

Learning on Harmony in the Musical Work Aranti's Code

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Abstract

The musical work entitled Aranti's Code means dark power where humans have this power in a dark world. Humans are controlled by a system above the applicable regulations. The method used in the study is a qualitative descriptive method with a scientific approach in the form of music analysis. The work Aranti's Code is an instrumental work that uses improvisation in vocal form. The work Aranti's Code has tonal independence in modal harmony. This can be seen from the tone scale of the Universe Modal Scale. From the results of the study, it has the form of three complex parts or three large parts, namely Ak (A complex), Bk (B complex), Ck (C complex). The duration of the work Aranti's Code is 3 minutes 46 seconds. In the first part, it is played with polymodality, free time signature implemented in 15/8 and played with a moderate tempo, then there is a change with polytonality, free time signature implemented in 15/8 and the tempo becomes allegro, andante, and lento. Each part has a different structure, giving rise to tonal independence in the concept of combining jazz music (Muhammad Akbar, Evolution of Jazz Erucakra Mahameru- Neo Progressive Jazz: *Republika Daily* 2011). Meanwhile, the review of harmony in this musical work is viewed from four components, namely, chord progression, open harmony, closed harmony, cadence, and modulation where the visible harmonization is ambiguous harmony. From the results of this study, it can be seen that in this musical work, the ambiguous harmonic chord progression is dominated by polytonality and polymodality. This musical work uses three types of cadences, namely augment cadences, inserted cadences, and shortcut cadences, while the modulation in this work seems complicated.

Keywords: Compositional Works, Composers, Music Analysis, Polytonality & Polymodality

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INTRODUCTION

According to (Batubara, 2021), many artists are influenced by other people, the past, and also empirical experiences to express certain ideas through symbolism and form. As a precursor to creativity, it is helpful to understand that composers generally do not create something out of nothing when they write a new work. Instead, they create from either past or current experiences. The family originates from the marriage of two individuals who have different backgrounds and have the same goal. The term family is to define a unit of father, mother and children in one house. This is in accordance with the definition of family explained by the (Unesa ISBD Team, 2008) that family is the main life partnership and is experienced between a woman and a man who are bound by the ties of

marriage and love. Between the two allied beings there are essential elements, namely love, mutual dependence, mutual need and complementarity. Between the two of them, they give, ask and make sacrifices, are loyal and complement each other according to their respective roles. In the family, the birth of children will strengthen the marriage bond. Every family wants their family to run harmoniously. Harmonious in the KBBI means harmony.

However, achieving it is not easy and requires struggle. This is explained through the opinion of (Qaimi, 2002) that a harmonious family is a family full of calm, tranquility, affection, descendants and continuity of generations of society, compassion and sacrifice, complementing and perfecting each other, as well as helping each other and working together. From the phenomena that are currently occurring, the author relates it to the life that the author feels because he has a harmonious family, even though in this world there is no perfect family, with various conflicts and differences of opinion that do not cause significant problems, it makes the author feel lucky to be born in a family that full of love and intact until now. On this occasion, the author created a musical work which is an expression of the author's heart, namely telling a story about the author's experience in a family that is harmonious (Holdsworth, 1992), full of love and peace, taking the perspective of an immigrant child who really loves and misses his family. The creation of this musical work is realized through the movement of melody, rhythm, tempo, dynamics and harmony. The focus of this writing is a review of the harmony in the musical work "Aranti's Code". Music is a science or field of art in the form of sounds or sounds combined in a sequence that has elements of rhythm, melody and harmony, which can describe the feelings of the creator, especially in the emotional aspect. The reality is that currently there has not been a clear definition of what is actually called music (Harpang, 2017) . In this musical work, the author created a composition in three parts, with the following scheme: || A complex || B complex || C complex || which also describes (Pease, 2003) Through-Composed compositional pattern or form without repetition. This piece is an instrumental piece of music with vocals. The storyline is marked by the playing of musical instruments from the movement of the melody with the lyrics sung by one of the musicians.

Harmony is harmony; beauty. With this fact, knowledge of harmony will be formed in two possibilities: in harmony or not in harmony; beautiful or not beautiful. All of this is discussed in the science of musical harmony (Banoë, 2003). The following is a form of harmonic arrangement reviewed by the author. Open Harmony is an open form of arrangement so that among the existing tones it is still possible to present harmonious tones or tones that match the chords (Yulianto, 2014). The aim of establishing open harmony is to create a more majestic, spacious and wide atmosphere. Meanwhile, Closed Harmony is a harmonious arrangement of four voices in a closed form, meaning that among the existing tones it is no longer possible to present harmonious tones. Or there is very little possibility of inserting harmonious tones between the four existing tones (Yulianto, 2014). A chord is a combination of several tones sounded simultaneously consisting of at least 3 tones (Banoë, 2003).

The Research Objectives

The objectives, background and novelty of this research are:

1. Alleviating doubts of ambiguity- "curiosity that continuously grows from doubts" (Freire, 1970) upon the novelty of Universe Harmony;
2. The awareness of composer facing the challenge of Disruptive Innovation (Christensen, 1997) and Evolutionary Economics (Veblen, 1899) to gain peace.
3. New perspective of polytonality and polymodality system (modal scale independency) (Johnson, 1994)

Theoretical Framework

A. Chords

Chords can be played intermittently or simultaneously. These chords are used to accompany a song, there are many kinds of chords, including major chords, minor chords, septime dominant chords, diminished chords, augmented chords, minor 6 chords, major 7 chords, suspended chords and many others (Sarjoko, 2017) . In this piece of music, the author uses chord types such as major and minor. Cadence is the movement of moving chords in a composition, in relation to the impression it creates. There are several names for it, including: Perfect Cadence (V – I chords), Imperfect Cadence (IV), Short Cadence (IV-I), Insertion Cadence (V-VI), Augment Cadence (I- III) (Russel, 2001), Feminine Cadence (strong-weak) (Soeharto,1992: 60). Of the several types of cadences explained above, the author uses cadences such as augment cadences, insert cadences, and shortcut or brief cadences.

