \dot{1} & 5 & \dot{1} & 2 & \dot{1} & 6 & \dot{1} & 2 & \dot{1} & . \overline{61} & 2 & \dot{1} & 5 & \dot{1} & 6 & \dot{1} & . \overline{61} & 2 & \dot{1} & 6 \\ \hline . & . & . \overline{16} & 5 & 5 & 5 & 5 & . & . \overline{61} & . & 5 & \overline{165} & 6 & . & . & . & \overline{12} & 3 & 2 & 3 & . & . & . & . \overline{53} & 2 & \overline{321} & 2 \end{array}$$

$$\begin{array}{cccccccc} & . & & 2 & & 1 & & \sim & & 5 & & 6 & & 1 & & \hat{2} \\ . & . & \dot{1} & 6 & 2 & \dot{1} & 2 & 6 & 5 & 3 & 5 & \dot{1} & . & 6 & \dot{1} & 6 & \dot{1} & 2 & \dot{1} & . \overline{61} & 2 & \dot{1} & 5 & \dot{1} & 6 & \dot{1} & . \overline{61} & 2 & \dot{1} & 6 \\ \hline . & . & . & . \overline{612} & 2 & 2 & . & . \overline{16} & 1 & . & \overline{656} & 6 & 6 & . & . & . & \overline{12} & 3 & 2 & 3 & . & . & . & . \overline{53} & 2 & \overline{321} & 2 \end{array}$$

$$\begin{array}{cccccccc} & . & & 2 & & 1 & & \sim & & 5 & & 6 & & 1 & & \hat{2} \\ . & . & \dot{1} & 6 & 2 & \dot{1} & 2 & 6 & 5 & 3 & 5 & \dot{1} & . & 6 & \dot{1} & 6 & . & . & 5 & 6 & 5 & . & 5 & 6 & 5 & 3 & 5 & \dot{1} & . & 6 & \dot{1} & 6 \\ \hline . & . & . & . \overline{612} & 2 & 2 & . & . \overline{16} & 1 & . & \overline{656} & 6 & 6 & . & . & . & 2 & . \overline{16} & 6 & . & . \overline{16} & 1 & . & \overline{656} & 6 & 6 \end{array}$$

Transition to manyurả

. 2 1 6 . . i 6 2̣ i 2̣ 6 5 3 5 i . 6 i 6 <hr style="width: 100%;"/> . . . 6̣12 2 2 . 1̣6 1 . 6̣56 6 6	. . 5 6 . . 5 6 5 .35 6 5 3 5 i . 6 i 6 <hr style="width: 100%;"/> . . . 2 .1̣6 6 . 1̣6 1 . 6̣56 6 6
<div style="display: flex; justify-content: space-around; align-items: center;"> <div> i i 6 i i . 6 .56 .56 i 2̣ i 6 2̣ . i i i <hr style="width: 100%;"/> . 1 . 3 .21 1 . .21 2 . 1̣61 1 1 </div> <div> 5 6 i 6 6 . 6 i . 6 i 2̣ 3̣ . 2̣ 3̣ . 2̣ i 6 <hr style="width: 100%;"/> . 2 3 . 212 2 2 3 . 2 3 . 2 1 6 </div> </div>	
manyurā	
. . 6 . . 3 5 .35 3 5 6 2̣ .1̣2̣ 6 2̣ .1̣2̣ 6 <hr style="width: 100%;"/> . . .21 6 6 6 . .56 6 . .56 6 .	6 6 5 6 5 3 5 i . 6 5 3 5 6 5 i . 6 i 6 <hr style="width: 100%;"/> .1̣6 1 . 6̣56 6̣53 . 1 . 5 6 3 5 6
i i 6 i i . 6 .56 .56 i 6 5 6 2̣ . i 2̣ i <hr style="width: 100%;"/> . 1 . 3 .21 1 . .21 2 . 1̣61 1 1	6 5 2 3 2̣ i 3̣ 2̣ 6 5 3 2̣ 5 6 i .6̣1 6 5 3 <hr style="width: 100%;"/> 2̣ 123 2̣ 6 5 3 5 5 6 .1̣.6̣1 6 5 3
. 3 5 6 5 3 5 .35 6 5 i . 6 . i . 6 i 6 <hr style="width: 100%;"/> . . .1̣6 1 5 6 3 . 5 3 5 6 3 5 6	i 6 5 3 5 3 5 i . 6 i 6 5 3 2̣ 5 . 3 5 3 <hr style="width: 100%;"/> . 1 . 5 6 3 5 6 .5̣3 5 . 3̣23 3̣ 3̣
2 1 6 5 5 .35 6 . 5 6 5 3 2̣ 3̣ 6 . 5 6 5 <hr style="width: 100%;"/> . 1 2 . 1̣61 1 1 .6̣5 3̣ 2̣ . 3̣ .5̣ . 6̣ 1 . 1̣ 321 2̣ .1̣6 1 . 5̣ 1̣6̣5 6̣	1 2 1 6 i .6̣1 5 i 2̣ i 6 5 3 5 i . 6 i 6 <hr style="width: 100%;"/> . 6̣ 1 . 1̣ 321 2̣ .1̣6 1 . 5̣ 1̣6̣5 6̣
Transition to sāṅgā then back to nem	

The function of *gembyang* and *kempyung* as one of the indicators of *pathet* goes beyond the realm of *gendèr*. It is also applicable to the way two punctuating instruments (i.e., instruments whose function is to delineate rhythmic structure of a composition), namely *kenong* and *kempul*, play their punctuating tones. That is, in the case where the melody of a piece is in the middle octave, when for example *kenong* and *kempul* should play tone 1 in a piece of *pathet Sanga*, they will play 5 (*kempyung* interval), instead of 1 (*gembyang* interval). In a composition in *pathet mayurā*, when a melodic phrase ends on pitch 2, *kenong* and *kempul* play 6 (*kempyung* interval).

This practice will make the sound of *gembyang* and *kempyung* produce a rich musical affect, especially in the case of older gamelan ensemble whose *kenong* and *kempul* is limited to only three tones: pitch 5, 6, and 1.

Conclusion

In conclusion, what do we learn from Poerbatjaraka and Pak Marto? Poerbatjaraka's interesting analysis gives us a hint that one can learn about *pathet* from passages from the Middle Javanese *kidung*. In addition, his mention of *gendèr* being derived from the Indian *Gandhara* reminds us of the intensive India-Java cultural interaction since the early centuries to the 14th century AD, especially in the realms of religion and literature. The appearance of passages of Indian music theory in a number of Sanskrit-based Old Javanese *kakawin* lead us to ponder the influence of Indian music on Javanese music at the time. Studies by Richard Widdess, Amrit Gomperts, and others have dealt with this topic.

Pak Marto's contribution to the discourse of *pathet*, which has been documented by himself and his disciples, informs us of the journey of a professional musician, from the era of traditional gamelan education to an educational system based on a Western modality, from aural to written tradition. The mixture of traditional learning and the idea of scientific study of music has brought about Pak Marto's hybrid theoretical perspective, sometimes resulting in an analysis which leans more towards traditional learning, but at other times leaning more towards the perspective of Western codification.

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