

## RE-ACTUALAIZATION BALINESE *GAMELAN* HARMONY<sup>1</sup> FOR RENEWAL KNOWLEGDE OF THE BALINESE MUSIC

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Balinese music has a variety of *Gamelan* that developed in the community. Balinese *Gamelan* becomes a central object in the development of Balinese musical knowledge. One of the most problematic is the harmony system of Balinese *Gamelan*. In the context of Balinese musical knowledge, the harmony system is an element that is often discussed in its existence and development. The 'harmony system' has been recognized through a dualistic concept in the Balinese musical knowlegde. This concept is the source of Balinese *Gamelan* playing techniques in the Balinese *Gamelan*. The all playing techniques by two patterns. The patterns are called *polos* and *sangsih*, which means that all harmony is manifested through two different patterns, both constitute one necessity, which can be called harmony, and it is closely related to playing techniques.

Knowledge of the harmony system with the dualistic concept was base on the *Gamelan* Gong Kebyar research object. *Gamelan* Gong Kebyar is indeed very attached to the dualistic system. However, this system is not relevant to some other Balinese *Gamelan*, one of which is the *Gamelan Gambang*. Furthermore, the harmony system with a dualistic concept is not represented in other Balinese *Gamelan*. Therefore, knowledge about the harmony system in Balinese music needs to be renewed again. This renewal is an actualization of knowledge in terms of *Gamelan Gambang* research. The problems discussed in this article are what is meant by the harmony of Balinese *Gamelan*, the limits of harmony of Balinese *Gamelan* and the concept of harmony of Balinese music harmony.

The purpose of this research is to make a basic of knowlegde of the Balinese musical harmony system. A basic of knowlegde that can be applied in a variety of the all Balinese *Gamelan*. The research method used was qualitative research with a musicological approach and sound physics. The musicological approach aims to renew knowledge about a understanding of harmony in the *Gamelan*, and the sound physics approach is to study the frequency of Balinese *Gamelan* tunes which can be an important element in the *Gamelan* harmony system.

Keywords: Actualization, harmony, *Gamelan*, music.

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<sup>1</sup> The term harmony in this study does not refer to the notion of harmony in western music. This term is indeed sometimes used by ethnomusicology researchers to refer to several game models that produce harmony, so that one of the implementation of harmony in good musical instruments is closely related to playing techniques.

## INTRODUCTION

The tuning system greatly influences the playing system which eventually becomes the basic harmony in the concept of the Balinese *Gamelan* tradition. The tunes are deliberately tuned to create different frequencies for the same tone in the *Gamelan* - this is known as the *ngumbang ngisep* concept in the Balinese *Gamelan* "tone" system. *Ngumbang ngisep* is a concept that creates variations in playing techniques, which ultimately represent the harmony in the Balinese *Gamelan*. Sugiarta stated that harmony - which has the same position as melody, rhythm, and frequency - is the result of sound modification done by artists (Sugiarta, 2015). Therefore, the modification of sound through frequency in the tuning system has an important aspect in the context of Balinese *Gamelan* harmony.

The Balinese *Gamelan* tradition gives freedom to each *Gamelan* maker to interpret his taste in tuning the *Gamelan*. This tradition causes the harmonization system between one and another *Gamelan* to diverse, both between the same type of *Gamelan* (gong kebyar with the other gong kebyar) and the different types (gong kebyar with other *Gamelan*: *Samara Pagulingan*, *Leluangan*, *Bebarongan*, *Gambang*). So, this is causes the theory of harmony to be difficult to explain in musical practice. However, this is the special features of karawitan, including Balinese *Gamelan*. The practice of harmony is usually closely related to playing techniques, so that the diversity of *Gamelan* results in a variety of techniques, that also at the same time, its results in a diversity of the concept of harmony.

At present, the harmony in the context of Balinese *Gamelan* is explained through studies of the *Gamelan* Gong Kebyar, so that other ancient *Gamelans* such as *Gambang* which has self-harmonized characteristics are not formulated in detail, ultimately people only know about the Balinese *Gamelan* harmony system represented by the *Gamelan* Gong Kebyar. Therefore, it is very important to update knowledge of Balinese *Gamelan* harmony by observing and researching the *Gamelan Gambang*.

There is a gap between the knowledge of harmony contained in some literatures and the practices of several types of Balinese *Gamelan*, one of which is

the *Gamelan Gambang*. So that, it is necessary to formulate the concept and theory of harmony which is applied by the musicians in the daily *Gamelan Gambang* practice.