B. Overview of Aranti's Code Notation

As a general reference to the || pattern A Complex || A1 Aranti's Code composition (see: figure 1.), the composer uses notes from the chord A⁽¹¹⁾ - 11 as the eleventh note interval from the root of A and 3 as the third note interval from the root of A, where on one side of the chord

referred to above functions as a melody (Chord Melody) and on the other hand as a chord developed from the F tonality as a pedal point/leading tone F Lydian Altered mode (F Lydian Alt.) which became the basis for the composer's discovery as F Lydian Universe with a 15/8 syllable marking system. The composer's invention or novelty music genre was claimed and recorded as the Neo Progressive Jazz genre (Mahameru et al., 2023) (see: figure 29.). Furthermore, Aranti's Code has a symbol or code of rhythmic motive energy where the composer creates and initiates his creative ideas through a manuscript or story script which he finds as a sound script (see: image 6.) to make Aranti's complete work Code. The composer's initial idea for the sound script in question was also an excerpt from a collection of the composer's episodic works entitled Marathon Journey (Mahameru, 1996) .The sound script was developed by the composer as a concept creation of new chord such as A⁽¹¹⁾ , B⁽¹¹⁾ , A^{b(11)} , B⁽¹¹⁾ , D⁽¹¹⁾ , E⁽¹¹⁾ , and D^{b(11)} (see: figure 5.)

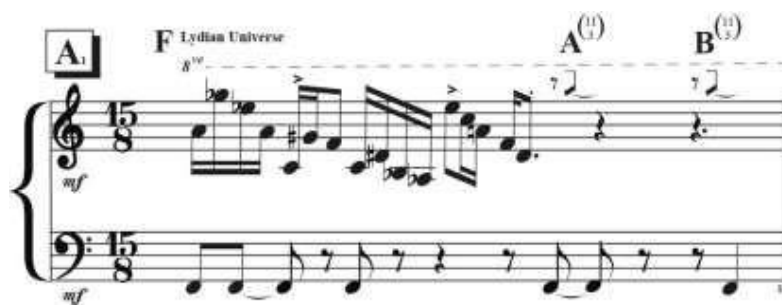


Fig 1. Development of a number of A⁽¹¹⁾ dan B⁽¹¹⁾ chord through the pedal/leading tone F Lydian Universe and the dominance of the Polytonality scale structure

(source: Mahameru, E. (2009). *Aranti's Code*. Ingrooves (Universal Music Group)/ Spotify. <https://open.spotify.com/track/0GcmvT1zbryNWwGQIFdFhW>)

Then in the pattern || A Complex || A2 Aranti's Code composition (see: figure 2.), the composer uses notes from the A⁽¹¹⁾ where 11 is the eleventh note interval from the root of A and 3 is the third note interval from the root of A, where on the one hand the chords referred to above function as a melody (Chord Melody) and on the other hand as a chord developed from the F tonality as the pedal point/leading tone of the F Lydian Alt. mode. with a 15/8 syllable marking system, the composer's invention or novelty music genre is claimed and recorded as the Neo Progressive Jazz genre (Mahameru et al., 2023) (see: figure 29.).

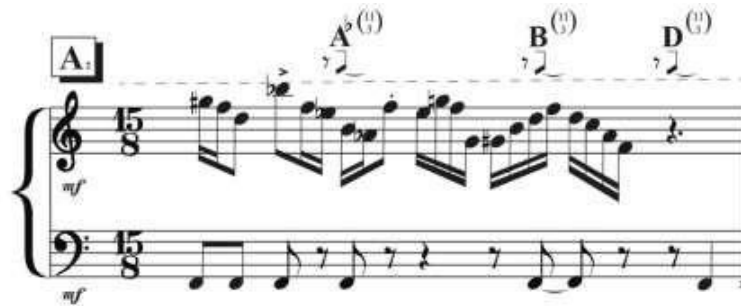


Fig 2. Development of a number of chords $A^{b(3)}$, $B^{(3)}$ dan $D^{(3)}$ through the F Lydian Universe pedal/leading tone and the dominance of the Polytonality scale structure (source: Mahameru, E. (2009). *Aranti's Code*. Ingrooves (Universal Music Group)/ Spotify. <https://open.spotify.com/track/0GcmvT1zbryNWwGQIFdFhW>)

Furthermore, in the A Complex A2 form (see: figure 2.) the composer places the $A^{b(3)}$ chord as the main symbol or code of the Aranti's Code composition in describing scene or sound script (see: figure 6.) the story of the film Aranti's Code where note (3) is the third scale interval from the root of $A^{b(3)}$ and note (11) is the eleventh scale interval (11) from the root of $A^{b(3)}$, then the B chord where note (3) is the third scale interval from the root of B and note (11) is the interval of the eleventh scale (11) from the root of B then chord D where note (3) is the third scale interval from the root of D and note (11) is the eleventh scale interval (11) from the root of D.

