

Repetition, Patterns, Accumulation: Southeast Asian Perspectives within Compositional Practices

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CONTENTS

List of Portfolio Compositions	4
List of Figures and Tables	7
Research Title	12
Research Question	12
Research Aims	12
Introduction	13
Chapter 1: Research Context	16
1.0 Research Context	16
1.1 Repetition in Musical Syntax	16
1.2 Repetition as Difference	17
1.3 Repetitive Patterns in Visual Arts	18
1.4 From Micro to Macro: Accumulative Patterning	21
1.5. Unpredictability Within Repetitive Gestures	22
1.5.1 Melodic Patterning and Textural Density	23
1.5.2 Irregular Symmetries and Instrumental Colours in Harmonic Patterns.....	26
1.5.3 Complexity Through Independent Layers of Time	30
1.5.4 Layered Complexity: Contextual Complexity in Southeast Asian Culture	32
1.6 Research Methodology	40
1.6.1 Researching, Connecting, Transforming	40
1.6.2 Iterative Cyclic Web: The Spider Web	42
Chapter 2: <i>Patterns</i> – Form and Continuity	45
2.1 <i>Continuum</i> Series – Repetition Pattern Accumulation	45
2.2 <i>Echoes</i> for tuba and string quartet (2021)	46
2.2.1 Use of Repetitive Procedures in <i>Echoes</i>	47
2.2.2 Connection to Sounds and People	51
2.3 <i>Montage</i> for Low Brass Quintet, String Quartet and Piano (2024)	51
2.3.1 Five Episodes in <i>Montage</i>	52
2.4 Summary of Research Aims and Outcomes	59
Chapter 3: <i>Place</i> – Forms, Patterns and Cultural Resonance in Southeast Asian Culture	60
3.1 <i>Jalanan</i> for String Quartet (2021)	61
3.2 The <i>Bell</i> Series	67
3.2.1 <i>Radiance</i> for Orchestra (2021)	67
3.2.1.1 Materials and Sound	69

3.2.1.2	Change-Ringing	70
3.2.2	<i>Sembilan</i> for Oboe and Percussion Duo (2022)	72
3.2.2.1	<i>Sembilan</i> 's Instrumentation and Influence	74
3.2.2.2	Repetition in Architecture Elements and Musical Motives	75
3.2.2.3	The Nine Motives/Gestures Used in <i>Sembilan</i>	76
3.2.2.4	Rhythmic Layers and the Three Pillars of Minangkabau Society.....	78
3.2.3	<i>Empat</i> for String Quartet (2023)	80
3.2.3.1	Materials and Process	81
3.2.3.2	Prepared String Timbres: Interlocking Gamelan Patterns, Timbral Sonorities from Cage and Reich's Phasing Techniques.....	84
3.2.3.3	Cyclical Structure of <i>Empat</i>	86
3.2.4	<i>Verdure</i> for Orchestra (2024)	87
3.2.4.1	Music and Environment Awareness	87
3.2.4.2	Carbon Compensation and Chord Colours	88
3.3	Summary of Research Aims and Outcomes	92
Chapter 4:	<i>People – Memory and Interconnection</i>	93
4.1	<i>Crossings</i> for Piano (2020)	94
4.1.1	Connections to the <i>Goldberg</i>	97
4.1.2	Looking Forward from Bach	98
Chapter 5:	Conclusion	99
5.1	Summary and Outcomes of Repetition, Predictability and Unpredictability, and Cultural Contexts	99
5.1.1	New Structural Possibilities and Flexibilities	99
5.1.2	Translating Repetitive Patterns from Visual Arts into Music Composition	100
5.1.3	Creative Explorations in Addressing Global Issues Through Music	100
5.1.4	Emotional Resonance and Expressivity	101
5.2	Future Plans and Moving Ahead	102
5.2.1	New Directions in Music Education	102
5.2.2	Research and Investigation into Ethnic and Folk Music of Southeast Asia	102
5.2.3	Connecting and Developing a New Series	102
Bibliography		104

List of Portfolio Compositions

Composition	Documentation
CROSSINGS (2020) Instrumentation: Piano Solo Duration: 6 minutes Performances:	Score submitted: Yes Media: Audio Recording Performer: Melody Quah Recording date: 20 March 2021 (Live Recording)
- World premiere: 20 March 2021 (livestream) Penn State New Music Festival and Symposium, USA 7 July 2022, UCSI Institute of Music, Kuala Lumpur, Malaysia 19 November 2022, Sunderman Conservatory of Music, Gettysburg, USA 30 November 2023, Grand Valley State University Michigan, USA 4 February 2025, Asian Composers League Festival Muza Kawasaki, Japan (Performed by: Toshio Nakagawa)	
JALINAN (2021) Instrumentation: String Quartet Duration: 7 minutes Performances:	Score submitted: Yes Media: Audio Recording Performer: Le Page Ensemble Recording Date: 9 September 2021
- World Premiere: November 2021, St Peter's Church, Berkhamsted, UK Performed by: Le Page Ensemble 22 July 2022, Three Nations Concert Malaysian Philharmonic Orchestra Chamber Series Kuala Lumpur, Malaysia Performed by: Tan Ka Ming, Wong Lu Ee, Caleb Wright, Elizabeth Tan 13 February 2024, Esplanade Theaters on the Bay, Singapore Performed by: Espoir Quartet	
ECHOES (2021) Instrumentation: Tuba and String Quartet Duration: 8 minutes Performer: Brett Stemple (tuba) and T'ang Quartet Performance:	Score submitted: Yes Media: Audio Recording Recording Date: 19 November 2021
World Premiere: 16 October 2021 Yong Siew Toh Conservatory of Music, Singapore	

Composition

Documentation

RADIANCE (2021)

Instrumentation: Orchestra

Duration: 7 minutes

Performer: Singapore Symphony Orchestra

Score submitted: Yes

Media: Audio Recording

Recording Date: 16 December 2021
(Live Recording)

Performances:

- World Premiere: 16 & 17 December 2021
Singapore Symphony Orchestra, Leonard Tan (conductor)
Esplanade Concert Hall, Singapore

SEMBILAN (2022)

Instrumentation: Oboe and Percussion Duo

Duration: 6 minutes

Performer: Howard Ng (oboe), Orathai Singhaart (percussion) Thanaphat Pratjaroenwanit (percussion)

Score submitted: Yes

Media: Audio Recording

Recording Date: 22 June 2023

Performances:

- World Premiere: 26 November 2022
Kuala Lumpur Performing Arts Center, Malaysia
Performers: Soniya Rakhmatullina (oboe), Orathai Singhaart (percussion) Thanaphat Pratjaroenwanit (percussion)
- 14 August 2023, International Double Reed Society Conference, Bangkok, Thailand
Performers: Howard Ng (oboe), Orathai Singhaart (percussion), Thanaphat Pratjaroenwanit (percussion)

EMPAT (2023)

Instrumentation: String Quartet

Duration: 9 minutes

Performer: Espoir Quartet

Score submitted: Yes

Media: Audio Recording

Recording Date: 6 November 2023

Performances:

- World Premiere: 26 October 2023
Yong Siew Toh Conservatory of Music, Singapore
- 13 February 2024, Esplanade Theaters on the Bay, Singapore
Performed by: Espoir Quartet

Composition

Documentation

VERDURE (2024)

Instrumentation: Orchestra

Duration: 6 minutes

Score submitted: Yes

Media: Audio Recording

Recording Date: 27 May 2024
(Live Recording)

Performer: Düsseldorf Symphony Orchestra

Performances:

- World Premiere: 27 May 2024
Düsseldorf Symphony Orchestra, Alpesh Chauhan (conductor)
Tonhalle Düsseldorf, Germany
- 28 June, 30 June, 1 July 2024
Düsseldorf Symphony Orchestra, Axel Kober (conductor)
Tonhalle Düsseldorf, Germany

MONTAGE (2024)

Instrumentation: Chamber Ensemble

Duration: 15 minutes

Score submitted: Yes

Media: Audio Recording

Recording Date: 22 January 2025

Performers:

Samuel Armstrong (trombone), Huang Shao-Wei (trombone), Wang Wei (bass trombone), Brett Stemple (tuba), Lim Jun Yi (tuba), Yang Shuxiang (violin), Reina Teo (violin), Oh Han Ling (viola), Leslie Tan (cello), Jonathan Shin (piano), Chong Wai Lun (conductor)

Performance:

- World Premiere: 23 October 2024
Yong Siew Toh Conservatory of Music, Singapore

Performers:

Samuel Armstrong (trombone), Huang Shao-Wei (trombone), Wang Wei (bass trombone), Brett Stemple (tuba), Teerayut Tupmongkol (tuba), Yang Shuxiang (violin), Syu Cheng-Yi (violin), Oh Han Ling (viola), Leslie Tan (cello), Jonathan Shin (piano), Chong Wai Lun (conductor)