*Gamelan Gambang* is one type of Balinese *Gamelan* that has not been widely discussed and described regarding the study of text<sup>2</sup> in detail. This *Gamelan* is said to be one of the sacred *Gamelan* which is usually used to accompany religious ceremonies in Bali. Based on its position as a sacred art, it is very natural that ethnomusicological discussions have colored many writings on *Gamelan Gambang*. Referring to the researcher's experience of listening and watching, the *Gamelan Gambang* is a typical *Gamelan* that has complex systems and techniques in Balinese *Gamelan* vocabulary. Because of its complexity, *Gamelan Gambang* should have had systematic musical systems. Even so, there are not many reviews about techniques and systems - including the harmony system in the *Gamelan Gambang* - which can be read, understood as a basis for playing practice and the development of sciences. Therefore, it is important to conduct research that focuses on the harmony system.

Based on the above background, the formulation of the questions is as follows: What is called harmony in Balinese musical instruments? ; What are the limitations of the science of harmony in Balinese *Gamelan* ?; How is the concept of the Balinese musical harmony system found in the *Gamelan Gambang*?. The purposes of this study are such as: to formulate an appropriate definition of harmony within the framework of Balinese musical knowledge; Formulating the boundaries of harmony in Balinese musicals; Finding a concept about the Harmony system in Balinese musicals.

## **MATERIALS AND METHOD**

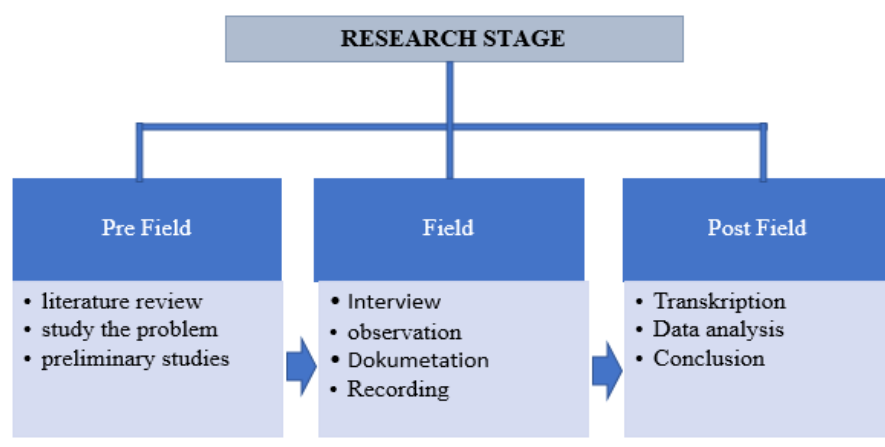
The research in the form of Re-Actualization of Balinese *Gamelan* Harmony for the Renewal of Balinese Music Knowledge is classified as a combination of qualitative and quantitative research. Qualitatively, this research uses descriptive

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<sup>2</sup> The study of the text in question is a research that specifically discusses tone, musical organization, tunings, patets, and even the *gamelan Gambang* harmony system.

analytical method which aims to obtain data about the basic concepts of harmony. The approach used in studying these objects is musicology. In the Balinese music, the musicalological approach is closely related to musical elements, such as: melody, rhythm, dynamics, harmony, tempo, and playing techniques. These elements are analyzed descriptively based on empirical data in the field. Therefore, the main data in this study, which is about harmony, it is not seen based on the theory of western music harmony, but it is analyzed based on musical instruments, because the harmony of western music in practice is different from that of karawitan. Musicologically, the harmony system is closely related to the high and low sound frequencies of the tones parallel between one tone to another, so that this frequency is analyzed quantitatively based on the sound physics approach. The musicology approach aims to solve the problems of playing techniques which according to the researcher are an important part of the term in defining harmony. This term includes: a playing system that is the basis for various playing techniques contained in the *Gamelan Gambang*, the scale system, and the tuning system. A physics approach that aims to obtain measurements of the frequency of tones available in the *Gamelan Gambang*. This frequency becomes the basic foundation in determining the ideal combination of tones so that it can be categorized as a Balinese *Gamelan* harmony system. The two approaches above will be supported by valid data to get the right conclusions.