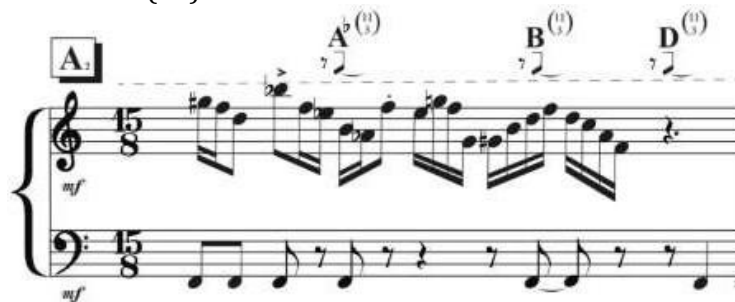


Fig 3. Development of a number of $A^{b(3)}$, $B^{(3)}$ and $D^{(3)}$ chord through the F Lydian Universe pedal/leading tone and the dominance of the Polytonality scale structure (source: Mahameru, E. (2009). *Aranti's Code*. Ingrooves (Universal Music Group)/ Spotify. <https://open.spotify.com/track/0GcmvT1zbryNWwGQIFdFhW>)

Also in the A Complex A3 form (see: figure 4.) the composer uses the $E^{(3)}$ chord as the main symbol or code of the Aranti's Code composition in describing the sound script scene (see: figure 6.) the story of the film Aranti's Code where note (3) is a scale interval third from the root of $E^{(3)}$ and note (11) is the eleventh scale interval (11) from the root of $E^{(3)}$, then the $D^{b(3)}$ chord where note (3) is the third scale interval from the root of $D^{b(3)}$ and note (11) is the interval the eleventh (11th) scale from the root $D^{b(3)}$.



Fig 4. Development of a number of $E^{(3)}$ and $D^{b(3)}$ chord through the F Lydian Universe pedal/leading tone and the dominance of the Polytonality scale structure

(source: Mahameru, E. (2009). *Aranti's Code*. Ingrooves (Universal Music Group)/ Spotify. <https://open.spotify.com/track/0GcmvT1zbryNWwGQIFdFhW>)

Aranti's Code

by Erucakra Mahameru

Medium
Neo Progressive Jazz
(Intro in D)
Guitar/ Sax Synth

A₁ **F** Lydian Universe **A⁽⁹⁾** **B⁽⁹⁾**

A₁ **A⁽⁹⁾** **B⁽⁹⁾** **D⁽⁹⁾**

A₁ **E⁽⁹⁾** **D⁽⁹⁾**

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The image displays three musical staves for the piece 'F Lydian Universe' in 15/8 time, marked *mf*. Each staff is divided into two systems by a dashed line.

- Form A:** Labeled 'Guitar Solo'. The upper staff contains a whole note chord, and the lower staff contains a rhythmic pattern of eighth notes.
- Form B:** Labeled '16th Note Grouping Solo Form'. The upper staff contains a thick black bar with the text '(16th note grouping Quintuplets/ Septuplets polyrhythmically played against the 15/8 odd meter)'. The lower staff contains the same rhythmic pattern as in Form A.
- Form C:** Labeled 'Vocal Solo Pedal Form'. The upper staff contains a thick black bar with the text '(Vocal Solo Pedal set to develop Through-Composed Complex Song Form)'. The lower staff contains the same rhythmic pattern as in Form A.

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Fig 5. Cadence I-III (Bar 1) through the arrangement of chord progressions seen in the Intro section and bars 1-4 notation composition of Aranti's Code) (source: Mahameru, E. (2009).

Aranti's Code. Ingrooves (Universal Music Group)/ Spotify.
<https://open.spotify.com/track/OGcmvT1zbryNWwGQIFdFhW>

C. Modulation

Modulation is a shift in the basic tone in a composition, whether temporary or permanent (Soeharto, 1992). Modulation functions as a transition bridge from one scale to another (In this musical work, there is a modulation as a variation in the arrangement of the work so that it does not seem monotonous), as well as a transition in the atmosphere desired by the author. In this work, the author uses several techniques for playing musical instruments such as: Accents, stress.

D. Instrument Playing Techniques/Technology

How to play by giving accentuation (emphasis) on certain notes or notes (Banoë, 2023). This technique/technology is chosen to provide a certain emphasis on notes that require emphasis. Legato (velocity of pressure), a musical term for a delivery that requires

the notes to be sung in one flow (Prier, SJ., 2014) . Staccato technique/technology is used to strengthen the beat of certain melodies. Tremolo (LFO: Low Frequency Oscillator) (Noyes, 1988), vibrating, moving, how to play by vibrating notes; roffel strokes and double strokes on drums; friction in going back and forth at certain note positions at high speed (Banoe, 2003). This technique/technology was chosen to add variety to the technique while strengthening the atmosphere at the song's climax. The choice of musical instruments in this musical work is adjusted to the needs of the composition written by the composer.

The following are the musical instruments that have been chosen by the composer: (1) Melody Guitar; (2) Synthesizer; (3) Drums; (4) Bass Guitar; (5) Vocals. The exploration started from the initial stimulus, namely through phenomena and orchestral musical works that the author saw and then explored them in the musical work "Aranti's Code". Based on the science of musical form, the author begins to identify musical structures starting from melody, rhythm, harmony, tempo, dynamics, harmony and adapts it to the science of musical form. The writer conveys the work material in several stages. First, distribute the finished sheet music to the players based on the instruments used a few days before the practice process begins. Second, provide an explanation to the players regarding the concept of this musical work. Third, carrying out the rehearsal process together, led by conductor or orchestralist (Pease, 1992). The training process is carried out regularly and on a schedule to get maximum results on each training schedule.