List of Figures and Tables

Table I.1	Chronological List of Works for Composition Portfolio (2020–2024)	15
Fig. 1.1	Yayoi Kusama, <i>White Infinity Net Series</i>	19
Fig. 1.2	Richard Long, <i>Ring of Stones</i> (1982)	20
Fig. 1.3	Zhang Yu, <i>Ink Feeding 20150506</i> (2018)	21
Fig. 1.4	Steve Reich, <i>Piano Phase</i> (1980), p. 1	23
Fig. 1.5	György Ligeti, <i>Continuum</i> (1980), pp. 1-2	24
Fig. 1.6	Unpredictability in textural density for Reich's <i>Piano Phase</i> and Ligeti's <i>Continuum</i>	24
Fig. 1.7	György Ligeti, <i>Chamber Concerto</i> (1980), I mm. 1-3	26
Fig. 1.8	An example of antique Turkish Abrash Oushak Rug	27
Fig. 1.9	Bergama Rug	28
Fig. 1.10	Morton Feldman, <i>Why Patterns?</i> (1978), p. 1	29
Fig. 1.11	Morton Feldman, <i>Why Patterns?</i> (1978), p. 9	29
Fig. 1.12	Morton Feldman, <i>Why Patterns?</i> Harmonic patterns and colours	30
Fig. 1.13	Batik print that uses repeated patterns	32
Fig. 1.14A	Tazul Tajuddin: <i>Tenunan II</i> , bar 7	34
Fig. 1.14B	Tazul Tajuddin: <i>Tenunan II</i> , PII 'byar' sonority	34
Fig. 1.15	Okir pattern on sireh set	35
Fig. 1.16	Tenalak weaving pattern	35
Fig. 1.17	<i>Wayang Kulit Kelantan</i> in Kampung Machang, Kelantan, 2006	37
Fig. 1.18	The basic 8-beat gongan	38
Fig. 1.19	Yii Kah Hoe: <i>Gongan</i> mm. 5-7	39
Fig. 1.20	Yii Kah Hoe: <i>Gongan</i> mm. 36-38	39
Fig. 1.21	Yii Kah Hoe: <i>Gongan</i> mm. 98-99	40
Fig. 1.22	Repetition, Pattern, Accumulation process	41
Fig. 1.23	Smith and Dean's Iterative Cyclic Web	42
Fig. 1.24	My own cyclic web based on Smith and Dean's model	43
Table 1.1	Portfolio of Compositions According to Repetition in Patterns, Place, and People	44
Fig. 2.1	Five compositions of differing instrumentation in my <i>Continuum</i> Series using repetitive gestures for interconnectedness	45
Fig. 2.2	Connection from <i>Herringbone</i> to <i>Echoes</i>	47
Fig. 2.3	Repeated motif of minor and major 2nds presented in various forms	48
Fig. 2.4	Further reduction of repeated motif in minor and major 2 nd	48
Fig. 2.5	<i>Echoes</i> , shapes showing minor 2 nd and major 2nds	49

Fig. 2.6	<i>Echoes</i> , mm. 116-123 four different layers	49
Fig. 2.7	Organ-like sonorities from <i>Nexus</i> , <i>Herringbone</i> and <i>Echoes</i>	50
Fig. 2.8	Five episodes of <i>Montage</i> following the five-part structural design of the <i>Continuum Series</i>	52
Fig. 2.9	Resonance sounds using sostenuto pedal from <i>Herringbone</i> brought forward to <i>Montage</i>	53
Fig. 2.10	<i>Montage</i> : Organ-like sounds portrayed by piano clusters echoed by chords from brass and strings	54
Fig. 2.11A	Opening of <i>Herringbone</i>	55
Fig. 2.11B	<i>Montage</i> : Piano texture from Fig.2.11A. reimagined in tubas playing rapid single-note tremolo	55
Fig. 2.12A	<i>Nexus</i> opening texture	56
Fig. 2.12B	<i>Montage</i> : Recalling <i>Nexus</i> texture	56
Fig. 2.13	Concluding section of <i>Interweaves</i>	57
Fig. 2.14	<i>Montage</i> : Three layers of time mm. 153-158	58
Fig. 3.1	<i>Bell Series</i> (2021 – 2024)	60
Fig. 3.2	Transcription of a recording of the Azan from Masjid Negara, Malaysia	62
Fig. 3.3	Ending of <i>Jalanan</i> emulating vocal contours of the Azan	63
Table 3.1	Comparison between transcription of Azan and <i>Jalanan</i>	64
Fig. 3.4	2-part structure of <i>Jalanan</i>	65
Fig. 3.5	<i>Jalanan</i> (mm. 12-15) examples of fragments of motifs	66
Fig. 3.6	<i>Jalanan</i> (mm. 29-31) vertical sonorities to provide contrast from linear textures in earlier section	66
Fig. 3.7	Saint Andrews Cathedral, Singapore	68
Fig. 3.8	Saint Andrews Church – Overview of 12 bells + 1	69
Fig. 3.9	12 bells from Saint Andrew's Cathedral	70
Fig. 3.10	Partial change-ringing patterns from <i>Christmas Delight Maximus</i> for tubular bells	71
Fig. 3.11	Minangkabau migration from West Sumatera to Negeri Sembilan	73
Table 3.2	Western instruments with traditional timbral affinities in <i>Sembilan</i>	74
Fig. 3.12 A-C	Minangkabau buffalo-horn shaped architecture	75
Table 3.3	Description of nine motives/gestures in <i>Sembilan</i>	76
Fig. 3.13	<i>Sembilan</i> : Oboe melody portraying quick speech-like, 'chattering' tempo	78
Fig. 3.14	<i>Sembilan</i> : Moderate and regular tempo for second pillar, the scholars (<i>cadiak pandai</i>)	78
Fig. 3.15	<i>Sembilan</i> : Slower more stately tempo for religious figures (<i>alim ulama</i>)	79

Fig. 3.16	<i>Kotekan Empat</i> and the use of 5ths as an important harmonic feature in <i>Empat</i>	81
Fig. 3.17	<i>Empat</i> : Connection of sounds from <i>reyong</i> to Cage's prepared piano and reimagination in <i>Empat</i> string quartet	82
Fig. 3.18	<i>Empat</i> : Utilization of thirds from <i>Tari Pendet</i> , from the opening chord in bar 4 to a linear presentation	84
Fig. 3.19	Comparison between Cage's prepared piano textures and <i>Empat</i> 's prepared strings textures	85
Fig. 3.20	<i>Empat</i> : The different types of gong sounds emulated by the string quartet	87
Fig. 3.21	Motive X and interval content	89
Fig. 3.22	<i>Verdure</i> : Reduction of chords with bottom stave showing interval content between note	90
Fig. 3.23	<i>Verdure</i> : Comparison of the three chords at the beginning and conclusion, modified at the end	91
Fig. 4.1	<i>Goldberg Variations</i> : Variations following a distinct pattern: Character, Hand crossings, Canon	95
Fig. 4.2	Comparison of mm.16 and 32 from Variation 8 of <i>Goldberg Variations</i>	96
Fig. 4.3	My own tremolo figuration and hand-crossings in <i>Crossings</i> mm. 124-12	96

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ABSTRACT

This practice-based research comprises a portfolio of eight pieces composed between 2020 and 2024 that investigate the interaction between repetition and the manipulation of reductive micro-resources, resulting in unpredictability and complexity within autoethnographic musical environments. The compositions in the portfolio reflect my own experiences as a Southeast Asian composer, incorporating Western and Southeast Asian conceptions of repetition into musical compositions while evoking complex dynamics of contextual, aesthetic, and cultural dialogues.

The notion of repetition and a conscious discipline for the economy of material has always served as a guiding inspiration for my own compositional approaches. Repetition serves as a foundation of musical structure in Western and Southeast Asian traditions, providing a framework for musical development and coherence. It is also the spectra of unpredictability and complexity of the nuances within the respective traditions that I will seek to uncover through a congruence of art, architecture, and culture, which I aim to incorporate into my overall creative compositional approach to achieve emotional resonance and expressivity.

As a result, my core research question focuses on how I use repetition through structural, psychological, and emotional experience woven into a journey from the past to the present, incorporating elements of personal narrative and cultural identity in search of the transformative potential of integrating both Western and Southeast Asian tenets within autoethnographic musical landscapes.

The portfolio of compositions explores repetition across three domains: i) patterns, through considerations of form and continuity resulting in a series of related works; ii) place, by engaging with cultural references within Southeast Asian contexts; and iii) people, through the evocation of memory and personal interconnection. Acting as a bridge, the commentary accompanying my portfolio reflects the creative process, contextualises the compositions within pertinent theoretical and historical contexts, presents analysis, and contributes to scholarly discussions in composition studies.