### Research Flowchart



Bagan 1. research stages

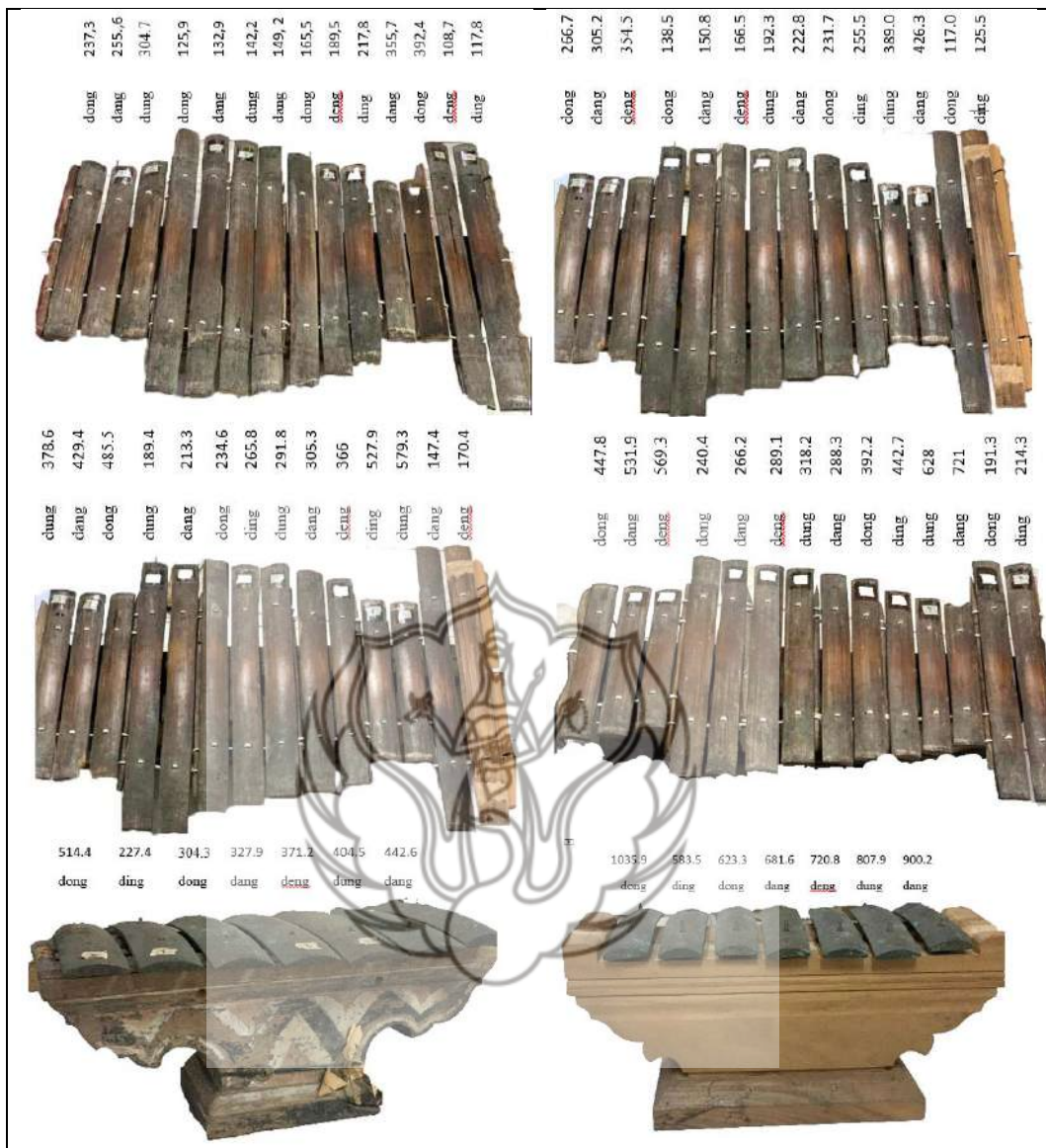


Figure 1. Gamelan *Gambang* instrumens, foto 10 Agustus 2020

No	Name	Description
1.	<i>Gambang pengenter</i>	<i>Gambang Pengenter</i> is an instrument that functions to play the ornamentation patterns of each song and has a pitch and low pitch based on the frequency of each note.
2.	<i>Gambang Pemero</i>	The <i>Gambang pemo</i> is one of the four gamabng that functions as an instrument that plays the ornamentation patterns of



3.	<i>Gambang</i> Penyelat	each song, and has a different tone frequency from other <i>Gambang</i> . The <i>Gambang</i> penyelet is one of the four xylophone which also functions as an instrument that plays the ornamentation patterns of each song. The xylophone diver also has a different pitch than the other four xylophone.
4.	<i>Gambang</i> Pemetit	The <i>Gambang</i> pemetit is one of the four xylophone that plays the ornamentation melody patterns on each song and also has a different pitch tone from the other four xylophone.
5.	Gangsa Gede	Gangsa gede is an instrument that functions to play a song frame in each song, and has a different pitch than the xylophone instrument.
6.	Gangsa Cenik	Gangsa cenik is an instrument that also functions to play the melodic framework of each song.