METHOD

This research uses qualitative research methods, which attempt to construct reality and understand its meaning. This social reality is an effort to realize the meaning of the composition work "Aranti's Code". In qualitative research methods, researchers explore and analyze data ethically to find descriptions of the culture of family life and humans created like 'robots' and empirically to explore the knowledge and experiences of musicians and composers when using electronic music as a medium for building social harmony and peace (Batubara, 2020). The main theory used in this analysis is ethnomusicology. Hastanto explained the principle of ethnomusicology that in managing and interpreting data, such as musical events, feelings of musical actors, physical objects used, sets of values, and so on, always use the cultural lens and habits carried out in the cultured society that owns the music (Hastanto, 2009). Thus, the data and analysis of this research relate to the existence of the composition work "Aranti's Code", its meaning and characteristics, musical events when this music is used as a medium for building social harmony, the cultural context of family life and the set of values communicated through jazz music to create social harmony. between society in conflict with its existence and the rules that apply.

Data collection techniques used include; (a) In-depth interviews with resource persons, namely composers, musicians (b) Observations of the composition "Aranti's Code"; (c) Questionnaires are used to collect data on perceptions of music study program students. The data analysis technique used is an interactive analysis model. The procedures used are (1) data collection (focusing the data collection); (2) data reduction (analysis during data collection, within site and cross site analysis); (3) data presentation (matrix displays some general suggestions); and (4) drawing and verifying conclusions (Batubara et al., 2023).

RESULTS AND DISCUSSION

The chord progression in the Aranti's Code composition orbits the leading tone or drone F Lydian Universe (see: figure 5.) with a Polyrhythms function on 15/8 chords through the arrangement of chord structures A^(♯), B^(♯), A^b(♯), B^(♯), D^(♯), E^(♯), and D^b(♯) (see:

figure 1,2 and 3.) which was developed from the F Lydian Universe modal scale (see: figure 8.) and is a symbol or Code from the film storyline or Aranti's Code sound script which is based on the episode of composer's work entitled Marathon Journey (see: figure 6.)

In Open Harmony the composer uses the Polytonality approach or method (Multi-Tonic system) which is also known as Intervallic Melody relates to the chord scale function (Chord Scale) (Pease, 2003) in the chords of A^(♯), B^(♯), A^b (♯), B^(♯), D^(♯), E^(♯), and D^b (♯) in the Aranti's Code composition- where the motive energy rhythm is mentioned or found by the composer to really dominate the series of performance or presentation of sounds and sounds of the Polytonality scales referred to the above (see: figure 5.).

In Closed Harmony the composer uses the functions of Cluster Chords or Melodic Chords such as A^(♯), B^(♯), A^b (♯), B^(♯), D^(♯), E^(♯), and D^b (♯) Polymodality which applies first of all as an independent harmony finding which also functions in determining theoretical patterns and sub-patterns new compositions in highlighting differences the character of a particular situation or situation with a special application through the Through-Composed composition method or theory (without repetition) (Pease, 2003). (see: figure 27.)

Augment Cadences are referred to as Imperfect Cadences which are more about a number of tonality functions such as in a number of Extended Dominant Chords or Cadence analysis functions in a number of Dominant Chords for example: I⁷ (♯), II⁷ (♯), III⁷ (♯), bIII⁷ (♯), #IV⁷ (♯), VI⁷ (♯), bVI⁷ (♯), VII⁷ (♯). This Augment Cadence also tends to be used in permutations of the Synthetic Modal Scale (Johnson, 1994) which was discovered by composer through the theory of Advanced Modal Harmony (Johnson, 1994). Meanwhile Plagal Cadence uses harmonic resolution IV-I was also used by the composer on development of B^(♯) chord cadence resolution towards tonality or polytonality (Johnson, 1994) F Lydian Universe mode in the harmony analysis function #IV⁷ (♯)- I⁷ (♯) or B⁷ (♯)-F⁷ (♯) Aranti's Code composition (see figure 5.)

Sound script is a theory or method of screenwriting (Heimbuch, 2017) in the Hollywood film industry which is used by composers in determining the novelty (next finding) for the musical work Aranti's Code in order to interpret the meaning of moving visuals in sound format to access users of the Hollywood film industry in the United States and other regions in the world.

As seen in figure 6, with the standard Courier font (*Is There a Standard Screenplay Font?*, n.d.), the initial line of writing the Aranti's Code sound script uses text (INT.) which illustrates the state or atmosphere of the sound that you want to explain to the listener as an internal situation (in the room) followed by the placement of chapter title and duration indicators in minutes, seconds and frames (min: sec: frame). The first line of the sound script closes with text (-NIGHT) which describes the situation of sound and sound play activities at night. Furthermore, in the second line, identified with the MUSIC CUE text, it informs the musical work Aranti's Code by describing the theory of subchapters, excerpts and Opus (abbreviated: Op.) which are commonly used in a number of classical music works composed by Bach, Beethoven, Mozart and others. And in the third line of the sound script the composer places the name of the creator and publisher. As a closing sequel to the Intro in the fourth line, the composer describes the action script (Grossman, 2006) which plays a sound that describes the action of a detachment team carrying out an ambush on a number of criminals.

The writing of the Aranti's Code sound script was closed in SEQUEL 2 (see: figure 6.) with the same procedural sequence that has been fully described by the composer in the initial explanation above.