Research Title

Repetition, Patterns, Accumulation: Southeast Asian Perspectives within Compositional Practices

Research Question

What are the outcomes of employing a compositional aesthetic that foregrounds the use of repetition, a dynamic relationship between predictability and unpredictability, and the intricate tapestry of contextual complexities in Southeast Asian culture?

Research Aims

- To elucidate how repetition and the restricted use of material can foster a dynamic interplay between predictability and unpredictability, functioning at both macro and micro-structural levels
- To illustrate how the congruence between visual art and music can be effectively translated into the realm of music composition
- To demonstrate how the use of repetitive gestures can achieve new and transformative outcomes within my compositions
- To demonstrate that whilst a work may exhibit characteristics of a particular style, in this case minimalism, it need not be constrained to its conventions. As a result, the creative process can lead to new musical insights

INTRODUCTION

My compositional approach is shaped by both Southeast Asian and Western musical influences, where repetition functions not merely as structure, but as expression. This interaction informs both the aesthetic and conceptual layers of my work. Rather than treating repetition as a mechanical or formulaic device, I explore it as a layered and culturally inflected expression—one that resonates with memory, affect, and transformation. This perspective is grounded in my experience navigating between musical traditions that often differ in their treatment of time, texture, and form. The dialogue between these heritages has become a generative space in which my compositional voice continues to evolve.

Within this context, the notion of repetition alongside a conscious discipline for frugality of material has always served as a guiding inspiration for my own compositional approaches. My continued exploration and application of simple, limited materials to achieve complex phenomenological effects is a result of examining the role repetition plays in certain minimalist and post-minimalist works of visual art. By studying some of these artworks, I will investigate how repetitions of minimal materials undergo treatment in musical parameters and how the accumulations of patterns contribute to the overall micro and macro structure of a work. This investigation forms the basis of my practice-based research on repetition as a process that unfolds into both psychological and emotional experiences.

While my music shares two principles of the minimalist musical tradition—repetition and minimal material—I am avoiding repetition being articulated as a systematic process. I am interested in how repetition allows for the notion of ‘the same’ to be the basis of a notion of difference, whereby ‘the same’ is taken as something transformable and repeatable using different musical parameters. I explore how repetition can serve as a means of transformation—using the simplest and most succinct of materials to generate evolving textures, structural possibilities, ultimately expanding its potential and reaching new conclusions in my music.

This ultimately led me to conceive a series of five connected pieces —*the Continuum Series*—where material used in the ending of a work is utilised at the beginning of a new one. The intention is to create an organic, circular quality where material repetition functions on both micro and macro levels while at the same time progressing forward to new instrumentation, texture, structure, and emotional experience for each work.

The *Continuum* Series began with *Interweaves* (2017) for string quartet, followed by *Nexus* (2018) for low brass quintet and *Herringbone* (2018) for piano solo, all of which were composed before my PhD studies. The final two works — *Echoes* (2021) and *Montage* (2024)—complete the series, which became a key component of my PhD project. The subsequent portfolio evolved from this series, shaped by a bespoke selection of music and art examined during the research process.

Incidentally, part of the title of this thesis, *Repetition, Patterns, Accumulation*, was inspired by Yayoi Kusama's minimalist *Infinity Net* series made in 1959. I came across the artist's work when my own work, *Herringbone*, was featured in the 'Minimalism: Space. Light. Object' exhibition at the ArtScience Museum, Singapore, in 2018. I was captivated and astounded by how it related to my series of connected works in the treatment of economical and repeated use of material that resulted in texture and form.

Portfolio of Compositions

This portfolio of compositions consists of eight works composed between 2020 – 2024 with mixed instrumentation ranging from solo to orchestral. The accompanying commentary provides a reflective analysis and situates the portfolio of works within relevant theoretical and historical contexts. The portfolio is divided into three domains:

i) *Patterns – Form and Continuity*

A fascination with repetition and strict economy of material led me to conceive a series of five connected pieces, the *Continuum* Series mentioned earlier. This section discusses how earlier pieces in the *Continuum* Series served as a creative impetus for the compositions presented in this portfolio. A pivotal work in this context is *Herringbone*, composed before my PhD studies. It exemplifies the use of basic materials undergoing repetition and concentrated economy, pushing the limits of possibility. This concept parallels with visual strategies found in minimalist and post-minimalist visual art, which will be discussed in the next chapter. These art forms had a profound impact on how repetition can transform basic materials into significant outcomes, and they have played a formative role in shaping my compositional approach.

Works in the portfolio: *Echoes* and *Montage*

ii) **Place — Forms, Patterns and Cultural Resonance in Southeast Asian Culture**

From the *Continuum* Series, I continued with a series of connected works: *The Bell* Series, which employs repetition linked to Southeast Asian resonances. In these works, I integrate sounds associated with Southeast Asia, such as the ringing and resonating qualities of the gong, as well as architectural elements, to create repeating and coherent motifs.

Works in the portfolio: *Jalanan*, *Radiance*, *Sembilan*, *Empat*, and *Verdure*

iii) **People — Memory and Interconnection**

This final area explores repetition through personal narrative and emotional dimensions, forming a bridge between past and present within autoethnographic compositions.

Works in the portfolio: *Crossings*, *Echoes*, *Montage*, *Empat*

Chronological List of Works for Composition Portfolio (2020-2024)

	Title of Work/Year	Instrumentation	Duration
1	<i>Crossings</i> (2020)	Piano Solo	6 minutes
2	<i>Jalanan</i> (2021)	String Quartet	7 minutes
3	<i>Echoes</i> (2021)	Tuba and String Quartet	8 minutes
4	<i>Radiance</i> (2021)	Orchestra	7 minutes
5	<i>Sembilan</i> (2022)	Oboe and Percussion Duo	6 minutes
6	<i>Empat</i> (2023)	String Quartet	9 minutes
7	<i>Verdure</i> (2024)	Orchestra	6 minutes
8	<i>Montage</i> (2024)	String Quartet, Low Brass Quintet and Piano	15 minutes
			64 minutes

Table I.1. Chronological List of Works for Composition Portfolio (2020–2024)

Chapter One: Research Context

1.1 Repetition in Musical Syntax

Ethnomusicologist Bruno Nettl identifies musical repetition as a rare cultural universal – a characteristic exhibited by the music of every known human culture.¹

Repetition has fulfilled many roles in the history of what we now regard as western music: from medieval isorhythms, through to the concept of motivic development within the classical style and encompassing baroque imitative procedures. As a temporal-based art form, music is inextricably linked with the phenomenon of repetition. Although the density of repetition varies with style from work to work, the sheer quantity of repetition in music is undoubtedly a fundamental and striking fact.

Heinrich Schenker interpreted much of Western art music as consisting of more basic underlying motions than all of its notes would suggest.² He used the term ‘hidden repetition’, as demonstrated in his analysis of the opening of Beethoven’s 5th Symphony and Piano Sonata Op. 10 No. 1 (first movement), where instead of looking for connections on the surface in the way that traditional motivic analysts did, Schenker identified that this type of repetition permeates across the various layers.³ This approach of uncovering underlying repetitions forms part of a broader process — one that Schenker frequently referred to as ‘organic’ — in which the subsequent is derived from the prior. One of the methods in achieving this is the time-honoured method of repetition. These ‘hidden repetitions’ can range from the tiniest particles to the broadest of tonal spans. When they appear in a composition they give it a more deeply ‘organic’ dimension.⁴

In the essay *Structure and Function in Musical Repetition*, David Lidov discusses a repetitive device known as ‘textural repetition’. According to Lidov, textural repetition ‘cancels out its own claim on our attention and, therefore, directs our focus elsewhere to another voice or to a changing aspect’.⁵ He suggests that this might already be evident in the fourth or fifth repetition. He thus links the function of a textural background to an abstract structure (continuous

¹ Bruno Nettl, *The Study of Ethnomusicology: Thirty-One Issues and Concepts* (Urbana: University of Illinois Press, 2005), pp. 44-49.

² Heinrich Schenker, *Der freie Satz*, translated by E. Oster (New York: Longman, 1935), pp. 3-7.

³ Jack F. Boss, ‘Schenkerian-Schoenbergian Analysis and Hidden Repetition in the Opening Movement of Beethoven’s Piano Sonata Op. 10, No. 1’, *The Online Journal of the Society for Music Theory*, 5/1 (1999), <<https://www.mtosmt.org/classic/mto.99.5.1/mto.99.5.1.boss.html>> [accessed 8 December 2024].

⁴ Charles Burkhardt, ‘Schenker’s Motivic Parallelisms’, *Journal of Music Theory*, 22 (1978), p. 172.

