

Study of the Techniques of Akira Nishimura's String Quartet No.2 <Pulse of the Lights>

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Abstract: String Quartet No.2 Pulse of the Lights was composed by Akira Nishimura in 1992. This piece is a representative work from the composer's mature period, fully showcasing his personalized compositional techniques. It holds significant analytical value and influence. This paper explores how Nishimura organically blends Eastern folk elements with Western musical culture by analyzing the pitch organization, core materials, musical structure, and unique compositional techniques in the work. It also examines how he embeds his distinctive compositional methods within the materials and integrates them throughout the structure.

Keywords: Akira Nishimura; String Quartet No.2 Pulse of the Lights; Chromatic Scale; Bhairav Scale; Heterophony.

1. Introduction

1.1. Introduction to the Biography of Composer

Akira Nishimura was born in 1953 in Osaka, Japan, in the eastern district of Osaka Castle. During middle school, he began studying various aspects of composition such as piano, harmony, and counterpoint. In high school, he focused on composition under the guidance of Yujiro Ikeuchi. During this period, Nishimura's compositional practice was influenced by Western composers such as Xenakis, Ligeti, Penderecki, and Japanese composers like Toru Takemitsu and Jo Kondo.

With Ryo Nishimura's continuous learning and creative efforts, he emerged as a prominent figure among Japanese composers in the 1970s, attracting significant attention. In the 1980s, a report by Jiang Xiaoyun from the Central Conservatory of Music titled "Japan Establishes the 'End-of-Century Music Research Institute'" provided a detailed account of Nishimura's background and compositional characteristics, which gradually introduced him to Chinese music professionals. In recent years, his unique compositional ideas, innovative techniques, and highly accessible works have garnered widespread attention in China and had a profound impact on the domestic composition scene. Numerous scholars have published analyses focusing on Nishimura's various works from different perspectives. For example: Gao Yuan's "Melancholy and Desolate Darkness-An Analysis of Akira Nishimura's Composition Techniques in 'JAKKO AIKA'" is the first to explore Nishimura's compositional techniques, focusing particularly on the polyphonic aspects of this choral work. Chen Siang's "Distance of Far and Near-A Multi-Angle Comparative Analysis of Works by Akira Nishimura and Toshio Hosokawa" summarizes the similarities in compositional techniques between Nishimura and Hosokawa and compares their differences in harmony, texture, and structural elements. Zheng Yang's "When Humanity Reflects in the Twilight-An Analysis of the Composition Techniques and Ideas in Akira Nishimura's First Violin Concerto 'After Glow'" examines the different musical images assigned to the solo violin and orchestra, analyzing specific compositional techniques and the interplay between the soloist and the orchestra. Kong

Zhixuan's "Research on Akira Nishimura's Compositional Techniques and Style" elucidates the characteristics of Nishimura's compositional techniques through an analysis of three of his famous works.

Akira Nishimura's compositional process is divided into three stages:

Early Period (1973-1984): This stage began during Akira Nishimura's university years. Fascinated by traditional music from various Asian regions, including Gamelan music and Japanese Gagaku, Nishimura positioned these elements as the primary focus of his exploration. During this period, he continuously experimented with finding a balance between Western compositional techniques and Asian elements. Representative works from this phase include the String Quartet "Heterophony" (1975), the Percussion Sextet "Kecak" (1979), and the "Second Piano Concerto" (1982).

Middle Period (1985-1991): During this stage, Akira Nishimura defined his artistic direction and explored various possibilities of the Heterophony technique. Additionally, he was deeply influenced by Kōhei Sugiura's design philosophy, with the origin of the universe, the birth of the sun, and the connection between light and life becoming major sources of inspiration for Nishimura's mid-career compositions. Representative works from this period include "Heterophony" for two Pianos and Orchestra (1987), "Navel of the Sun," for Hichiriki and Orchestra, "Cello Concerto," "Into the Eternal Light of Chaos," and "Ring of the Lights" (1989-1991).

