



Creative Music Research and Development: The Innovation of Harmonic and Orchestral Soundscape for Synthetic Chorus

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Abstract

The creative and developmental research aimed to study the innovation of harmonic soundscape of the tonal theory in order to implement the new approach of method using 'Rajabhat Rajapakdi' theme as the experimental model. The newly applied harmony, instrumental arrangement, and sophisticated sound design technology were the key factors to enhance the musical value and aesthetic sense of appreciation. In addition, the perfectly well-crafted versions of the music were presented as the concerts and the creative music documentary, in forms such as CD and DVD. Meanwhile, the music was implemented by the innovated and splendid technique, stylistic interpretation, as well as the kaleidoscope of an imaginative soundscape. The advance technology showed its high-efficiency performance in minimizing manpower and financial economy. The rich sound resonance of the 'Rajabhat Rajapakdi' tune was arranged to accommodate small numbers of musical instruments, musicians and singers whereby it still maintained, quality of the orchestra. Musical technology and the synthetic sound were used to enhance the sound quality. The newly written version of 'Rajabhat Rajapakdi' for Synthetic Chorus was also based upon current technology, used in the movie industry and it's an economical way to create music production with the orchestral score but with a wide range of resources. The concepts of composing Western classical, Jazz, and Thai music are based on the fundamental of tonal theory. The synthetic chorus was performed by 4 choral singers accompanied by saxophone and piano, by the time that the synchronizing sounds were integrated, the chorus and instrumentalist have empowered the synthetic orchestral dimension.

Keywords: *Creative Music Research and Development, Innovation, Synthetic Chorus, Harmonizer, Sampling Synthesis*

1. Introduction

Rajabhat Rajapakdi is a good model music composition that is perfectly characterized in all respects. The melody is well-crafted design; the lyric can be touching for Thai people with a profound meaning and evoked deep emotions. The composition for orchestra, its function required a combination of a large scale. Likewise, the Thai musical ensemble is the group that maintained by vocalists and instrumentalists. Certainly, it needs to be a fairly large group of artists, combined singers, and musicians. Such a demanding function, the required budget of expenses for the recording process, the recording facility, musicians, singers, sound engineer, mixdowns, mastering, making of commercial CD distributing process, and as well as the publication of the product must be well plan. Live performance needs a big audience and large space, whereby, several musicians, singers, actors, stage equipment, and musical instruments are required highly professional organizer.

In the reproduction of the Rajabhat Rajapakdi to be an innovative new soundscape, the researcher believes that high-quality music has its value and must be publicized in order to maximize and educate listeners. More importantly, the music must be frequently published or on-air to maintain public attention, and make them acquainted to the tune and melody, also being inspired by the meaning of the lyric. (Niessen, Cance & Dubois, 2010: 10). Despite the fact that it is noteworthy that the music has a rare chance to make live performed on stage; the opportunity for public appearance is also rare due to the high cost and the challenge with the musicians of the ensemble.

Current cinema soundtracks are often simplified songs by using a few musical instruments, and the applying of technology to enhance music production (Neumeyer, 2014: 40). The soundtrack of today's movie is, therefore, becoming more and more popular among the new generation listeners. Soundtrack songs are accessible and easy to listen. Furthermore, it can attract an audience when having live performance.



The researcher appreciates how crucial was the Rajabhat Rajapakdi tune, therefore, the rearranging concept of the song made it to be in a Thai Contemporary Music format by using modern music technology to enhance the musical value. Meanwhile, Thai contemporary music also integrated the melody, tonal, and/or voice in a Thai singing expression, regardless of what musical instruments are used in the production (Premananda, 1994: 4). The ultimate goal of the research was to preserve the musical heritage and expand the group of listeners among the new generations of music enthusiasts, and music lovers.

Music research and creative development expanded academic knowledge and education growth in the country. Contemporary music composition that implied modern music technology in creating a synthetic sound that mixed along with the original sound. A viable musical composition used only a few musical instruments whereby an applied of modern technology in music production to create an experimental approach of orchestral works (Chon, Huron & DeVlieger, 2017: 3-4). This new genre may be attracted to contemporary listeners and a new generation of popular music lovers. The music in this formatted aspect was more accessible and understandable to the listener. Hence, traditional music can become more touching and more motivated. The developing and arranging music from the traditional format to modern and popular figure can bring incorporated and exotic elements. Importantly, the approached production can reduce the organizing and assembly cost of ensembles, the quality of produce outcomes that are still faithful and well preserved as the original.

2. Objectives

1. To create an innovated soundscape approach and method of harmonic and orchestral theory.
2. To create a new music compositional model applying modern music technology;
3. To create a music production to benefit country education and financial investment.

3. Materials and Methods

The creative music and developmental research involved the innovation of harmonization and orchestration under the concept of tonal theory (Kostka, Payne & Almen, 2018: 14) to reinterpret the theme song 'Rajabhat Rajapakdi' to a synthetic chorus. The tonal theory or as known as tonality refers to the sense of the tonal center. According to Arndt (2020), tonality is the framework for perceiving, understanding, remembering, and responding to music. Tonality is the music that has tonic – that specific note on which music is the most stable and at rest. In general, tonal music has been working by establishing a tonic, moving away from it and then returning to it. Tonality is extremely widespread and visceral. Not being aware of tonality would be like not noticing that you have a body.