⁵ David Lidov, ‘Structure and Function in Musical Repetition,’ *Journal of the Canadian Association of University Schools of Music* 8 (1979), pp.1–32.

repetition that lasts for at least four iterations) resulting in a hypnotic repetition. For Lidov, this approach to repetition directs one's attention to an aspect of change, but the effect of the repetition is not sacrificed — 'the figure maintains, nevertheless, a transcendental influence on our musical consciousness'. In order to achieve this effect of textural repetition, the repeated material cannot be overly complex.⁶

The hypnotic quality in this form of textural repetition is deeply alluring, using simple material as explained by Lidov. Here, 'textural repetition' functions similarly to Yayoi Kusama's *Infinity Net* series as with Steve Reich's *Piano Phase* - which will be discussed later as 'Repetitive Patterns in Visual Art' and 'Melodic Patterning and Textural Density'.

1.2 Repetition as a Difference

In his book *Difference and Repetition*, the French philosopher Gilles Deleuze's core insight is that each repetition is a re-production and therefore will always be different. Deleuze describes how 'mechanical' or bare repetitions (repetition of the Same) would find their *raison d'être* in the more profound structures of a hidden repetition in which a differential is disguised within it.⁷

Consider . . . the repetition of a decorative motif: a figure is reproduced, while the concept remains absolutely identical . . . However, this is not how artists proceed in reality. They do not juxtapose instances of the figure, but rather each time combine an element of one instance with another element of a following instance. They introduce a disequilibrium into the dynamic process of construction, an instability, dissymmetry or gap of some kind which appears only in the overall effect..⁸

Deleuze often refers to the Danish philosopher, Søren Kierkegaard (1813-1855). In his book, *Gjentagelsen* (*Repetition* in English) from 1843, Kierkegaard elaborates on repetition in relation to remembrance. He maintains that the recollection of something experienced is never an exact copy of the actual experience. When recalling something, one thinks back in time and acknowledges that something has once been; but seeing as the actual remembrance takes place in the present moment, simultaneously something new is actually being created.

⁶ Ibid., p.37.

⁷ Gilles Deleuze, *Difference and Repetition* (New York: Columbia University Press, 1994), p. xx.

⁸ Ibid., p.19.

Just as pertinently, Kierkegaard also states that repetition is consequently a forward-pointing series of movements that contains, at one and the same time, the recalled and the present. Repetition does not become 'the same as' but the same with a difference because the repetition transpires within the new.⁹

1.3 Repetitive Patterns in Visual Art

Author Elizabeth Margulis's book, *On Repeat: How Music Plays the Mind* sheds light on a range of issues from the use of repetition as a compositional tool, to its role in characterizing our behaviour as listeners. The study proceeds to expand beyond music to consider related implications for repetition in language, learning, and communication where patterns of repetition aren't just musical techniques for composers to play with but it invites listeners to participate.¹⁰

Repetitive patterns are not only heard in music but are also evident in visual art. Yayoi Kusama's minimalist work the *Infinity Net* series made in 1959 consists of five white paintings using small dots that combine in a repetitive manner to form a net. This sentence by minimalist icon Donald Judd, summarizes the effect of Kusama's work.

The effect is both complex and simple.¹¹

Kusama's *Infinity Net* series has neither a beginning nor an end, it illustrates a pure repetition of nets. The artist describes her *Infinity Net* paintings as visualisations of hallucinations that have recurred since her childhood. During these episodes, her vision is covered by a layer of dots or a net. These hallucinations are just one manifestation of psychological ill health that has plagued the artist for most of her life.¹²

⁹ Søren Kierkegaard, *Repetition*, trans. by Howard V. Hong and Edna H. Hong (Princeton, NJ: Princeton University Press, 1983), p. 131.

¹⁰ Elizabeth Margulis, *On Repeat How Music Plays the Mind* (New York: Oxford University Press, 2014), p.7.

¹¹ Donald Judd, 'In the Galleries', *Art News*, October 1959.

¹² Victoria Miro, 'Yayoi Kusama White Infinity Nets' *Victoria Miro Website*, <<https://www.victoria-miro.com/exhibitions/444/>>[accessed 8 January 2025]

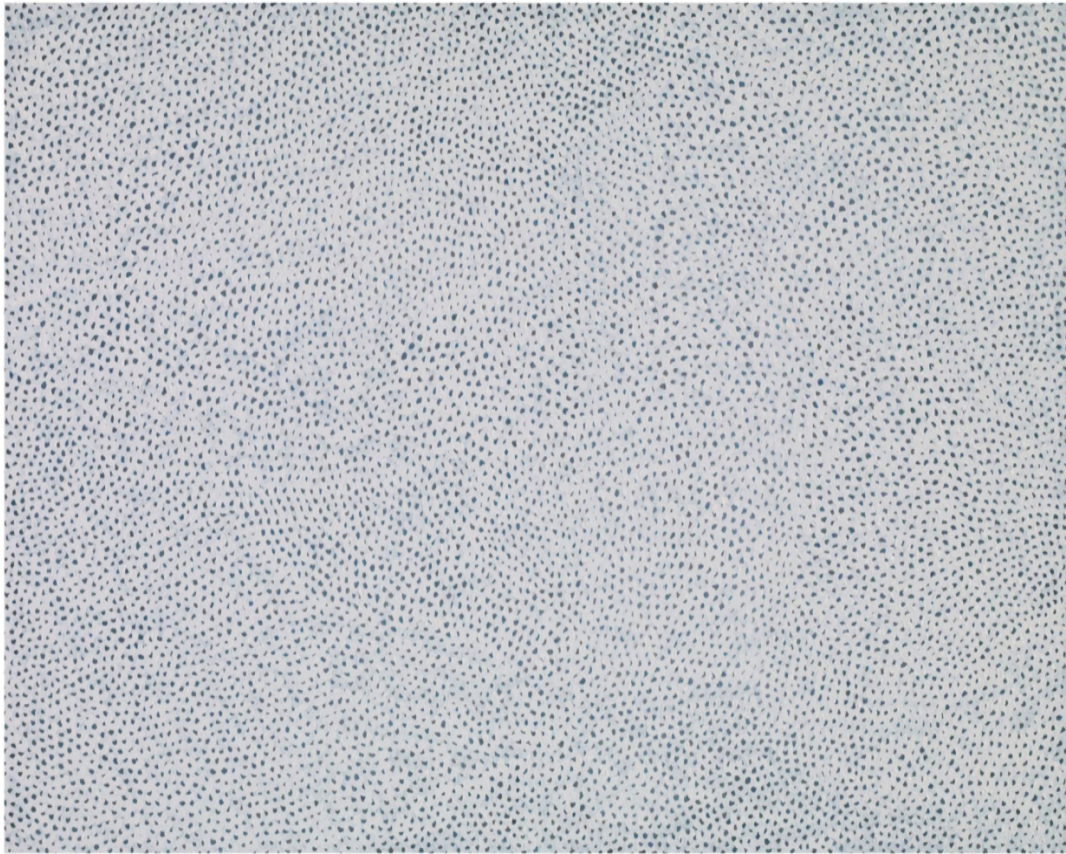


Fig 1.1. Yayoi Kusama, *White Infinity Nets*.¹³

British artist Richard Long has been at the forefront of Land Art, pioneering a form of practice centred around long walks in natural landscapes. His works make use of materials from natural landscapes such as slate, stone, wood, and even pine needles. *Ring of Stones* (Fig.1.2), highlights the synergy between difference and repetition in a work that is both modest and complex. Comprised of 258 stones arranged in concentric circles, every stone differs in its shape and size. This work reveals how the same materials have different implications when taken out of their natural environment and displayed in dynamic installation arrangements in museums or galleries. Long describes his work as ‘a balance between the patterns of nature and the formalism of human, abstract ideas like lines and circles. It is where my human characteristics meet the natural forces and patterns of the world’.¹⁴

¹³ Ibid., Kusama’s *Infinity Net* series debut solo show was first exhibited in 1959 at the Brata Gallery in New York. In 2013, Kusama exclusively showcased *White Infinity Nets* paintings at the Victoria Miro Gallery, London from 1 October – 16 November.

¹⁴ ‘Richard Long’, Hidden Gallery, <<https://hiddengallery.co.uk/artists/64-richard-long/?srsltid=AfmBOooJTbHfTp3ZKo0HBjQeEGiAW2-QMNLxJH2iRD59ZkzSiDk6O1eo>> [accessed 8 January 2025]



Fig.1.2. Richard Long *Ring of Stones*.

In my next example (Fig. 1.3), Zhang Yu's *Ink Feeding 20150506*, he combines the process of repetition which is one of the iconic symbols of Western minimalist aesthetic with Buddhism, radiating a world of calmness and simplicity. Zhang Yu, who is referred to as a Chinese Maximalist, performs simple gestures in a deeply mindful almost spiritual way, which may often exert a physical toll on the artist or performer.

He begins his practice with bare materials, in this case rice-paper and ink. He takes the simple geometric shape of the cube, represented here in the transparent acrylic and engages in a performative process of repeatedly pouring ink over several days. A black cube of paper is formed as a result of the absorption of the ink. This repetitive process demonstrates how the simplest means and the simplest of actions can accumulate into forces that resonate with a deep significance.