ARANTI' S CODE

Sound Script by Erucakra Mahameru

INT. ARANTI' S CODE INTRO 1: The Voice (00min:19sec)-NIGHT

MUSIC CUE: "Aranti's Code (Interceptor, Op.1)"

by Erucakra Mahameru (WEM USA/ASCAP)

City Police Chopper Squad/ engine ignited in the entrance

INT. ARANTI' S CODE SEQUEL 2: The Capture (01min:41sec)-NIGHT

MUSIC CUE: "Aranti's Code (The Capture, Op.2)"

by Erucakra Mahameru (WEM USA/ASCAP)

Police squads intercepting target villains

Fig. 6. Aranti's Code sound script © 2009 Marathon Journey Music (source: Mahameru, E. (2009). *Aranti's Code*. Ingrooves (Universal Music Group)/ Spotify. <https://open.spotify.com/track/0GcmvT1zbryNWwGQIFdFhW>)

In a special study of harmony in the musical work Aranti's Code, the leading note F is a mode of polymodality (Johnson, 1994) and polytonality (Johnson, 1994) which the composer calls F Lydian Universe (Russell, 2001). In more detail, the composer also combines three main modes, namely F Super Locrian mode (Degree VII of the G Melodic Minor scale is known as the $F^{7\text{Alt}}$ chord), F Lydian mode ($F^{\text{Maj}7(\sharp 11)}$) and F Mixolydian mode (F7) (see: Table 7)

Table 7. F Lydian Alt. Modal Scale formed through Polymodality domination (source: Russell, 2001)

F Lydian Alt. Polymodality (see: figure 8.)		
F Mixolydian (see: figure 9.)	F Super Locrian (see: figure 10.)	F Lydian (see: figure 11.)
Chord Type (F^7) and Note Extension (Tension)	Chord Type ($F^{7\text{Alt}}$) and Note Extension (Tension)	Chord Type ($F^{\text{Maj}7(\sharp 11)}$) and Note Extension (Tension)
$F^{7(9)}$ $F^{7(11)}$ $F^{7(13)}$	$F^{7(9)}$ $F^{7(\sharp 9)}$ $F^{7(\sharp 11)}$ $F^{7(13)}$	$F^{\text{Maj}7(\sharp 11)}$ $F^{(11)}$ $F^{(13)}$

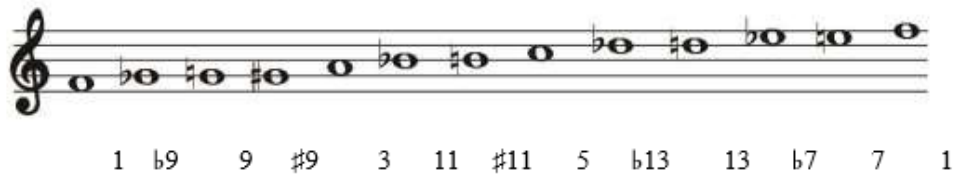
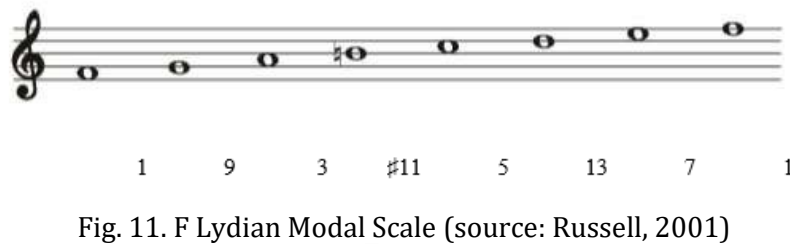
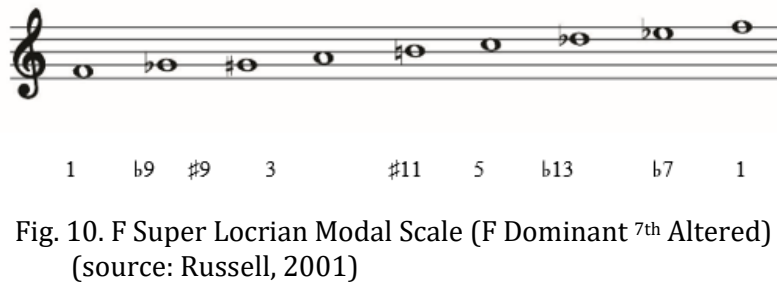
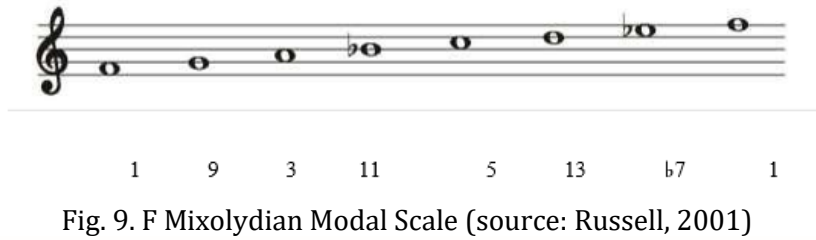


Fig 8. F Lydian Alt. Modal Scale (Lydian Universe) (source: Mahameru, 2019)



Aranti's Code Rhythmic Energy Motive Graphical Analysis

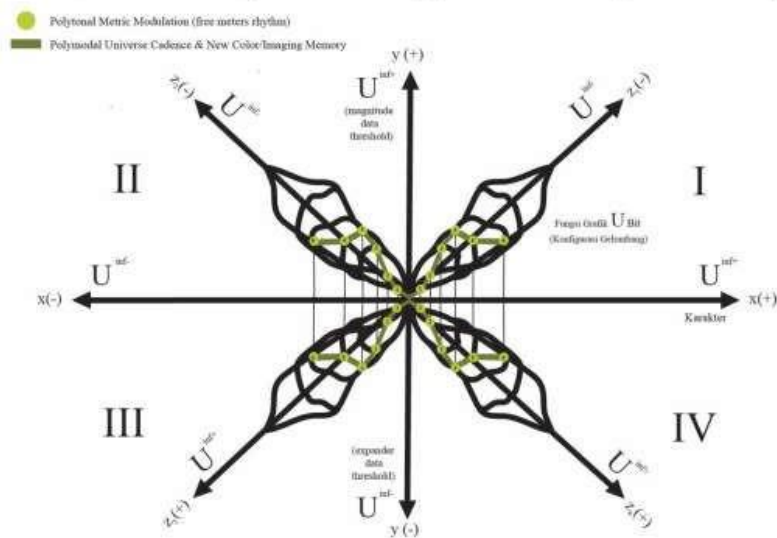


Fig. 12. UNESCO WAN IFRA World Award-Winning U-IMAGING Quality Statistics: a number of sample responses to Polytonality and Polymodality input obtained from students of the UHN FBS music study program (source: Mahameru, 2019)