Late Period (1992-2023): Since the 1990s, Akira Nishimura has embarked on a journey to break free from the confines of his personal style and compositional techniques, aiming to broaden the depth of musical content. This period reveals his contemplation on the birth of life, extending to reflections on religion and death. His works during this phase distinctly manifest the influence of Hinduism and Buddhism on Nishimura. Representative works include the Second String Quartet "Pulse of the Lights" (1992), "Mantra of the Light" for Women's Chorus and Orchestra (1993)

1.2. Introduction to "Pulse of the Lights"

The Second String Quartet "Pulse of the Lights" was composed in 1992, commissioned by the Casals Hall of the University of Tokyo, and performed by the Arditti String

Quartet. In this work, the use of pitch with Eastern musical characteristics and self-created compositional techniques reflect his deep affection for Asian ethnic cultures and his determination to transcend the limitations of Western compositional methods, resulting in a rich auditory presentation [1].

This paper analyzes Akira Nishimura's Second String Quartet, "Pulse of the Lights," focusing on how compositional techniques impact auditory effects from a perceptual perspective. It progressively explores pitch organization, core materials, and compositional techniques, delving into Nishimura's most distinctive personal writing methods and how these techniques enhance the work's tension and vitality. Additionally, through this analysis, the author aims to gain a deeper understanding of the composer's individualized techniques and apply this knowledge to future musical creations.

2. Pitch Organization

The pitch organization in the first movement revolves around the chromatic scale which serves as the overall tonal

foundation throughout the composition. Each section is predominantly characterized by the chromatic scale in its primary pitch organization, with the fundamental pitch of Bhairav scale, imparting an Indian musical color, permeating certain structural elements.

2.1. The Use of Chromatic Scale in Pitch Organization

The composer demonstrates a sophisticated use of the chromatic scale. Taking the first part as an example, the first phrase (mm.1-mm.7) opens with an explosive gesture that recurs several times in the piece. The opening measures contain both explosive and sustained gestures, featuring the use of the chromatic scale with G as the central pitch (Figures 1 and 2). In measures 8-9, as an extension of the first phrase, these refined materials are introduced. Unlike the first phrase, the chromatic scale in the extension only includes the second to ninth notes of the chromatic scale from the first phrase. Additionally, the central pitch shifts from G to G# (Figures 3 and 4).

Akira NISHIMURA

Figure 1. Pulse of the Lights, measures 1-7

Figure 2. Chromatic Notes on measures 1-7

1. explosive gesture 2. sustained gesture

Figure 3. Pulse of the Lights, measures 8-9

Figure 4. Chromatic Notes on measures 8-9

In the second paragraph of the first section (measures 11-21), the pitch material consists of a chromatic group starting from A, comprising eleven notes, with the absence of G# (Figures 5 and 6). In the third paragraph (measures 22-34),

the pitch material is a chromatic group starting from G#, comprising eleven notes, with the absence of G (Figures 7 and 8).

Figure 5. Pulse of the Lights, measures 11-21

a unique structural significance: the introduction of a new mode color—the Bhairav scale.

2.2. The Penetration of the Bhairav Scale in the Internal Structure

2.2.1. The Definition

Currently, there are two prevalent scale systems in India: one used in North Indian Hindustani music, comprising 10 scale systems, and the other used in South Indian Carnatic

music, comprising 72 scale systems [2]. Among these scale systems, the Bhairav scale in North Indian music is one of the commonly used scale systems in both North and South India (although in South India, it is known as the Mayamalavagowla scale.) In this context, the term "Bhairav scale" is used to collectively refer to the scale system in North Indian music. The pitch structure consists of a major scale except for D and A, which are lowered by a half step. (Figure 9).



Figure 9. The Fundamental pitch in Bhairav

2.2.2. The Application of Bhairav Scale

In this piece, Bhairav scale is often presented as pentatonic and tetratonic sequences. The composer truncates the scale at different scale degrees to form pentatonic and tetratonic sequences, and these sequences are then incorporated into the internal structure to create new displacement sequences.

The first pentatonic sequence is constructed on the fourth note of the ascending Bhairav scale, the second pentatonic sequence on the fifth note, and the tetratonic sequence on the second note. The common characteristic among these three sequences is the presence of an augmented second, which appears in the piece as a minor third.