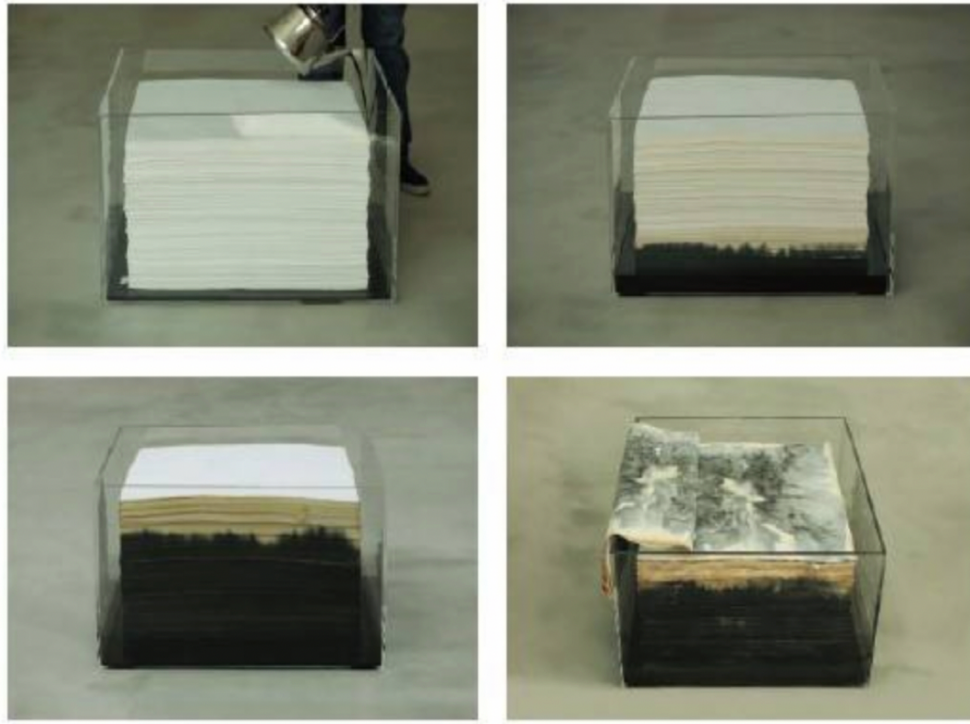


Fig.1.3. Zhang Yu, *Ink Feeding* 20150506.

1.4 From Micro to Macro: Accumulative Patterning

If Kusama's hallucinations and repetitions of nets explored the physical and psychological boundaries of painting, creating an almost hypnotic sensation for both the viewer and the artist, Hungarian composer György Ligeti's childhood dreams of spider webs resulted in the composer's micropolyphonic webs in the 1960s described as 'net structures' by theorist Miguel A. Roig-Francoli. Ligeti's 'net structure' is a continuous web of finely woven lines or repeated patterns in a constant, interactive process of transformation. It incorporates aspects such as pitch, rhythm, texture, dynamics, or timbre, as demonstrated in his earlier orchestral works such as *Apparition* (1958–59) and *Atmospheres* (1961).¹⁵ Another example of Ligeti's childhood reminiscences was a story by Gyula Krúdy, which occurs in a specific imaginary space via the nightmarish clattering of a hundred clocks ticking away continuously.¹⁶ This resulted in the composer's 'pattern-meccanico' compositions demonstrated in *Poème Symphonique* (1962) in which one hundred mechanical metronomes imitate the ticking of clocks¹⁷ — all at different speeds. Ligeti applied a similar texture in *Continuum* (1968), a solo harpsichord piece in which small clusters of pitches rapidly repeated in a mechanical manner,

¹⁵ A. Roig-Francoli Miguel, 'Harmonic and Formal Processes in Ligeti's Net-Structure Compositions' *Music Theory Spectrum*, Vol. 17, No. 2 (Autumn, 1995), pp. 242–43.

¹⁶ Amy Bauer, *Ligeti's Laments: Nostalgia, Exoticism, and the Absolute* (New York: Ashgate, 2011), p. 31.

¹⁷ Jane Piper Clendinning, 'The Pattern-Meccanico Compositions of György Ligeti', *Perspectives of New Music*, 31.1 (Winter, 1993), pp.192–95.

gradually changing the original pitches. Both examples by Kusama and Ligeti exemplify how the repetition of small units — whether visual motifs or sonic elements — can accumulate into dense, complex textures that define the character of their work.

This idea of complex and accumulative textures also appears in the music of American composer, Charles Ives. While Ives approaches this idea from a different angle, his use of cumulative form and paraphrase techniques similarly results in musical density through the progressive layering and integration of diverse materials. Musicologist Peter Burkholder describes how Ives introduces motives, expands and combines them, and ultimately presents an ‘accumulated’ result toward a work’s conclusion. In his *Symphony No. 3* (1908–10), Ives employs this cumulative form, using his signature paraphrase technique to weave together several traditional Protestant hymns. The first movement unfolds from fragmented motivic particles of a melody that gradually come together as a cumulative effect, to reveal a fully formed melody at the end. While Burkholder describes Ives’ cumulative form as ‘non-repetitive’ in the traditional thematic sense,¹⁸ repetition still plays a vital role — albeit in transformed and evolving forms. Ives draws on micro-repetitions of motives and phrases, often varied with each recurrence. These are consistently accompanied by a countermelody that undergoes a similar process of development, reinforcing the cumulative and layered character of his textures.¹⁹ This dialogue generates a sense of emergent complexity and delayed resolution, revealing repetition not as mere recurrence but as a dynamic force of transformation and unpredictability — a perspective explored throughout this study.

1.5 Unpredictability Within Repetitive Gestures

This section explores the works of Steve Reich and György Ligeti (focusing on their use of repeated melodic patterns and their impact on textural complexities), Morton Feldman (in his use of repetitive harmonic patterns and varied combinations of instrumental colours), Harrison Birtwistle (in his approach to repetition through independent layers of time), as well as Tazul Tajuddin and Yii Kah Hoe (whose use of repetitive patterns elicits contextual complexities rooted in Southeast Asian culture).

¹⁸ Peter Burkholder, *All Made of Tunes: Charles Ives and the Uses of Musical Borrowing* (New Haven and London: Yale University Press, 1995), p.137.

¹⁹ *Ibid.*, p. 138.

1.5.1 Melodic Patterning and Textural Density

Steve Reich's early work *Piano Phase* (1967) and Ligeti's *Continuum* (1968) for harpsichord demonstrate a short repeated pattern, utilising a flexible distance of change before patterns converge again.

Original pattern in fixed tempo

Phasing / Flexible tempo, increasing textural density

$\text{♩} = \text{ca. } 72$
 Repeat each bar approximately number of times written. / Jeder Takt soll approximativ wiederholt werden entsprechend der angegebenen Anzahl. / Répétez chaque mesure à peu près le nombre de fois indiqué.

1 (x4-8) r.h. l.h. *mf* non legato
 2 (x12-18) r.h. l.h. *mf* non legato
 3 (x16-24) (x4-16) (tempo 1) hold tempo 1
 accel. very slightly hold tempo 1 a. v. s.

Fig.1.4. Reich, *Piano Phase* textural density through flexible tempo.

In *Piano Phase*, the first player begins by repeating the pattern, and ultimately that is the first player's role in the entire section. The second player enters in unison and as the piece progresses, increases the tempo slightly. Gradually, the two separate until the distance between them is a full semiquaver. The second player briefly matches tempo with the first before resuming the phasing process. The latter procedure continues through a full cycle of twelve phases, finally returning to close the section in unison.

As stated earlier, Ligeti's *Continuum*, is categorized under his 'pattern-meccanico' compositions; however, its gradual accumulation of dense textures suggests that this intriguing work is also partially based on net-structures.²⁰ The piece begins with a two-note motif. This two-note motif gradually increases in density by an addition of more notes played rapidly to create an impression of continuous sound and the correct tempo has been reached when the piece lasts less than four minutes.²¹

²⁰ Clendinning, 'The Pattern-Meccanico Compositions of György Ligeti', p.193.

²¹ Louise Duchesneau, Wolfgang Marx.(Eds.) *György Ligeti: Of Foreign Lands and Strange Sounds*. (Woodbridge: The Boydell Press, 2011), p. 91.

György Ligeti

*Prestissimo**

Continuum

*Prestissimo — extrem schnell, so daß die Einzeltöne kaum mehr wahrzunehmen sind, sondern zu einem Kontinuum verschmelzen. Sehr gleichmäßig, ohne jede Artikulation spielen. Das richtige Tempo wurde erreicht, wenn das Stück (ohne die Schluß-Pausen) weniger als vier Minuten dauert. Die vertikalen punktierten Striche sind keine Taktstriche (Takt bzw. Metrum gibt es hier nicht), sondern dienen nur zur Orientierung.