Brief description of Aranti's Code Rhythmic Energy Motive Harmony Analysis Graph using successful results of constant variables U^{inf+} and U^{inf-} ;

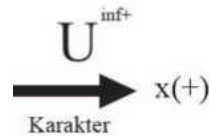


Fig. 13. Detailed description of Motive Energy Rhythm Graphic Analysis (source: Mahameru, 2019)

The x (+) axis describes the system for measuring changes in the position of space dimensions and the direction of acceleration/speed (velocity) (Roland, 2023). Variable U^{inf+} modal scale polytonality and polymodality (Johnson, 1994) as parameters (Hoge, 1992) of the new harmony of the Universe tone scale.



Fig. 14. Detailed description of Motive Energy Rhythm Graphic Analysis (source: Mahameru, 2019)

The x-axis (-) describes the system for measuring changes in the position of space dimensions and direction of acceleration/velocity (Roland, 2023). Independent harmonic power or Universe (Hastings, n.d.) is symbolized as magnitude/expander (Behringer, 1989) (lower threshold. variable U^{inf-} modal scale polytonality and polymodality (Johnson, 1994) as parameters (Hoge, 1992) of the new harmony of the Universe tone scale.

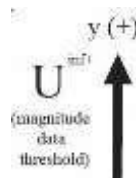


Fig. 15. Detailed description of Motive Energy Rhythm Graphic Analysis (source: Mahameru, 2019)

The y-axis (+) describes the system for measuring changes in the position of space dimensions and the direction of acceleration/velocity (Roland, 2023). Independent harmonic power or Universe (Hastings, n.d.) is symbolized as magnitude/expander (Behringer, 1989) upper threshold. variable U^{inf+} modal scale polytonality and polymodality (Johnson, 1994) as parameters (Hoge, 1992) of the new harmony of the Universe tone scale.



Fig. 16. Detailed description of Motive Energy Rhythm Graphic Analysis (source: Mahameru, 2019)

The y-axis (-) describes the system for measuring changes in the position of space dimensions and direction of acceleration/velocity (Roland, 2023). Independent harmonic power or Universe (Hastings, n.d.) is symbolized as magnitude/expander (Behringer, 1989) lower threshold. variable U^{inf} - modal scale polytonality and polymodality (Johnson, 1994) as parameters (Hoge, 1992) of the new harmony of the Universe tone scale.



Fig. 17. Detailed description of Motive Energy Rhythm Graphic Analysis (source: Mahameru, 2019)

The z (-) axis describes the system for measuring changes in the position of space dimensions and direction of acceleration/velocity (Roland, 2023). Independent harmonic power or Universe (Hastings, n.d.) is symbolized as magnitude/expander (Behringer, 1989) lower threshold. variable U^{inf} - modal scale polytonality and polymodality (Johnson, 1994) as parameters (Hoge, 1992) of the new harmony of the Universe tone scale.



Fig. 18. Detailed description of Motive Energy Rhythm Graphic Analysis (source: Mahameru, 2019)

The light green round sign on the motive energy rhythm graph function of quadrant I (see: figure 12.) illustrates the probability or statistical quality of the metric modulation dimension (free meter/polymeter) of the dominance of the polytonality system. Where is the dark green color line vector sign on the rhythm energy motive graph function (see: figure 12.) illustrates the probability or statistical quality of the metric modulation dimension (free meter/polymeter) the dominance of polymodality systems and more/imperfect cadence dynamics (augment cadence).



Fig. 19. Detailed description of Motive Energy Rhythm Graphic Analysis (source: Mahameru, 2019)

The z_2 (-) axis describes system for measuring changes in the position of space dimensions and direction of acceleration/velocity (Roland, 2023). The Independent Universe harmony (Hastings, n.d.) is symbolized as magnitude/expander (Behringer, 1989) lower threshold. Variable U^{inf} - modal scale polytonality and polymodality (Johnson, 1994) as parameters (Hoge, 1992) of the new harmony of the Universe modal scale.



Fig. 20. Detailed description of Motive Energy Rhythm Graphic Analysis (source: Mahameru, 2019)

The light green round sign on the graphical function of the motive energy rhythm quadrant II (see: Figure 12.) illustrates the probability or statistical quality of the metric modulation dimension (free meter/polymeter) of the dominance of the polytonality system. Where the dark green line vector sign on the rhythm energy motive graphical function (see: figure 12.) illustrates the probability or quality statistics of the metric modulation dimension (free meter/polymeter), the dominance of the polymodality system and the dynamics of augmented cadences or more/imperfect cadences.



Fig. 21. Detailed description of Motive Energy Rhythm Graphic Analysis
(source: Mahameru, 2019)

The z_3 axis (+) describes the system for measuring changes in spatial dimensions and direction acceleration/speed (velocity) (Roland, 2023) independent harmonic power or Universe (Hastings, n.d.) symbolized as magnitude/expander (Behringer, 1989) upper threshold variable U^{inf+} modal scales polytonality and polymodality (Johnson, 1994) as parameters (Hoge, 1992) new Universe tone scale harmony.