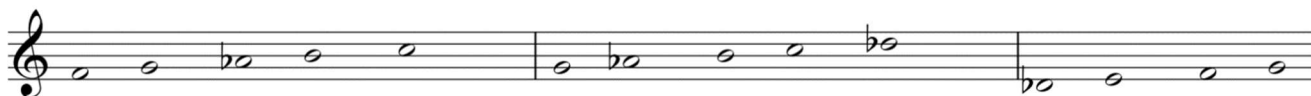


Figure 10. The first pentatonic, the second pentatonic and tetratonic sequence

The Bhairav scale's pentatonic sequence makes its first appearance in the melodic part of the third paragraph of the first section (first and second violin parts in measure 25-30). Apart from the ornamentation pitches, the core pitches in this part are B-C#-D-F-F#. The horizontal pitch relationships of this sequence happen to be identical to the first pentatonic

sequence of the Bhairav scale. Simultaneously, the accompaniment in the viola and cello parts presents pitch material based on the chromatic scale, blending with the Bhairav scale and forming a novel pitch relationship (Figures 7 and 11).

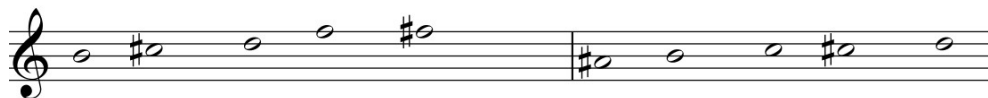


Figure 11. Pitch of melody and accompaniment

In measures 31-32, the four instruments in unison play the last three pitches of the core pitch sequence in retrograde in the melodic part: Gb-F-D. In different voice parts, there is an imitation of these three pitches with a major seventh,

emphasizing the intervallic relationships of minor seconds and minor thirds that frequently occur in the pitch of Bhairav Raga. This leads to the introduction of the core melody in the second section.



Figure 12. Measures 31-32

The second presentation of the Bhairav scale occurs in the second paragraph of the second section (measures 45-72), which is composed of four phrases. The composer chose the

second pentatonic sequence, characterized by minor thirds and consecutive minor seconds, as the core melodic material for the development of this section. This pentatonic sequence

first appears complete in the melodic part (first violin and viola parts) of the first phrase (measures 46-49): Bb-B-D-D#-E. It then shifts downward by a perfect fifth and appears in the melodic part (second violin and cello parts) of the second phrase (measures 50-52): Eb-E-G-Ab-A. In the main section of the third phrase (measures 55-57), the core pentatonic

sequence in the melodic part (viola part) is A-Bb-B-D-D#, which is the retrograde reflection of the core sequence in the second phrase. The pitch material in the expansion of the third phrase (measures 58-60) is derived from the Bhairav scale's tetratonic sequence, and the core pitch sequence in the melodic part is E-G-A^b-B^b.

The figure shows a musical score for measures 45-61, consisting of four systems of staves. The first system (measures 45-49) is marked 'religioso' and 'mp → pp'. The second system (measures 50-52) includes 'rit. --- 4 a tempo' and '3 rit. --- 4 a tempo' markings. The third system (measures 53-57) features a section labeled 'c' and 'expansion'. The fourth system (measures 58-61) includes 'multi-measure rest' markings. Blue boxes and circles highlight specific melodic lines and phrases across the systems.

Figure 13. Measure 45-61

The figure displays the pitch contour for three phrases. The first phrase (measures 46-49) is shown in the upper staff with notes Bb, B, D, D#, and E. The second phrase (measures 50-52) is shown in the lower staff with notes Eb, E, G, Ab, and A. The third phrase (measures 55-57) is also shown in the lower staff with notes A, Bb, B, D, and D#.

Figure 14. Pitch of the first, second, third phrases (included expansion)

2.2.3. Fusion of the Bhairav Scale and Chromatic Scale

The combination of the pitch material from the main and expansion parts of the third phrase (measures 55-60) forms a chromatic scale with G as the central pitch. Interestingly, this scale is precisely the chromatic scale formed by adding the pitches of the first and second phrases (measures 46-52), with the missing C pitch serving as the central pitch for the next phrase. It is worth noting that the intervallic relationships of





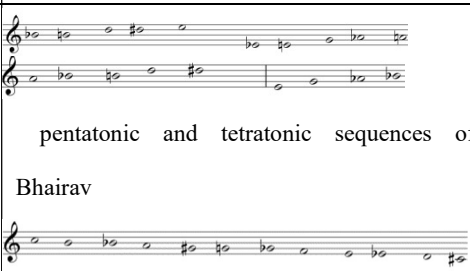

this scale align with the second pentatonic sequence of the Bhairav scale: consecutive minor seconds surround a minor third. Therefore, this chromatic scale can be considered an extension and continuation of the second pentatonic sequence of Bhairav (Figure 15). Subsequently, the pitch material in the fourth phrase (measures 62-72) forms a descending chromatic scale starting from C, representing a complete return to chromatic scale in this context (Figures 16 and 17).