The tonality is mostly referred to as functional tonality (Arndt, 2020). The tonal concept includes five main factors working together to make sound likes a tonal center:

1. Accent (emphasis), especially: rhythmic accent, metric accent, dynamic accent, textural accent, registral accent and structural accent
2. Repetition, especially the repetition of accents
3. Stepwise approach, especially by half step
4. Being the root of an interval or chord, sounded melodically or harmonically
5. Being in a diatonic, pentatonic, or acoustic scale

The tonal music has a harmonic interval as consonance that creates distinctive sound appropriated to the different context of musical style (Kostka, Payne & Almen, 2018: 14). In this research, the functional of tonality—the sense of a tonic produced by harmonic function (tonic, predominant, and dominant) provides a framework for the recreation of music. With the capacity of tonal centric, a harmonic function is so effective that it can point out the tonic without ever sounding a tonic triad.

The musical composition that involved innovative musical technology to produce a variety of colorful sounds while retaining essential elements of the traditional presentation. The researcher intended to create a compositional model as a form of music for the modern movies that playing by a group of few musicians and singers in order to challenge the high investment budget, reducing the production costs, and management time consuming while producing an outcome of good quality products. In such a way it can be



considered as refreshing, interesting, and creative with the same or better experiences when comparing to the original format. Also, listening to new sounds can be intriguing to listeners – especially when it is capably accessible. Finally, the number and venues of performances can be widely arranged with this new genre.

There are various types of orchestras and the capabilities of the various instruments found in them. The orchestral methods depend on not only the focus of musical content but also marketing trends. The traditional way that many composers approach writing for orchestra is through the use of short score (Mckay & Mckay, 2005). The primary melodic and harmonic outline is summarized on a few staves for each instrument. In contemporary orchestration, computer software is integrated into composing/arranging. It's noted that software—a great aid to productivity, is not substituted for musicians talent nor working knowledge on musical notation and formatting (Miller, 2015). The integration of musician performance and musical software technology will provide a better solution for limit resources orchestration.

The method that the researcher used to reinterpret the 'Rajabhat Rajapakdi' theme is utilized music technology to create a synthetic, harmonic and orchestral soundscape of the new compositional model. Combination of musical composition and arrangement were utilized as suggested by Matthew Arndt (Arndt, 2020). The development of the theme song focus on vocal synthesis, intro verse, chorus log, synthesizer of choir, verse, male singer, and synthesis of all components. The integration of orchestration harmony in this research study includes:

Vocal synthesis techniques suggested by Perry R. Cook (Cook, 2007: 6-7) guided the creation of the reinterpretation of the "Rajabhat Rajapakdi."

Intro verse: The vocals by two singers are introduced to the add-on program called Harmonizer, whereby the program technical name is Izotope Nectar to enhance vocal quality. The researcher entered the MIDI data via keyboard to the add-on program. Having been assigned notes and chords to make the original singing track with only one voice while the one line produced a new sound channel according to the MIDI format applied. It is possible to enter a single note, double notes, or chords. In the adaptation of the composition, the researcher started from the beginning of the music with the wording "*Rajabhat's families from all over the Thai Kingdom*" respectively paid tribute to His Majesty the King in the chorus part before entering to the first verse.

Chorus Logs: The researcher used these specific techniques within both sections to present the choral harmony according to the chords applied.

In order to synthesize vocal part, the Synthesizer Vocoder Choir was achieved in supplementing program called Morphoder, in which the researcher entered the MIDI data into chordal harmony along with the chorus to Vocoder chord that is added texture and sound to this arrangement.

Verse A: As for the chorus of Verse A, all vocals were assigned to be sung in only one line. The harmonizing method (Makris, Karydis & Sioutas, 2016) which was the method to use of simultaneous pitches or chords accompanying a given melody. The harmonizing method was used to create the different types of harmonic structure, as the researcher had entered the MIDI data into the Izotope Nectar program.

Male singer: The recording used the same technique as for the female singer, i.e., to sing the last two chorus lines only.

Techniques for synthesis of musical instruments: For the piano sound, the researcher implied the simulated piano sounds of the authentic sounds on Yamaha model C7 Grand Piano, VST Plugins Vst Instrument type, which was a simulation the real piano sounds as in a supplementary program. This music can be installed via various programs. More importantly, the formatted system can also be used to perform in live music concert on stage via controlling system to computer and keyboard; a small controller can be more realistic display and effective sound effects.

The researcher also utilized the above piano sounds in composing the entire 'Rajabhat Rajapakdi' song by implementing the cinematic piano to create a large reverberation effect. That simulates ran the piano in a large, spacious place such as a concert hall or church. In Section A, the organizer put a delay effect into the piano sound to add texture in the differentiated stem of the chorus. The method of playing the melodic solo was shown in an octave similar to the method played by a xylophone.