Fig. 22. Detailed description of Motive Energy Rhythm Graphic Analysis
(source: Mahameru, 2019)

The light green round sign on the function graph of the motive energy rhythm quadrant III (see: figure 12.) illustrates the probability or statistical quality of the metric modulation dimension (free meter/polymeter) of the dominance of the polytonality system. Where the dark green line vector sign on the rhythm energy motive graph function (see: figure 12.) illustrates the probability or quality statistics of the metric modulation dimension (free meter/polymeter), the dominance of the polymodality system and the dynamics of augmented cadences or more imperfect cadences.



Fig. 23. Detailed description of Motive Energy Rhythm Graphic Analysis
(source: Mahameru, 2019)

The z_4 (+) axis describes the system for measuring changes in the position of space dimensions and direction of acceleration/speed (velocity) (Roland, 2023) variables of U^{inf+} modal scale polytonality and polymodality (Johnson, 1994) as parameters (Hoge, 1992) of the new harmony of the Universe tone scale.



Fig. 24. Detailed description of Motive Energy Rhythm Graphic Analysis
(source: Mahameru, 2019)

The light green round sign on the graphical function of the motive energy rhythm quadrant IV (see: figure 12.) illustrates the probability or statistical quality of the metric modulation dimension (free meter/polymeter) of the dominance of the polytonality system. Where the dark green line vector sign on the rhythm energy motive graphical function (see: figure 12.) illustrates the probability or statistical quality of the metric modulation dimension (free meter/polymeter), the dominance of the polymodality system and the dynamics of augmented cadences or more/imperfect cadences.

DISCUSSION

1. Specific Validation Information for the Aranti's Code Musical Research Questionnaire.

The conversion of the empirical research questionnaire (see: table 24.) was distributed and used ethically for the purpose of obtaining validation of interpretation responses where the composer re-listened to the Aranti's Code musical work to a number of FBS music study program students HKBP Nommensen University, Medan, music arts study program, Ensemble/Fusion Music Presentation and Jazz Chordal Improvisation courses during the Mid-Semester Examination (UTS), Final Semester Examination (UAS) and Final Project. The exam questions which are the basis of input data are the implementation of Polytonality, Polymodality/Polyrhythms theory and methods.

Next, the input data mentioned above is processed and analyzed into the U-IMAGING Quality Statistics instrument table (see: Table 25.) by means of;

- a. Determine the upper threshold value of the U^{inf+} variable and the lower limit (lower threshold) variable U^{inf-} according to the assessment system indicators determined by the Faculty of Languages and Arts, HKBP Nommensen University.
- b. Identify and finalize the message from each respondent with the initials by assessing the new experience (character) and independence of each respondent - specifically symbolized as k_{Xn} (see: table 8)

2. U-IMAGING Quality Statistics Respondent Questionnaire

Table 8. Table of respondents implementation of independence and new experiences
(source: Mahameru, 2019)

Test 1&2. Period Integration (Mid Test, Final Test and Final Project)						
No	Respondent	Status	Indicator	U^{inf+} (Upper limit)	U^{inf-} (Lower limit)	Message
1	TS1	Direct	Determined	100	-	k_{X1}
2	AS2	Direct	Determined	-	90	k_{X2}
3	AG3	Direct	Determined	-	90	k_{X3}
4	RS4	Direct	Determined	100	-	k_{X4}

Test 1&2. Period Integration (Mid Test, Final Test and Final Project)						
No	Respondent	Status	Indicator	U^{inf+} (Upper limit)	U^{inf-} (Lower limit)	Message
5	OS5	Direct	Determined	100	-	k _{X5}
6	IS6	Direct	Determined	100	-	k _{X6}
7	AM7	Direct	Determined	-	93	k _{X7}
8	NS8	Direct	Determined	100	-	k _{X8}

3. Review of Ambiguous Harmony and the Dominance of Polytonality and Polymodality

The ambiguity of the harmony created by the composition of the third and eleventh scale intervals from a number of root notes in the Clusters of A^(♯), B^(♯), A^{b(♯)}, B^(♯), D^(♯), E^(♯), and D^{b(♯)} chord (see figure 27.) on the function of the F Lydian Universe pedal through signs. The 15/8-time signature gives the composer a new understanding of the natural form of freedom and independence in interpreting the birth of new harmonic functions which can be summed up as harmony and the scale of the Universe modal scale. The limitations (see figures 20., 21., 22., 23.) which appear as determinations in the dominance of Polytonality and Polymodality also increasingly prove the truth of the existence of third dimensional harmony, namely Universal Harmony from the great integration of open/closed harmony theory in general and closed harmonies in particular.

Aranti's Code

by Erucahra Mahameru

Medium
Neo Progressive Jazz
(Intro in D)
Guitar/ Sax Synth



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Figure 26. Development of a number of chords through the pedal/leading tone F Lydian Universe and the dominance of the Intervallic Polytonality melody scale structure (source: Mahameru, E. (2009). *Aranti's Code*. Ingrooves (Universal Music Group)/ Spotify. <https://open.spotify.com/track/0GcmvT1zbryNWwGQIFdFhW>)

Aranti's Code

by Erucakra Mahameru

Medium
Neo Progressive Jazz
(Intro in D)
Guitar/ Sax Synth

F (Lydian Universe) A⁽¹⁾ B⁽¹⁾

A⁽¹⁾ B⁽¹⁾ D⁽¹⁾

A⁽¹⁾ D⁽¹⁾

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Fig. 27. || A Complex || B Complex || C Complex || Through-Composed Patterns/Forms with cluster chords in Aranti's Code composition (source: Mahameru, E. (2009). *Aranti's Code*. Ingrooves (Universal Music Group)/ Spotify. <https://open.spotify.com/track/0GcmvT1zbryNWwGQIFdFhW>)

The image shows three sections of a musical score for 'F Lydian Universe' in 15/8 time. Each section consists of a grand staff with a treble and bass clef. Section A is labeled 'Guitar Solo' and shows a melody in the treble clef and a bass line in the bass clef. Section B is labeled '16th Note Grouping Solo Form' and includes a note in the treble clef with a thick black bar over it, indicating a polyrhythmic solo. Section C is labeled 'Vocal Solo Pedal Form' and also includes a note in the treble clef with a thick black bar over it, indicating a vocal solo pedal. The bass line is consistent across all sections, featuring a sequence of eighth and sixteenth notes.