Figure 15. Chromatic notes of measures 46-52 and measures 55-60

Figure 16. The 4th phrase

Table 3. Subdivision of Internal Structure in the Second Section

Paragraph	1 st	2 nd	3 rd
measures	36-44	45-72	73-95
material	 sustained gesture	 wave-like melody	 fusion of explosive gesture and sustained gesture
pitch	 Chromatic notes	 pentatonic and tetratonic sequences of Bhairav Chromatic scale	 Chromatic scale
duration	42"	2'22"	23"
dynamics	pp-ff	pp-ff	pp-fff
texture layer	one layer	two layer	one layer
instrumentation	Sustained gesture: Vln.I+Vln.II+Vla.+Vc.	Melody: Vln.I+Vla. Sustained notes: Vln.II+Vc.(two layers exchanged in the following phrase) Melody: Vla. Sustained notes: Vln.I+Vln.II+Vc. Melody: Vc. Sustained sound: Vln.I+Vln.II+Vla.	explosive gesture and sustained gesture: Vln.I+Vln.II+Vla.+Vc.(unison)

Compared to the previous two sections, the third section lacks a distinct subdivision of internal structure. It exhibits significant differences in character from the previous sections, with a more subdued emotional quality. Specific characteristics include a slow tempo, minimal variations in dynamics, and a simplified material predominantly featuring sustained single-note lines. Texturally, he predominantly uses single linear textures, with a significant addition of artificial harmonics towards the end of the composition which create an ethereal atmosphere.

3.2. Core Materials

3.2.1. Definition

The entire piece contains two core materials, which exhibit significant differences in character and create a strong auditory contrast.

Material 1 features an explosive sound effect. The four instruments quickly play the G note in thirty-second notes at a forte dynamic. They enter sequentially from highest to lowest—first violin, second violin, viola, and cello—following an octave imitation interval with a sixteenth-note

rest between each entry. This creates a burst-like, intense sound effect, extending not only along the horizontal time axis but also artificially creating a reverberation effect in space. The G note, which is the only pitch present in this material, serves as the central tone of the chromatic scale in this section, highlighting its importance. Introducing other pitches or dissonant intervals could detract from the increasing tension in the music. Therefore, the composer employs repeated central tones, pure octaves, and identical rhythmic patterns entering at different times to create memorable material that frequently reappears in subsequent sections, thereby increasing its significance in the work.

Material 2 consists of a crescendo sustained sound. The variations in dynamics serve as the primary factor in creating auditory memory and play a crucial role in the emotional transition of the music. This material introduces pitches other than the main tone and intervals beyond the consonant ones, contributing to a broader range of color changes. Additionally, the composer intentionally shapes the sound space for this material, using delay effects as a primary expansion technique. Due to the characteristics of the sound pattern, this multi-

voice imitation technique produces an echo-like effect.(Figure 1)

In the two core materials mentioned above, the explosive gesture maintains the same intensity, similar rhythmic patterns, and a consistent imitation technique throughout the

whole piece. Analysis reveals that, as the music progresses, the time interval between every appearance of explosive gestures becomes longer. When it reappears after a long time interval exceeding three minutes, its duration doubles. (Table 4.)

Table 4. The time of occurrence of the explosive gesture.

Duration:	1s	1s	1s	1s	3s	
length:	0s	25s	66s	92s	284s	443s

Although "Pulse of the Lights" lacks the quality of recapitulation, the composer utilizes highly consistent forms in the internal structure. By repeatedly presenting the same core material, the composer continuously deepens the audience's short-term memory of this material. This achieves an effect equivalent to recapitulation in the overall structure, aiming to facilitate the audience's long-term memory [4].