Table 1. The information of figure 1.

## DISCUSSION

### A. Harmony sistem in the *Gamelan* *Gambang*

See Figure 1, the pattern of laying out the tone arrangements on the *Gambang* above, considering the concept of harmonization with good sound quality, produced when two notes are struck together. Each *Gambang* instrument has a tone position that refers to the concept of tonal harmonization by considering the aesthetic aspects of the sound. The pitch distance of each instrument is adjusted by considering the aspect of harmony so that when it is played it will immediately provide chords, kwints, and notes. The harmony playing pattern on the *Gambang* is supported by the *Gambang* bat (*panggul*) which has been set in such a way, all the *Gambang* *panggul* has a different distance between the right and the left *panggul*. (Mariana, et al, 2019). The following is a picture of the pelvis for playing the xylophone instrument:



Figure 2. the *panggul* Gamelan *Gambang* instrumens, taken by Mariana.

The *panggul* (instrument) above is played with two hands that are played equally between the right and left hands. Referring to the shape of the *panggul*, every stroke of the right or left hand will always sound two tones. Therefore the two notes are simply applied as harmony. The purpose of the two notes being played simultaneously is also strongly influenced by the *Gamelan Gambang* tuning system which is different from Balinese *Gamelan* in general. The following is a recapitulation of the *Gamelan Gambang* tuning system which is recapitulated from Figure 1:

Instrumen/ <i>Tungguhan</i>							
Pengenter		Pemero		Penyelat		Pemetit	
Hertz	Nada	Hertz	Nada	Hertz	Nada	Hertz	Nada
108.7	deng						
117.8	ding	117	dong				
125.9	dong	125.5	ding				
132.9	dang	138.5	dong				
142.2	dung	150.8	dang	147.4	dang		
149.2	dang	166.5	deng	170.4	deng		
165.5	dong	192.3	dung	189.4	dung		
189.5	deng	222.8	dang	213.3	dang	191.3	dong
217.8	ding	231.7	dong	234.6	dong	214.3	ding
237.3	dong	255.5	ding	265.8	ding	240.4	dong
255.6	dang	266.7	dong	291.8	dong	266.2	dang

304.7	dung	305.2	dang	305.3	dang	288.3	dang
355.7	dang	354.5	deng	366.0	deng	289.1	deng
392.4	dong	389.0	dung	378.6	dung	318.2	dung
		426.3	dang	429.4	dang	392.2	dong
				485.3	dong	442.7	ding
				527.3	ding	447.8	dong
				579.3	dong	531.9	dang
						569.3	deng
						628.0	dung
						721.0	dang

Tabel 2. Rekapitulasi frekuensi masing-masing instrument *Gambang* dengan sistem pasangan

### Information

The colors symbolize the notes and the game system. The same color in one instrument category means notes of different frequencies are being struck simultaneously. The blue color is struck together with the blue and so on for the column on the other instruments.

The data above is a recapitulation of the frequency of each tone on each xylophone instrument. Each instrument plays two notes simultaneously (marked with the same color on each instrument). This playing technique has simply shown that every stroke always plays two notes with different frequencies. In the table, although playing the same tone, theoretically, it does not mean that the same note is an octave. For example, for example, the *ding* tone column (117.8 hertz) is always hit simultaneously with the *ding* tone (217.8). Between the first *ding* note (117.8 hertz) and the second *ding* (217.8) is not an octave tone, such as do with high do. Therefore, this simultaneous play will significantly produce sound characteristics which in the Balinese musical concept is called harmony. This playing model is different from Balinese *Gamelan* in general so that the *Gamelan Gambang* has its own uniqueness. The following shows the differences in frequencies based on the same tone (*ding* tone with *ding*, *dong* with *dong*, and so on) but has different frequencies.

Nada	Pengenter	Pemero	Penyelat	Pemetit
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Tabel 3. Rekapitulasi tinggi rendah nada-nada yang sama pada masing-masing instrument *Gambang*.