Fig. 28. Through-Composed Symmetrical Chord Progression A⁽⁴⁾, B⁽⁴⁾, A^{b(4)}, B⁽⁴⁾, D⁽⁴⁾, E⁽⁴⁾, D^{b(4)}/ F Lydian Universe. (source: Mahameru, E. (2009). *Aranti's Code*. Ingrooves (Universal Music Group)/ Spotify. <https://open.spotify.com/track/0GcmvT1zbryNWwGQlFdFhW>)

CONCLUSION

The chord progression in the Aranti's Code composition orbits the leading tone or drone, namely in F Lydian Universe mode. The function of the F Lydian Universe mode is as Polyrhythms with a 15/8 magnitude. Through the arrangement of chord structures that researchers found, namely A⁽⁴⁾, B⁽⁴⁾, A^{b(4)}, B⁽⁴⁾, D⁽⁴⁾, E⁽⁴⁾, and D^{b(4)}, which were developed from the F Lydian Universe mode. This is also a symbol or code from the film storyline or sound script of Aranti's Code (Mahameru, 2009) which is based on an episode by the composer entitled Marathon Journey.

In Open Harmony in the work Aranti's Code, the composer uses the Polytonality approach or method (Multi-Tonic system)(Johnson, 1994) which is also known as Intervallic Melody. Where this interval is related to the chord scale function (Chord Scale). Intervallic Melody is found in the chords A⁽⁴⁾, B⁽⁴⁾, A^{b(4)}, B⁽⁴⁾, D⁽⁴⁾, E⁽⁴⁾, and D^{b(4)}. Researchers discovered a rhythm where this rhythm was given the term 'motive energy'.

The composer said that this rhythm really dominates the sounds produced in Aranti's Code so that the resulting form of performance/presentation almost resembles a Polytonality scale. In the work Aranti's Code there are closed harmonies which the composer uses

Cluster chords functions or chord melody such as A⁽⁴⁾, B⁽⁴⁾, A^b(⁴), B⁽⁴⁾, D⁽⁴⁾, E⁽⁴⁾, and D^b(⁴). This closed harmony is Polymodality which applies to determining patterns and sub-patterns in the work of Aranti's Code. Composers are able to create differences in the character of certain situations or circumstances with special applications through the Through-Composed (Pease, 2003) method. This is done by the composer without repetition.

The ambiguity of the harmony created by the composition of the third and eleventh scale intervals from a number of root notes in the cluster chords A⁽⁴⁾, B⁽⁴⁾, A^b(⁴), B⁽⁴⁾, D⁽⁴⁾, E⁽⁴⁾, and D^b(⁴). The function of the F Lydian Universe pedal through the 15/8 syllable gives the composer a new understanding of the natural form of freedom and independence in interpreting the birth of new harmonic functions which can be summed up as the harmony and scale of the Universe modal scale. The limitations that emerge as determinants of the dominance of Polytonality and Polymodality are also increasingly evident the truth of the existence of third dimensional harmony, namely Universal harmony, from the integration of open harmony and closed harmony in general and closed harmony in particular.

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REFERENCES

- Andayani, A., Herman Herman, Isry Laila Syathroh, Endang Fatmawati, Ninawati Syahrul, Nabil Al-Awawdeh, Junita Batubara, & Nanda Saputra. (2023). Inquiry into the challenges of translating idioms extracted from musical lyrics. *Research Journal in Advanced Humanities*, 4(3). <https://doi.org/10.58256/rjah.v4i3.1274>
- Banoe, P. (2003a). *Kamus Musik 3*. Kanisius.
- Banoe, P. (2003b). *The Science of Harmony*.
- Batubara, J. (2021). *DESTINASI: Kolaborasi Kreatif Musik Digital, Puisi dan Tari*. <https://journal.isi.ac.id/index.php/resital/article/view/5866>
- Batubara, J., Syarifudin, A., Syathroh, I. L., Herman, H., Yasaviyevna, D. S., & Al-Awawdeh, N. (2023). Challenges of Translating Slang Expressions in American Song Lyrics of the 21st Century into the Arabic Language. *International Journal of Membrane Science and Technology*, 10(2), 131-139. <https://doi.org/10.15379/ijmst.v10i2.1162>
- Behringer, U. (1989). *Behringer Composer*. <https://www.behringer.com/>
- Christensen, C. (1997). *The Innovator's Dilemma*. Harvard Business Review Press. https://en.wikipedia.org/wiki/The_Innovator%27s_Dilemma
- Freire, P. (1970). *Pedagogy of Oppressed*. Continuum.
- Grossman, G. (2006). *ActionScript*. Macromedia (Now: Adobe Systems). <https://en.wikipedia.org/wiki/ActionScript>
- Harpang, Y. K. (2017). *Karya musik "divertimento grosso" dalam tinjauan kontrapung*.
- Hastanto, S. (2009). *Konsep Pathet dalam Karawitan Jawa*. ISI Press. http://repository.isi-ska.ac.id/2326/1/laporan_akhir_SRI_HASTANTO.pdf
- Heimbuch, J. (2017). *Screenwriting: Where The Story Begins*. Chapman University. <https://blogs.chapman.edu/dodge/2017/03/09/screenwriting-where-the-story->

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