3.2.2. The Expansion of Core Materials in Each Section

1) The First Section

The first section presents the two core materials together. In the first paragraph, the composer uses a contrasting technique to present both materials separately. Material 1 is clearly shown in its original form, while Material 2 is processed with a glissando technique based on its initial shape. It is not until the first expansion accurately extracts the two materials that Material 2 is clearly presented.

At the beginning of the second paragraph, the composer derives more textural layers based on different textural forms. The cello part in this section features a relatively dynamic melody, a rising single-note line played with tremolo. The three upper parts incorporate a sustained single-note texture

with a sudden forte-piano dynamic (sff) as an important element, blending the character of Material 1. This then transitions into a pointillistic texture controlled by Material 1.

The material in the third section can be understood as an organic combination of the characteristics of the variants of Materials 1 and 2 from the first and second paragraphs. It blends the glissando technique and the single-note line to form a melody based on the Bhairav scale, with ornamentation added to each note head, echoing the effect of the glissando. The accent marks on the ornamented notes further highlight the character of Material 1 (as seen in Figure 18). Subsequently, the two layers of texture merge again to perform a three-note series. The pitches in this series correspond to the VI, VII, and I degrees of the Bhairav scale, with Gb as the tonic (I). The combination of the voices changes from a choral texture to a canon-like imitation, returning to the original combination of Material 1. This treatment lays the foundation for the return of the original forms of the two materials, and also for the return of the first section's expansion, giving the music a sense of recapitulation in its internal structure.



Figure 18. Material 2 in these three paragraphs respectively

Since Material 1 is presented more concisely and refinedly in the piece, with more frequent emphasis and consistent form, it takes up a larger proportion in the first section compared to Material 2. In contrast, Material 2 undergoes more extension and transformation, blending with Material 1 and even combining with its own variants.

2) The Second Section

In the second section, the dominant position of Material 1 gradually weakens. Compared to Material 2 in the first section, Material 2 in this section has more varied forms, not only extending the duration of sustained notes, and increasing the range and frequency of dynamic changes but also exploring

more possibilities in playing techniques. This characteristic is particularly prominent in the first paragraph. Within just nine measures of the first paragraph, techniques such as sul ponticello, sul tasto, ricochet bowing, tremolo, glissando, natural harmonics, and artificial harmonics are employed. This section focuses on the development of Material 2 through the use of these playing techniques, contrasting sharply with the dominated Material 1 in the ending of the previous section, and highlighting the strong tension-relaxation contrast between the two materials. Although Material 1's characteristics are still present in this section, the focused buildup of Material 2 in this paragraph prepares for

the subsequent transfer of energy between the materials.

The second paragraph is four periods composed of two textural layers: a melodic line based on the Bhairav scale and an accompanying sustained tone. In the first two periods, the melodic range remains within an octave, but starting from the third period, the melodic range broadens, presenting a wave-like ascending line that moves back and forth. In the fourth period, added intervals and increasing rhythmic density cause the wave-like melody to swell, intensifying the music's dramatic tension. At this point, the accompanying part, originally sustained tones, evolves into a smoother line characterized by glissando technique and steady movement. This layer's single intervals and slower rhythm contrast sharply with the melody's faster rhythm and polyphonic intervals. Although the Bhairav scale's coloration and the gradually expanding melodic line are the primary factors driving the musical development in this section, Material 2, serving as the accompaniment, remains an essential component. It subtly occupies part of the listener's auditory space, hidden within the main melody.

The third paragraph is where Material 1 and Material 2 are organically combined. At this point, the main motif of the entire piece reappears, but now Material 1 is infused with the characteristics of Material 2. In the first three measures, the tail end of Material 1 incorporates the sustained tone from Material 2, representing a horizontal combination. Following this, in the canon-like imitative texture, a tremolo in thirty-second notes, consistent with Material 1, is added on top of the gradually intensifying sustained tone, representing a vertical fusion. In this section, the time interval between each imitative entry progressively shortens, with the accented notes at the start of the four voices sounding closer and closer together, ultimately producing the auditory effect of Material 1.

4. Compositional Techniques:

4.1. Techniques for Expanding Materials

4.1.1. The Development of Individual Material

If we consider the original form of the material and each of its variants as independent entities, then, for example, in the first movement, the development of Material 1 exhibits the following phenomena:

1) The original duration of the material itself remains unchanged, but during its second appearance, it undergoes transposition or expansion in pitch.