*Prestissimo — extremely fast, so that the individual tones can hardly be perceived, but rather merge into a continuum. Play very evenly, without articulation of any sort. The correct tempo has been reached when the piece lasts less than 4 minutes (not counting the long fermata at the end). The vertical broken lines are not bar lines — there is neither beat nor metre in this place — but serve merely as a means of orientation.

Fig. 1.5. Ligeti, *Continuum* gradual accumulation of textural density.

In my analysis, the most intriguing process in both Reich's and Ligeti's examples occurs where flexibility in tempo and accumulation of texture take place. It is in these areas that unpredictability happens, resulting in increasingly denser textures.

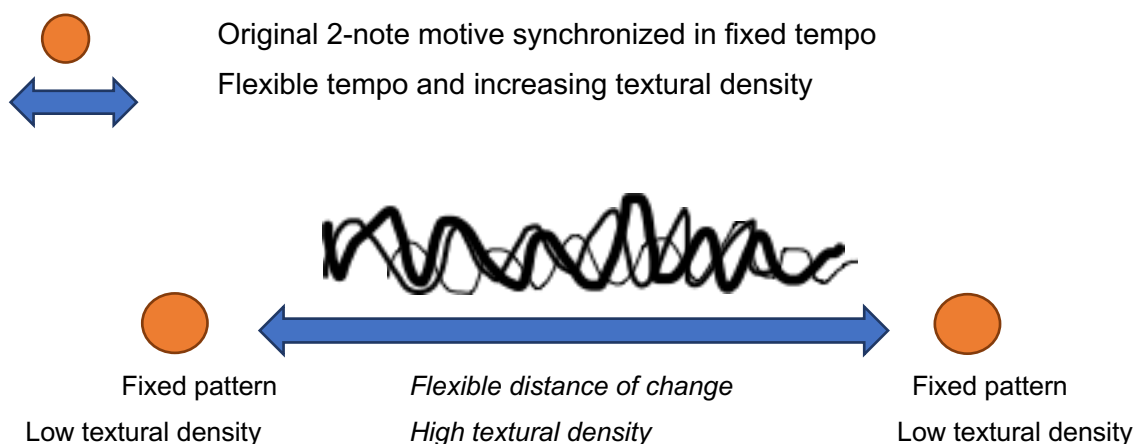


Fig. 1.6. Summary of unpredictability in textural density for Reich's *Piano Phase* and Ligeti's *Continuum*.

In Ligeti's *Continuum*, these dense textures eventually form a micropolyphonic web or sound mass. A similar approach to textural transformation can be observed in the first movement of Ligeti's *Chamber Concerto*, where structural function gives way to texture of sonorous net-structures. It is here where repetitive patterns are manipulated in terms of texture, volume and pitch register within each other until the accumulation of simultaneous independent contrapuntal lines are formed.

The opening of the *Chamber Concerto* uses a narrow, gradually expanding Major 3rd cluster (G flat to B flat). This linear process turns into an outright demonstration of sonic magic. It utilises instrumental timbre of the lower register of the flute, clarinet and bass clarinet - against harmonics in the cello and bass at a low dynamic. There is also a generalised pitch and rhythmic complementarity e.g., when the flute is playing one pitch, the clarinet is playing a different pitch, so that the resulting vertical sonority also consists of different pitches within the narrow confines of the Major 3rd cluster. The rhythm adopts the same function, whereby Ligeti ensures that no two instruments duplicate the same rhythm, mainly to avoid any perception of pulse, or distinction between strong and weak beats. This passage exemplifies an extension of the micropolyphonic principles observed in *Continuum*, now unfolded through recurrent intervallic patterns and intricately shifting pitch and rhythmic layers.

4/4 ♩ = 60
Corrente (Fließend) I

Flauto
Oboe
Clarinetto
Clarinetto basso
Corno
Trombone
Clavicembalo + Organo + Hammond (optional: Armonio)
Pianoforte + Celesta
Violino 1
Violino 2
Viola
Violoncello
Contrabbasso

con sord.
senza vibr.
pp
senza vibr.
suono reale I.
pp
senza vibr.
(klingt wie notiert)
(sounds as written)
suono reale II.
pp sempre

Fig. 1.7. Ligeti, *Chamber Concerto*, I mm. 1-3.

1.5.2 Irregular Symmetries and Instrumental Colours in Repetitive Harmonic Patterns

*My music has been influenced mainly by the methods in which colour is used on essentially simple devices. It has made me question the nature of musical material. What could best be used to accommodate, by equally simple means, musical colour? Patterns.*²²

— Morton Feldman

Why Patterns? (1978) scored for flute, piano and glockenspiel marks Feldman's new shift in style, triggered by visual sources. Unlike his graphic notation works inspired by Abstract Expressionist art in the early 1950's, Feldman formed an attraction to Middle Eastern rugs in

²² Morton Feldman, 'Crippled Symmetry' in *Morton Feldman Essays*, ed. Walter Zimmermann (Kerpen, West German: Beginner Press, 1985), p.128.

the 1970's, where the role of repetition in art and the nature of symmetry led him to explore similar elements in his music during this period. Feldman noticed a unique discolouration in Middle Eastern rugs known as *abrash*, which resulted mainly from differing wool quality and the lanolin content, due to the yarn having been dyed in small quantities.²³ Thus, the colour of the rug was supposed to be the same throughout but in reality, was not. If the rug was blue, there were gradations within the colour blue.



Fig. 1.8. An example of antique Turkish Abrash Oushak Rug.

He was particularly drawn to rugs with irregular woven patterns. Optically the illusion conveys a homogenous and symmetrical pattern throughout, but upon closer examination, slight variations are revealed in the intricacies of the patterns.

One sees the same patterns repeated throughout a space, and the impression is strong that the result is symmetrical. However, closer examination reveals...that an inverted candelabrum shape along the borders is repeated eighteen times on one side and nineteen times on the other, and further, the colours do not match up...patterns...look the same but are in fact composed of small variations among the details.²⁴

²³ 'What is "Abrash" in Antique Rugs?', *YouTube*, <https://www.youtube.com/watch?v=s6Ga5vXZh_Y&t=9s> [accessed 6 January 2025].

²⁴ Louis Goldstein, "Morton Feldman and the Shape of Time," in *Perspectives on American Music since 1950*, ed. James R. Heintze (New York: Garland Publishing, Inc., 1999), p. 73.



Fig.1.9. *Bergama rug*

By studying the arrangement and patterns of these Middle Eastern rugs, Feldman posed the question, 'how can both stasis and change be illusionary at the same time?'²⁵

Feldman admits that he works with colours similar to a painter, involving himself in gradations within the chromatic world.

But I work very much like a painter, in so far as I'm watching the phenomena and I'm thickening and thinning.²⁶

Feldman answered this in *Why Patterns?*, one of his 'patterned works', in the 1970's where he introduced 'hidden variation', a synthesis between variation and repetition.²⁷

²⁵ Morton Feldman, 'The Anxiety of Influence: A Feldman Primer', in *Morton Feldman Essays*, ed. Walter Zimmermann (Kerpen, West Germany: Beginner Press, 1985), p. 181.

²⁶ *Ibid.*, p. 168.

²⁷ *Ibid.*, p. 169.

[illegible]

1.5.3 Complexity Through Independent Layers of Time

— Michael White 'A Legendary Orpheus from Harrison Birtwistle'

²⁸ Michael White, 'A *Legendary Orpheus from Harrison Birtwistle*', 18 October 2019, <<https://www.camdennewjournal.co.uk/article/a-legendary-orpheus-from-harrison-birtwistle>>[accessed 12 January 2025].

Feldman's compositions show a gradual repetitive evolution, Birtwistle's music features fragmented layers structured in blocks, marked by constant motion and fluctuation. This creates a multi-layered and unpredictable quality, reflecting Birtwistle's view of music as a physical object – where a similar object can be viewed in different angles with different perspectives.²⁹

Be it composing for opera, chamber music, or solo piano, Birtwistle consistently explores temporal relationships within fixed musical elements such as register, pitch, dynamics, and rhythm, juxtaposing foreground and background materials without conforming to a linear compositional path.

In *Carmen Arcadiae Mechanicae Perpetuum* (1977), Birtwistle constructs six mechanisms, or 'machines', and the piece examines how these mechanisms repeat and interact with one another.

There are no transitions in this work. It never gradually goes anywhere; it goes one thing and another thing.³⁰

If Birtwistle and Feldman shared notable similarities, the cognitive processes between Birtwistle and Paul Klee in their creative growth is even more pronounced. Klee associates the essence of form building with the use of lines, categorising them as 'active', 'medial' or 'passive', enabling a freedom to modulate between these states.³¹ Similarly in *Carmen*, a sense of time is shaped by rhythmic materials that are juxtaposed, fragmented and suspended in continuity while simultaneously driving the music forward; ultimately unveiling itself as an object in the process of being formed.