Every sound stimulator in the song must be able to be played back as an actual instrument. Per contra, the intention to achieve a replica sound was by using fewer people, thus, the saving budget and production time consuming had to be well organized and managed.

The part of Thai music arrangement produced in a “heterophony form” which include the integration of 4 regional folk music from northern, southern, northeastern, and central Thailand. This heterophony composition allows the main melody to play differently in various instruments and creates a unique and exquisite integrated song, which also presented the musical presentation with an orchestra string sound played as a melody. Within the mixed chorus, male and female singers were accompanied by saxophone to provide a Thai stylistic accent. This is one of the techniques of composition that is popularly used in international music compositions worldwide to transform the sound of a Thai accent and, thus, making the song for being different from the original version in term of sound by the time that a Thai touch had been preserved.



Figure 1 Northern Thailand's tune



Figure 2 Southern Thailand's tune



Figure 3 Northeastern Thailand's tune



Figure 4 Central Thailand's tune



The plan and method of conducting creative research consisted of the following steps:

1. To define the main concepts of the creative research derived from the concept of tonal theory, film music, and modern music technology;
2. To determine the definition form of music using, Popular music; A: A: B (Verse: Verse: Chorus)
3. To study the related music, review literature of popular music, modern film and Thai music;
4. To create an arrangement to make the uniqueness by using technology, imaginative sound synthetic and combination of ethnic Thai melodies in the four regions from;
5. To determine the music instrumental genre such as piano, saxophone, chorus and solo singers;
6. To conduct the creative work in the recording studio with the synthetic chorus, orchestra and the other sound effect that had already been synchronized;
7. To modify, edit and mastering the recorded music in the control room;
8. To prepare for the research presentations, final report, and music concert.

Expected benefits of the research:

1. The discovery of an innovated soundscape approach and method of harmonic and orchestral Theory
2. A new music compositional model using modern music technology for synthetic chorus in the form of movie theme genre calling the Minimal Cinematic Orchestra
3. Educational music production and financial stability

4. Results and Discussion

This research on “Creative Music Research and Development: The Innovation of Harmonic and Orchestral Soundscape of The tonal theory on Rajabhat Rajapakdi Theme for Synthetic Chorus” was completed in accordance with the scope specified, namely, to reimagine a traditional musical composition in the form of contemporary music model. The process involved the modern technology to create musical synthesis as an important part in the arrangement using synthesized music genres blending between instrumentalist, chorus and synthesizing orchestra.

This project verified the concepts in Tonality, contemporary orchestration, and current music in movie industrial (Nuemeyer, 2014: 40). The process had created the new sounds that were entranced, imaginative as the unique whereby the experience that was distinct from traditional orchestration of the same song. This style of composition is becoming more popular at present, as it can be seen in nowadays modern music that utilized technology to help in music production. These formats are becoming more popular among the new generation of listeners, and it is gaining more attention in the research of creative music and development area similar to the analysis by Arndt (2018: 35) and Makris, Karydis & Sioutas (2016).

The researcher also found that the process of producing this type of musical composition can also be generated resulting in special benefits, unique results, and good value. Other benefits include helping to solve problems that may occur within traditional forms of work such as investment budget, the time required, and cost of recording music in the studio. Traditional performance in concert form entails needed a large number of artists and technicians which requires a high level of skills (Miller, 2015). While using synthetic instruments and computer technology, it can reduce the number of artists and technicians required, there're still other requirement that need to be taken into consideration and drawn attention to the installation of the sound system, for example the involvement of sound engineering experts who are experts, especially when trying to create a virtual-reality experience in a live performance.

This research showed that this adaptation can be accomplished. In addition to the findings method of music development, the researcher will also be able to produce a unique musical composition, having a wide range of distribution in the format of CD, media via social, media online, and at live performance concerts as well.



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for Synthetic Chorus

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$\text{♩} = 75$

Voice (female) 1

Voice (female) 2

Voice (male) 3

Voice (male) 4

Soprano sax.

PIANO

Harmonizing (Voice 1)

Harmonizing (Voice 2)

Harmonizing (Harmony Voice 1)

$\text{♩} = 75$

Synthesizer (Strings orchestra)

Synthesizer (STRING SOLO)

Synthesizer (STRING STAC)

Synthesizer (STRING EPIC)

Thai Percussion sampling (กลองใหญ่)

Thai Percussion sampling (ตะโพน)

Thai Percussion sampling (ฉิ่ง ฉาบ เบิ่งมว)

Figure 5 Synthetic chorus and orchestra

5. Conclusion

The creative research is an academic application for the performance of traditional Thai music which the use of modern music technology in reinterpreting and instigated composition form in combination with a synthetic chorus. The researcher's intention is hoping that the processes and findings from this research can be utilized as a guideline for researched advancing in music and modern technology. At a minimum, the result of the research can be approached within a new form of musical creativity that retained both in essence and aesthetics of the well-preserved originality. This approach can definitely help to promote and develop the music industry for the generations of the 21st century.



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