In measure 9, Material 1 is repeated for the first time throughout the piece. In this measure, the speed, rhythm, dynamics, and performing techniques remain consistent, but the pitch is transposed upwards by a half step across all four voices.

Figure 19. Measure 1, 9 and 22

Material 1 appears for the second time in measure 22. Here, the pitches of the upper three voices are transposed upwards, while the lower voice is transposed downwards. Additionally, the original single-note material is expanded into a double stop with a major seventh interval.

These three instances of the material broaden its pitch range, adding new dimensions to its presentation.

2) The internal entry times of each voice in the material are altered, and the rhythm of the material slows down.

In Measure 31, The rhythm of the material changes from a single note in thirty-second notes to a single note in eighth-note triplets. As the dynamics gradually increase, the entry times of each voice are advanced so that they all occur simultaneously. This adjustment results in a recapitulation of the acoustic tension.

Figure 20. Measure 31

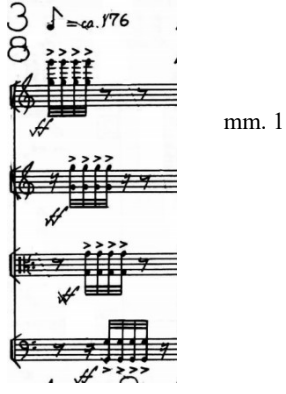





3) The duration of the material is extended by a multiple.

The prototype of Material 1 has a duration of one second. At Measure 73, without altering the tempo, rhythm, dynamics, or performing techniques, the duration of this material is extended to three seconds, representing a threefold durational increase. This extension of the material's duration results in a widening of the sonic texture.

Figure 21. Measure 73

In summary, the expansion of individual materials involves changes in pitch and duration. If we broaden the analytical perspective to observe the expansion of individual materials as structural units, we see that each unit undergoes various forms of stretching and compressing over specific periods to maintain structural integrity. For example, the third section of the second part (measures 73-95) extends from the first half of the first phrase of the entire piece (measures 1-4).

Table 5. The expansion of individual materials involves changes in pitch and duration.

<p>Individual 1: The first period of the first section.</p>	<p>Individual 2: The third paragraph of the second section</p>	
 <p>mm. 1</p>	 <p>mm. 73-75</p>	<p>The Material 1 in the first measure of Individual 1 extends into a three-measure passage in Individual 2. Since Material 1 is the sole material in Individual 1, Individual 2 retains the shape of Material 1 to the greatest extent possible.</p>
 <p>3 mm.</p>	 <p>mm. 76-88</p>	<p>Since Material 2 in Individual 1 features a descending glissando, Individual 2 retains the descending characteristic during the imitative process, applying it in a downward imitation across horizontal voices.</p>
 <p>mm. 4</p>	 <p>mm. 89-95</p>	<p>The ascending glissando in Individual 2 corresponds with the ascending glissando from Individual 1. The prototype of this variant in Individual 2 actually originates from this gesture as well (as indicated in the box in Table 5).</p>

4.1.2. The Confrontation and Superposition of the Two Materials

When considering the two core materials as Individual a and Individual b, these two types of individuals cannot exist independently in the musical development, they inevitably interact with each other.

- 1) Different compression way of the two individuals

Individual a remains unchanged, while Individual b retains the characteristic of a sustained tone with a crescendo, but its duration is compressed from the original ten seconds to one second in measure 73.

Individual a is compressed to a quarter of its original length, with only the first note of the four-note thirty-second rhythm pattern retained. Meanwhile, Individual b is shortened to three

seconds in measure 98.



Figure 22. Measure 73 and 98

2) Vertically simultaneous occurrence of the two individuals meanwhile they expand and compress during overlap

The two types of individuals begin to overlap. The upper voice represents Individual a, which is expanded to three times its original size, while the lower voice features a compressed version of Individual b in measure 77.

The subsequent content develops into a new section based on the combination of these two individuals, leading to the climax of the entire piece. This approach allows the originally separate materials to coexist and interact, resulting in the generation of a more expansive structure within the music.