Ding	117.8	125.5	265.8	214.3
Dong	125.9	138.5	234.6	191.3
Deng	108.7	166.5	170.4	289.1
Dung	142.2	192.3	189.4	318.2
Dang	132.9	150.8	213.4	266.2
Ding	217.8	255.5	527.3	442.7
Dong	165.4	138.5	291.0	240.0
Deng	189.5	354.5	366.0	569.3
Dung	304.7	389.0	378.6	628.0
Dang	255.6	222.8	305.3	288.3
Ding				
Dong	237.3	231.7	485.3	372.2
Deng	-			
Dung			378.6	
Dang	255.6	305.2	429.4	531.9
ding				
dong	392.4	266.7	579.3	447.8
deng				
dung				
dang	355.7	426.3		721.0

The data in the table shows that none of the notes contained in the xylophone instrument are the same. This difference is part of the very dynamic *Gambang* concept, meaning that each *Gamelan Gambang* has its own frequency size without having to follow other *Gambang*. This difference in frequency, when played, will harmonize each playing. This is also a distinct difference from other Balinese *Gamelan*.

As in the explanation in the previous section, the representation of Balinese *Gamelan* harmony can be seen from a playing system that combines two different tonal elements so that a characteristic sound color appears which is considered harmonic. The existence of this system is actually related to two things, namely the Balinese *Gamelan* tuning system and playing techniques. Therefore, the explanation regarding the actualization of Balinese *Gamelan* harmony in this section is discussed through a simple tuning system (the result of a bid) and playing techniques. First, the discussion of the tuning system will be fluent in recognizing the shape and model of the instrument so that this model affects the way and technique of playing. The shape of the instrument and how to play it as shown above implicitly shows that the *Gamelan Gambang* is a manifestation of harmony caused by its tuning system. Therefore, the tuning system: adjusting the high and low notes

that do not have the same frequency in one type of tone is a concept of harmony, which can affect the playing technique so that it creates a variety of sound characteristics if all the xylophone instruments are played simultaneously.

## **B. The Principle of Harmony in Balinese *Gamelan***

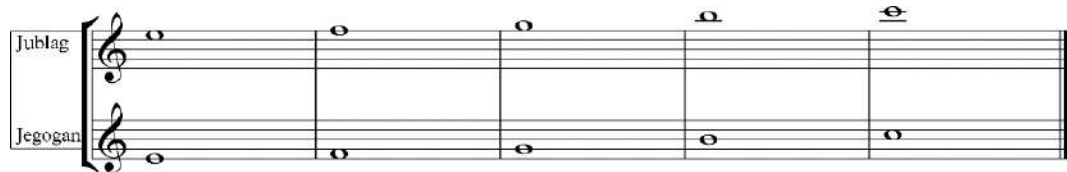
Harmony is one of the manifestations of musical patterns in Balinese musicals which are determined from the combination of tones in each musical composition. In general, in several books, what is considered as a representation of harmony is a playing pattern that combines between two different tones, namely the first note with the fourth tone, so that in the playing, auditive characters that are considered harmonious will emerge. However, this concept is only played by instruments that function as ornamentation, and not played by instruments that function as playing the main melody. This is one of the reasons that the concept of harmony in Balinese *Gamelan* and karawitan is not the same as western music, however, for the phenomena that have been mentioned, it can be categorized as the concept of harmony based on the philosophical concept of harmony.

### ***Ngembat, Ngempat, Nelu* as Representation of Harmoni**

*Ngembat, ngempat, nelu* is a playing model in several Balinese *Gamelan* compositions which can be called harmony. In a musical organization, this harmony is a melodic playing pattern called a foundation, which is an ornamentation (melody of development) of the main melody. This pattern is played improvisational by players of *pemade, kantil, and riyong* instruments. This choice is based on the interpretation of the player. However, the player cannot freely interpret the play of the melody of the foundation. The effect of the concept of musical organization in Balinese musicals is a way of interpreting the ornamentation pattern with three models, namely: *ngembat, ngempat, and nelu*.

### *Ngembat*

*Ngembat* (octave) is a system of mixing lows and highs that are struck simultaneously to show that as a musical organization there are several different and harmonious sound colors. More details can be seen in the notation below:

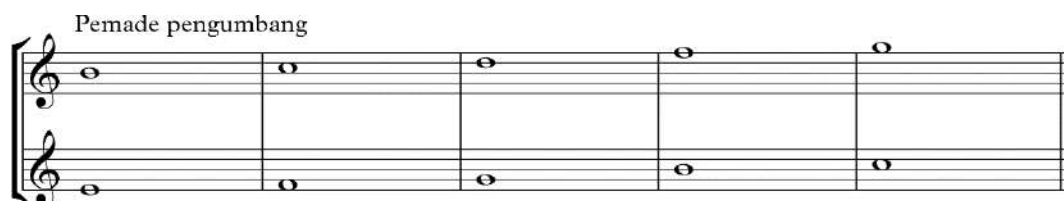


Notasi 1. Harmony *ngembat*

### *Ngempat*

Theoretically, *ngempat* is an effort to harmonize the high sound and the lower sound in one stroke played simultaneously through two different instruments so as to produce a variety of sound characteristics.