I was interested in [...] the notion that this piece of music exists, just like an object, and what you can do is perform certain facets of it, examine it in different ways. [...] The total object is never sounded, but through time you build up a memory picture of what it is.³²

²⁹ Birtwistle compared Satie's music to a diamond, a multi-dimensional singular object viewed from various perspectives whereby the music (object) is already in existence. The act of composition is to work out ways to gradually reveal that object (James Dickinson, 'Mechanical – Magical: The Shared Creative Vision of Harrison Birtwistle and Paul Klee', in *Von der Fuge in Rot bis zur Zwischermaschine: Klee und die Musik*, ed. by Thomas Gartmann (Basel: Schwabe, 2020), pp. 123–124.

³⁰ Harrison Birtwistle, Interview at London Sinfonietta in Portrait: Harrison Birtwistle concert. Interviewed by Tom Service (2012), <<https://www.youtube.com/watch?v=GmNw7Ww3WqA>> [accessed 21 December 2024].

³¹ Paul Klee, *Pedagogical Sketchbook*, translated by Sibyl Moholy-Nagy, 2nd edn (New York: Praeger, pp. 16–21).

³² Paul Griffiths, *New Sounds, New Personalities: British Composers of the 1980s* (London: Faber and Faber, 1985), p. 191.

1.5.4 Layered Complexity: Contextual Complexity in Southeast Asian Culture

A composer's engagement with complexity may also stem from autoethnographic, cultural, and social contexts. This added layer of complexity can demonstrate how textural intricacies can intersect and interact within a musical fabric and across time and space. As a Malaysian composer with both Southeast Asian heritage and a Western musical education, my music incorporates this added dimension of complexity where foreground, middleground and background layers are always interchangeable to create convincing narratives. Two of Malaysia's leading composers, Tazul Tajuddin and Yii Kah Hoe, are particularly apt for investigation within this topic. Analysis of my own music will be further examined in the next chapter.

The Malay word *Tenunan* translates to 'weave' in English, and in *Tenunan II* (2001), composer Tazul Tajuddin weaves together three distinct elements: i) Islamic arabesque, ii) batik patterns, and iii) gamelan sonorities from Southeast Asia.³³ The word 'weave' is analogous to the printed patterns of textiles known as batik in Southeast Asia, particularly in Malaysia and Indonesia. The repeated patterns in batik are fundamental to the structure of Tajuddin's *Tenunan II*, which is divided into 14 sections (notated in the music score as PI, PII, PIII... PXIV), each reflecting this intricate patterning.



Fig. 1.13. Batik print that uses repeated patterns.

Islamic arabesque is one of the three core visual elements of Islamic art, alongside calligraphy and geometry. It is characterized by repeated patterns of biomorphic motifs, such as floral designs, which symbolize order and the unity of nature.³⁴ Scholar and Islamic art expert Lois

³³ Peck Jin Gan, 'Tenunan II by Tazul Izan Tajuddin (b. 1969): A Case Study of Cultural Confluence in Malaysian Contemporary Music', *Malaysian Music Journal*, 3.1 (2014), p. 19.

³⁴ Williamson, A. (n.d.) *Art of Islamic Pattern*. <<https://artofislamicpattern.com/>> (accessed: 29 November 2024).

Ibsen al Faruqi highlighted that Islamic arabesque is non-representational and another significant aspect is: *dafqah*, or 'outpouring'. Traditionally associated with poetry, *dafqah* can also be found in dance and visual arts. For example, a viewer contemplating the repetitive patterns of an arabesque might experience a series of *dafqah* releases as their eyes navigate the maze of patterns.³⁵ She added that, 'an Islamic art work is non-developmental and has no one principal climax.'³⁶ In Tajuddin's music (Fig. 1.14A), this concept is mirrored at the end of each section, where a sudden quickening figure evokes a *dafqah*-like cadential gesture just before the arrival of the subsequent section.

With visual allusions incorporated in the composition, an important sonic aspect of the work connects to the term 'byar', derived from the Balinese *Gamelan Gong Kebyar*, where it signifies a sudden flare-up or to burst open. This sonic concept is captured in *Tenunan II* through a vigorous attack (refer to Fig. 1.14B), where the entire ensemble begins the work, followed by the opening of succeeding sections with a *sforzando*, while the strings reinforce the impact with a *Bartok* snap. Throughout the nine-minute work, these elements co-exist and merge, forming relationships and connections much like the intricate patterns of batik that come together to create harmonious relations.

³⁵ Lois Ibsen al Faruqi, 'Dance as an Expression of Islamic Culture', *Dance Research Journal*, Spring - Summer 1978, Vol. 10, No. 2, p. 12, (Congress on Research in Dance).

³⁶ Lois Ibsen al Faruqi, 'Muwashshah: A Vocal Form in Islamic Culture'. *Ethnomusicology*, 19. 1 (1975), p.12. University of Illinois Press on behalf of Society for Ethnomusicology.

The image displays a musical score for a section from the Violin Concerto in D major, Op. 35, by Johannes Brahms. The score is presented in two systems, labeled Fig. 1.14A and Fig. 1.14B, with a blue arrow indicating the transition between them. The orchestral arrangement includes parts for Flute (Fl.), Glockenspiel (Glock.), Violins I (Vln. I), Violins II (Vln. II), Viola (Vla.), Violoncello (Vcl.), and Double Bass (Cb.). The chamber arrangement includes parts for Violins I (Vln. I), Violins II (Vln. II), Violas (Vla.), Violoncellos (Vcl.), and Double Basses (Cb.). The score is written in 2/4 time and features various dynamics, articulations, and performance instructions. The first system (Fig. 1.14A) shows the beginning of the section, with the Flute and Glockenspiel playing a melodic line. The Violins I and II play a rhythmic pattern, while the Viola, Violoncello, and Double Bass provide harmonic support. The second system (Fig. 1.14B) shows the continuation of the section, with the Flute and Glockenspiel playing a melodic line. The Violins I and II play a rhythmic pattern, while the Viola, Violoncello, and Double Bass provide harmonic support. The score is divided into two systems, Fig. 1.14A and Fig. 1.14B, with a blue arrow indicating the transition between them.

Fig. 1.14A. Tazul Tajuddin, *Tenunan II*, bar 7 increases activity towards cadential gesture portraying *dafqah* (outpouring) just before the next bar/section marked PII. Score courtesy of the composer.

Fig. 1.14B. PII 'byar' sonority from gamelan gong kebyar using strong attacks of sforzando and both Bartok snap and pizzicato strings.

Building on the patterns found in Southeast Asian art, similar motifs can be observed in other cultural traditions across the region, such as the *okir* and *tenalak* patterns from the Maranao and Tboli cultures in the Philippines. These intricate visual patterns, including Southeast Asian batik, parallel the sonorities of the region's music. The detailed patterns and aesthetic that completely fill the space in visual art correspond to the sonorities of interlocking and stratified polyphony, exemplified by the gamelan ensembles of Indonesia and *kulintang* ensemble of the Philippines, where layers of sound similarly occupy the entire sonic space.



Fig.1.15. Okir pattern on sireh set.



Fig.1.16. Tenalak weaving pattern.

In my view, Tajuddin's manuscript of *Tenunan II*, crafted with multiple motifs, exemplifies the Southeast Asian visual quality of 'filling up the whole space'. Sonically, while referencing the 'byar' sonority (Fig. 1.14B) from the *Gamelan Gong Kebyar*, it has a distinctive abstract quality rather than an emotional one. This abstract quality mirrors Islamic art, which is fundamentally non-representational. The multiple architectural pillars of *Tenunan II* correspond to the numerous 'mini-climaxes'³⁷ of the 'outpouring' *dafqah*-like gestures (Fig. 1.14A), contrasting with the Western tradition of building towards a single climactic point. Tajuddin uses repetition in his music to form a succession of smaller sections, to create a harmonious whole – much like the repeated patterns of the arabesque designs, symbolizing unity and oneness.

Wayang kulit, or shadow puppet play, is one of Malaysia's most prominent ancient forms of traditional theatre, with tales mainly derived from the Hindu epics taken from the Ramayana and Mahabharata. The most widespread and sole surviving form of shadow puppetry in Malaysia is the *wayang kulit* Kelantan (also known as *wayang kulit* Siam),³⁸ found in Malaysian states in close proximity to southern Thailand such as Kedah, Pahang, Terengganu and Kelantan. This form of traditional theatre is performed in villages (known as *kampung*) within a

³⁷ Ibsen al Faruqi, 'Dance as Expression', p.10.