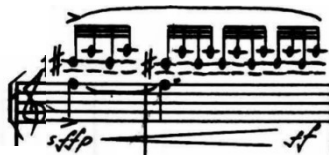


Figure 23. Measure 77

4.2. Heterophony: Unified Diversity in Music

4.2.1. The Definition of "Heterophony"

Heterophony, or "unified diversity in music," is one of the most distinctive compositional techniques of Akira Nishimura, and it is an invention unique to him. Nishimura began exploring and applying this technique during the creative phase of his career in the late 1970s and early 1980s. His string quartet *Heterophony* (1975) marked the beginning of his systematic study of this technique. The chamber work *Yaka* (1986-1988) represents the maturity of his research in this area, and his double piano and orchestra piece *Heterophony* (1987) was widely praised by the musical community [1]. The string quartet *Pulse of the Lights*, which this paper examines, was composed in 1992, at a time when this musical language had become even more refined. This chapter will focus on exploring the application of this technique in *Pulse of the Lights*.

To clarify the meaning of the compositional technique "Heterophony," I consulted Akira Nishimura directly, and he provided a clear answer. Due to the existence of alternative interpretations, Nishimura ensured accuracy and authenticity by writing his response in kanji on a piece of paper, stating that this is the answer directly from him and the only correct one: "unified diversity in music." [5]

According to Nishimura's definition, Heterophony, or "unified diversity in music," is an integrated design aimed at transmitting the same or similar musical materials across various voices through imitative techniques, thereby creating a sense of unity. The subtle differences between each voice contribute to a contrasting effect.

4.2.2. Manifestation of Unified Diversity in Pules of the Light

1) Unity

Unity typically refers to identical materials or themes. In *Pules of the Lights*, the composer clearly demonstrates the characteristic of unity in the design of the core materials.

Material 1 consists of an octave double stop with accented thirty-second notes. This theme is introduced in a high-to-low sequence across the four voices, with each voice entering at intervals of sixteenth rests. In this period, the unified material, despite different imitation intervals, maintains an overall unified sound.

Material 2 starts with an octave double stop, which then transitions through glissando to other intervals. The remaining voices enter at intervals of quarter rests, creating a cohesive and continuous sound (see Figure 1).

2) Diversity

Diversity refers to the subtle differences between voices that arise during the development of the same theme. This diversity manifests in two ways:

Difference in Imitation Intervals: As mentioned earlier, variations in the timing of imitative entries create differences between voices.

Difference in Timbre: Variations in playing techniques lead to differences in timbre. Figure 23 illustrates this well. In this segment, the sustained notes are the same across four voices, reflecting unity. However, the first violin's sustained notes include seven-note grace notes and are played *sul ponticello*, while the cello uses *ricochet* bowing at the start of the sustained notes. These techniques result in timbral differences, highlighting the diversity within the overall unified sound of the segment.

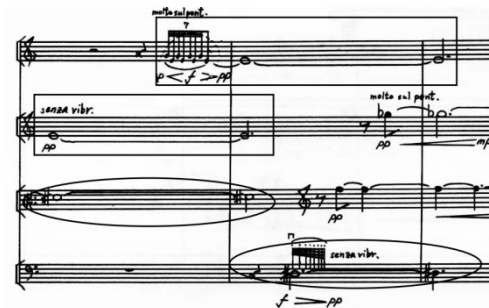


Figure 24. Measure 37 and 38

5. Conclusion

This article through an analysis of the pitch organization, core materials, musical structure and compositional technique of Akira Nishimura's String Quartet No. 2 "Pulse of the Lights" specifically the first movement, concludes as follows:

The work showcases elements of Asian ethnic culture in its pitch organization, rooted in the Bhairav scale of Indian music. The composer achieves an organic fusion of Indian and Western musical cultures by combining the fundamental pitch of Bhairav scale with the chromatic scale. Simultaneously, the use of refined core materials, emphasized multiple times throughout the whole movement, enriched the overall timbre and acoustics of the piece while maintaining structural integrity.

Additionally, the most valuable aspect to learn is the composer's original concept of "unified diversity in music," a technique that embodies artistry, practicality, and spirituality. From this technique, we can not only learn practical composition methods, but also be inspired by his

determination to break free from the constraints of Western compositional techniques and stay true to the characteristics of Eastern folk music. Akira Nishimura is a modern music composer with a distinctive personal style, a rebellious spirit, and a courageous drive to surpass himself, a spirit worth learning from.

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