The playing of *ngempat* is played by *kantil* and *pemade* instruments. This playing is applied through a plain *polos* and *sangsih* system, meaning that in its application the playing of *ngempat* is played by two instruments of the same type (two instruments of *pemade/pemade* contributor). The concept of this playing is contained in the *Gamelan* pelog five and seven notes. The *ngempat* system is a harmony model generated from a dynamic game of *kantil* and *pemade*. An example of a melody playing is as follows:



Notasi 2. Harmoni *ngempat*

The concept of *ngempat* from *pemade pengumbang* instrument is the same as *pemade pengisep*. This game is a harmony generated from the joint play between *ding* tones with *dung* tones, *dong* tones with *dang*, *deng* with *ding*, *dung* with *dong*, *dang* with *deng*.

### *Nelu*

Third, the *nelu* playing system is a harmony pattern generated from two different tones played by the same type of instrument. Here is the notation:

Pemade pengumbang



Notasi 3, Harmoni *nelu/tehu*

The image shows a musical score for the instrument 'Pemade pengumbang'. It consists of two staves, each with a treble clef. The notation includes several notes, some of which are beamed together. A large, stylized watermark of a figure, possibly a deity or a traditional character, is overlaid on the music. Below the watermark, the text 'Notasi 3, Harmoni nelu/tehu' is written.

### C. Practice Harmony in the *Gamelan Gong Kebyar*.

The practice of harmony in this sub-section is reviewed based on practical experience found in the *Gamelan Gong Kebyar* and so on. Of course, this review is to show the difference in the application of the harmony system both in practice and in the playing (technique) with the *Gamelan Gambang*. This comparison is important to explain so that the results of observations and analyzes of the harmony system in the *Gamelan Gambang* are different from Balinese *Gamelan* in general. This difference will indicate a renewal of the harmony system that has not been disclosed scientifically and in detail so far.

This review of the practice of harmony in Balinese *Gamelan* will use several case studies. The case study is the practice of playing Balinese music, which has been developing and often presented by musicians. This piece is a traditional piece. The principles and practices are a fundamental concept in the playing patterns of Balinese *Gamelan*. Therefore, the concept of the practice of playing harmony presented in it is something that is common and natural for every musician in Bali.

The practice of harmony in every Balinese *Gamelan* repertoire is played through several playing techniques. The technique is a way to create a melody. The practice of making melodies that contain harmony in Balinese *Gamelan* can be played through several techniques, namely: the twist technique, the *norot* technique. These two techniques have different concepts in a melody game. These two techniques are a way of weaving the ornamentation melody played by the *pemade*, *kantil*, and *reyong* instruments.

### **Implementation of Harmony through the *Ubit-ubitan* Technique**

*Ubit-ubitan* is one of the techniques commonly used by musicians in presenting Balinese musical repertoire. The application of this technique aims to obtain a composition that seems dynamic, complex, and aesthetically pleasing. This technique is used in case studies of certain repertoires only. An example of the application of this technique is in the accompaniment of *Pendet* dance.

In the accompaniment of *Pendet* Dance, the pattern of the *ubit*-circle game is played by instruments, *kantil*, *pemade*. These two instruments play with the concept of *polos* and *sangsih*. From this playing there are several horizontal harmony patterns. The following below is an example of the twirling game pattern and its concept of harmony.



The image displays musical notation for five instruments: Jegogan, Jublag, Ugal, Kantil, and Pemade. The notation is organized into two systems of staves. The first system shows the initial notes and rhythms for each instrument. The second system shows the continuation of these patterns. A watermark of a figure is visible in the background of the second system.

Notasi 5. Harmoni dari teknik *ubit-ubitan*

In the *Pendet* repertoire practice system above, the harmony application is played with the *ngembat* system. This harmony system is present in every beat because the application is played by all instruments, namely *jegogan*, *jublag*, *ugal*, *pemade*, and *kantil*. Each instrument plays its own pattern (see previous page).

The musical above is a short example consisting of 4 bars and played repeatedly. Each instrument has a different pitch value. *Jegogan* as an instrument

that plays a melodic framework, plays once in eight beats, namely on the first and eighth beat. The sound produced from the playing still has a vibration or vibration on the second, third to eighth beat. This means that on the second to seventh beats there is a sound resulting from the vibration of the *jegogan* instrument whose voice is *dung* in tone, while on the ninth beat to the fifteen beats it has a *ding* tone. These sounds or vibrations - especially on beats two through seven and nine to fifteen - are integrated with the other notes played by the *jublaga* instrument and others (see notation above).

The *jublaga* instrument plays notes: *dung, ding, dung, dang, ding, deng, dong, dang*. The *dung* note is played on the first beat, even though the vibration is still vibrating on the second beat as well as the next note, meaning that every note is played by the vibration on level 2 beats. Based on the concept of play patterns and the resulting vibration effect, a harmony system occurs which can be seen in the table below:

Ke	<b>n</b>	n	nv	n	nv	n	nv	n	<b>n</b>	n	nv	n	nv	n	nv	<b>N</b>
t	<b>p</b>	v		v		v		v	<b>p</b>	v		v		v		v
Jg	u	u	u	<b>U</b>	u	u	u	u	i	i	i	i	i	i	i	<b>I</b>
Jb	u	u	i	<b>I</b>	u	u	a	a	i	i	e	e	o	o	a	<b>A</b>
Ke	<b>n</b>	n	<b>n</b>	n	<b>n</b>	n	<b>n</b>	n	<b>n</b>	n	<b>n</b>	n	<b>n</b>	n	<b>n</b>	<b>N</b>
t	<b>p</b>	v	<b>p</b>	v	<b>p</b>	v	<b>p</b>	v	<b>p</b>	v	<b>p</b>	v	<b>p</b>	v	<b>p</b>	<b>p</b>

Tabel 4. Harmony practical concept

See the table above which consists of 4 columns down. The top column is the description (Ket for the Jegogan instrument) which consists of 16 columns<sup>3</sup> of **np** (struck tone<sup>4</sup>), **nv** (vibrational tone<sup>5</sup>). The striking tone is on the first and eighth beats, while the vibrational tone is on the second to seventh and ninth to fifteenth beats. Next look at the second column from the top. In the column there is a symbol **Jg** which means the *jegogan* instrument. In the next column there are 8 symbols u and 8 i symbols. Symbol u means *dung* tone and symbol i means *ding* tone. The *jegogan* instrument plays *dung* notes as hit notes on the first beat and *dung* notes as vibrational notes on the second to seventh beats. On the eighth beat, the *ding* (i) tone is played as the striking tone and the *ding* (i) tone is played as a vibrational tone on the ninth beat to the fifteenth beat.

In the third column there is a symbol of **Jb**, which means the *Jublag* instrument. In this column there are several notes that are played with the following symbols: u (*dung* tone), i (*ding* tone), a (*dang* tone), e (*deng* tone), o (*dong* tone). In the fourth column (vertical) there is a ket which means to explain the type of tone played by the *jublag* instrument. In this information, there is a hit tones for every odd and even beat.

Analysis of the harmony system contained in the pattern above is that at the first beat between the *jegogan* and *jublag* instruments there is a symmetrical

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<sup>3</sup> This means that it consists of 4 bars. 4 columns are 1 bar. Therefore, the 16 columns have 2 punch tones and 14 vibrational tones).

<sup>4</sup> This term is to describe the resulting tone being struck at the time of the 1st and eighth beats in accordance with the concept of playing the Jegogan instrument.

<sup>5</sup> This term is to describe a vibration that is still present and heard at every beat even though no tone is struck by the instrument according to the description above.

harmony which is manifested by a combination of the tone u (*dung*) is lower and u (*dung*) is higher (*ngempat*) - see beat one, two, five, six, eight, and nine. On the third beat, there is a combination of the tone u (*dung*) and i (*ding*), this means the concept of a combination that uses the *nelu* system. In the sixth and seventh beats there is a combination of the tone u (*dung*) and a (*dang*), this means using the *siliran* system. On beats ten and eleven there is a combination of tone i (*ding*) with tone e (*deng*), this means using the *nelu* system; On the twelfth and thirteenth beats there is a clause between the tone i (*ding*) and o (*dong*), this means using the *siliran* system. Finally, on the fourteenth and fifteenth beats there is a combination of the tone i (*ding*) with the tone a (*dang*), this means using the *siliran* system.

The harmony playing system contained in the example of the above can be concluded, namely: a system that is vertical and horizontal. Vertically it is applied through a system of *ngembat*, *ngempat*, *nelu*, *siliran*, while the horizontal harmony system is the movement of the change in the harmony model at each beat. Therefore, the horizontal harmony of the above pieces is from *ngembat* to *nelu*, *ngembat*, *siliran*, *ngembat*, *nelu*, *siliran*, and *siliran*. Of the 16 beats contained in the music above, there are several characteristics of the impression that can be generated from the harmony playing above. According to the author, the character of *ngembat* tends to be happy, *nelu* tends to be restless, and *siliran* tends to be restless.

### **Implementation of Harmony through the *Norot* Technique**

*Norot* is a Balinese *Gamelan* technique that is often used to interpret a single frame of the melody and main melody. This technique is used to weave a

development melody that is played by the *pemade*, and *reyong* instruments. The playing is manifested in a *polos* and *sangsih* system. This system is played by *kantil* and *pemade* instruments. Apart from *kantil* and *pemade*, *reyong* also plays its role as a melodic development instrument by playing the *norot* technique in certain *gending* cases. *Reyong* instruments are more complex than *kantil* and *pemade*. The *norot* technique found in *reyong* is played with 4 players by applying different melodies so that the harmony system contained in it is more complex. Therefore, in the case of the implementation of the harmony system in the *norot* technique, it will be analyzed through the *reyong* game pattern in the case study of the first part of the musical instrument, *tabuh telu sekar gadung*.

The image displays two systems of musical notation. The first system consists of three staves. The top staff has a whole rest. The middle staff contains a melodic line with quarter notes. The bottom staff features a complex rhythmic pattern of eighth notes, likely representing the 'norot' technique. The second system also has three staves. The top staff has a whole rest. The middle staff contains a melodic line with quarter notes. The bottom staff features a complex rhythmic pattern of eighth notes. A watermark of a deity is visible in the background of the first system.

Notasi 6. Harmoni dari teknik *norot*

The pattern of the *reyong* playing above is played by 4 players in one instrument. The playing concept is divided into 4 patterns. All four are played simultaneously. The same time with a different melody direction produces a harmony. A concrete



explanation of each measure for each rickshaw player and the system can be shown in the table below:

Jb	Dang (a)			
Reyong 1	a (dang)	e (deng)	a (dang)	e (deng)
Reyong 2	e (deng)	i (ding)	e (deng)	i (ding)
Reyong 3	a (dang)		a (dang)	
Reyong 4	e (deng)	i (ding)	e (deng)	i (ding)

Tabel 5. Interpret *reyong* instrument musical on first beat and first bar.

The table above consists of several columns which among them are intended to show the instruments and notes being played. The first column (at the top) consists of two columns: the left column shows the name of the instrument, namely the *jublaga* instrument, while the right column is the basic tone played by the instrument. The tone played is the tone a (*dang*) which in the above notation is equated with the tone do. Tone a (*dang*) is interpreted into four patterns of *reyong* play (can be seen in the second, third, fourth, fifth tables). Each *reyong* plays different notes but is played simultaneously. The combination contained in the *reyong* playing is: the tone a (*dang*) is played simultaneously with the notes e (*deng*), a (*dang* high); tone e (*deng*) is played simultaneously with note i (*ding*). The playing of these notes simultaneously uses the *nelu* and *ngempat* and *ngembat* systems.

The playing pattern above contains an example of just one tap. One beat can represent the play of the next beat. In essence, each beat with the basic tone played by the *jublaga* instrument is interpreted using the *nelu*, *ngempat*, and *ngembat* system by the *reyong* instrument. This means that every root note will always be interpreted

simultaneously with the *nelu*, *ngempat* and *ngembat* systems. Therefore, the pattern of movement of the harmony system will always be the same horizontally. This is somewhat different from the harmony system that is played through the twist technique.

### Conclution

Referring to the discussion of *Gamelan Gambang* and Kebyar above, the harmony system is a pattern of play that combines several tones in a single pattern. There are three indicators related to the *Gamelan* harmony system, namely: 1) the tuning system; 2) a combination of tones called *ngembat*, *ngempat*, and *nelu*; 3) playing technique. All three are related to one another. The tuning system, especially those without the *Gambang Gamelan*, has the appearance of the presence of a combination of tones which becomes an idiom of harmony. The combination between the notes determines the playing technique that must be used in working on a harmonic composition.

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