³⁸ 'UNESCO Bid for M'sian Wayang Kulit', The Star, 2 May 2024

<<https://www.thestar.com.my/news/nation/2024/05/02/unesco-bid-for-msian-wayang-kulit>> [accessed 13 December 2024].

modest stage setting of a hut-like, roofed structure elevated three to four feet above ground level.

My first experience watching a live performance of *wayang kulit* Kelantan was in 2006 when I travelled to Machang, a *kampung* in Kelantan. I was surprised at how small and modest the stage was, but when the lights were turned off and only a small light bulb behind a thin layer of cloth was lit, the magic began. Although referred to as a traditional theatre, the main characters are puppets crafted from goatskin or cowhide leather, directed by the mastermind of the performance, the *tok dalang* (the puppet master). The immersive experience of watching this shadow play was truly mesmerizing, showcasing the *dalang*'s deft manipulation of puppets with graceful and dynamic movements across varying tempos, all ultimately projected as shadows on the screen. The experience of observing shadows instead of live performers in this art form revealed a fascinating synergy of movement, shadow and light, accentuating the distinct visual and cultural richness embedded within this artistry.

Unlike the gamelan orchestra that accompanies the *wayang kulit* in Indonesia, the ensemble for *wayang kulit* in Malaysia is smaller and typically consists of seven to eight musicians. The instruments used are categorized as follows, with all instruments grouped in pairs of varying pitch (low and high) and size (large and small) except for the *Tok Dalang*:

- **Idiophones:** *tetawak* (large hanging gongs), *canang* (small knobbed gongs in a wooden rack), and *kesi* (small hand cymbals).
- **Membranophones:** Three types of drums are used—*gedumbak* (double-headed, goblet-shaped), *gendang* (double-headed, elongated barrel-shaped), and *geduk* (short, double-headed barrel-shaped drum) played with a pair of wooden sticks.
- **Aerophone:** *Serunai*, a quadruple-reed shawm with a range of approximately 1½ octaves
- **Tok Dalang:** story teller, puppeteer, singer



Fig.1.17. Observing a *Wayang Kulit Kelantan* performance in Kampung Machang, Kelantan, 2006. Author's own photographs.

All music repertoire in the *wayang kulit* is passed down through oral tradition and features a stratified texture of at least three musical layers. The first layer comprises the melodic line, which is played by the *serunai* or sung by the *tok dalang*. The second layer consists of the rhythmic patterns played by the drums and finally the gong unit, performed using idiophones. The most important structural element is the gong unit, known as the *gongan*.³⁹ The *gongan* serves as the foundation of musical form with the number of beats in the gong unit or period based on multiples of two. This two-beat stress pattern consistently features a weak stress on the first beat and a strong stress on the second beat.⁴⁰ In *wayang kulit* music, this two-note beat stress is played by the *kesi* (hand cymbals) and a pair of *canang* (small knobbed gong) at intervals of a second apart sounding like a slow trill in Western musical terms. The first beat, 'ding' (a higher pitch), represents the weak stress followed by 'Dong' (a lower pitch) on the second beat, which carries the strong stress. Here is a cyclical representation of the basic eight-beat gong unit between the *canang* (pair of knobbed gongs) and *tetawak* (pair of large gongs). D, d represents *canang* and G, g represents *tetawak*.

³⁹ Judith Becker, *Toward a Theory of the Derivation of Central Javanese Gamelan Gonggan*, in *Traditional Music in Modern Java* (Honolulu: University Press of Hawaii, 1980), Appendix IV.

⁴⁰ Patricia Matusky and Tan Sook Beng, *The Music of Malaysia: The Classical, Folk and Syncretic Traditions* (Aldershot: Ashgate, 2004), pp. 19–23.

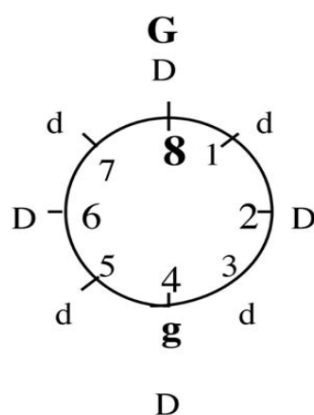


Fig 1.18. The basic eight-beat gongan.

Gongan is a duo for oboe and piano composed in 2008 by Malaysian composer Yii Kah Hoe. A prolific and versatile musician, Yii originally studied the Chinese flute (dizi) before venturing into composition. He is also an art graduate from Xian, China where he spent five years specializing in ink art and Chinese paintings. Hailing from Sarawak, East Malaysia, Yii has a deep interest in ethnic music, conducting fieldwork in the forests of Borneo, Sarawak for traditional music research and field recordings. Given that much of the traditional music repertoire is transmitted orally, improvisation is a fundamental element in both Yii's music as a composer and a performer.

In improvisation, people from many different backgrounds can come together and make music. ... I think this is a wonderful thing. ... The techniques I use when I compose classical music also influence my improvising. For example, in classical music, you decide on a motif and use that as a material to develop within the score.⁴¹

Gongan opens with a two-note motif reminiscent of the opening of the traditional *wayang kulit* performance, evoking the rhythmic dialogue of the *canang* and *kesi* as they articulate the characteristic two-note beat stress. This temporal cycle, centred around the two-note motif (C – B flat) forms the basis of the work, serving as a canvas on which the composer paints his sounds and visualizes the movements of the shadow puppets. Throughout this 12-minute cycle, the two-note motif is repeated, developed and transformed mirroring the dynamic interplay of shadow and light. Yii also references the traditional instruments in *Gongan*. For example, in the beginning of the work, he uses a glass rod to be placed over the strings of the piano in order to obtain a percussive, jangling sound referencing the pair of *kesi*.

⁴¹ Yii Kah Hoe, interview by Asian Music Network, February 2018, <<http://asianmusic-network.com/en/archive/2018/02/yii-kah-hoe.html>> [accessed 13 December 2024].

5 $\text{♩} = c.52$

away from piano

fff * imitating kesi

ppp *sempre*
(depressed silently and secure by pedal II)

inside piano pizz.

mp (lightly touch vibrating string with finger nail) *sempre*

--- (PI.) ---
PII. --- (sempre) ---

* Kesi is metal percussion instrument of Malays shadow puppet (wayang kulit). It looks like small Chinese cymbal.

Fig. 1.19. Yii Kah Hoe: *Gongan* mm. 5-7. Score courtesy of composer.

In bar 36, the composer integrates the eight-beat gongan unit in the piano's lowest notes in the left hand, while simultaneously shifting the two-note motive up a semitone to C# - B. The right hand is layered with a faster, higher register line, creating a stratified texture.

36

mp *sempre*

8 1 2 3 4 5 6 7 8 1 2 3 4 5 6 7 8

Fig. 1.20. Yii Kah Hoe: *Gongan* mm. 36-38 integrating 8-beat gongan pattern in piano, LH. Score courtesy of composer.

At the midpoint of the piece, the two-beat stress pattern becomes redistributed between the oboe and piano, resulting in a more unpredictable texture enhanced by octave displacements, varied articulations and dynamic contrasts.



Fig. 1.21. Yii Kah Hoe, *Gongan* mm. 98-99. Score courtesy of composer.

Both Tazul Tajuddin and Yii Kah Hoe have demonstrated how their musics draw upon repeated elements, patterns, gestures deeply influenced by their cultural surroundings and background. By integrating Western compositional techniques with local traditions, they craft rich, multi-layered soundworlds, reflecting the diverse heritage of Southeast Asia and achieving distinct musical voices.

1.6 RESEARCH METHODOLOGY

1.6.1 Researching, Connecting, Transforming

Graeme Sullivan describes how research is a transformative act – being a profound engagement that changes both the researcher and the researched – the process can evoke something new.⁴²

In my practice as a composer, educator and researcher, I am constantly observing and aurally examining repetition as a transformative process. The cyclic nature of my professional development interconnects these three roles, enabling the exploration of interwoven relationships between composition, education and research. Similarly, the compositional process that forms the foundations of my research — repetition, patterns, and accumulation — begins with micro materials that undergo transformation through the recursive use of

⁴² Graeme Sullivan 'Research acts in art practice', *Studies in Art Education: A Journal of Issues and Research*, 48 (1), pp. 19–35.

materials, forming patterns that eventually accumulate into textures, generating a macro structure.

Throughout my PhD journey, the foundational process illustrated in Fig. 1.22 — *Repetition, Patterns, Accumulation* — has evolved into a defining methodology that integrates both practice-led and research-led approaches. Beginning with small-scale musical ideas, I use repetition as a generative force, enabling micro materials to develop into patterns that gradually accumulate into larger textural and structural frameworks. This recursive cycle underpins not only my compositional process but also the iterative nature of my research methodology, in which creative practice and theoretical inquiry continually inform and reshape one another (see Fig. 1.24). The resulting methodologies are grounded in personal and emotional resonance, offering insights across interrelated dimensions of form/pattern, place, and people, as explored in the following chapters.

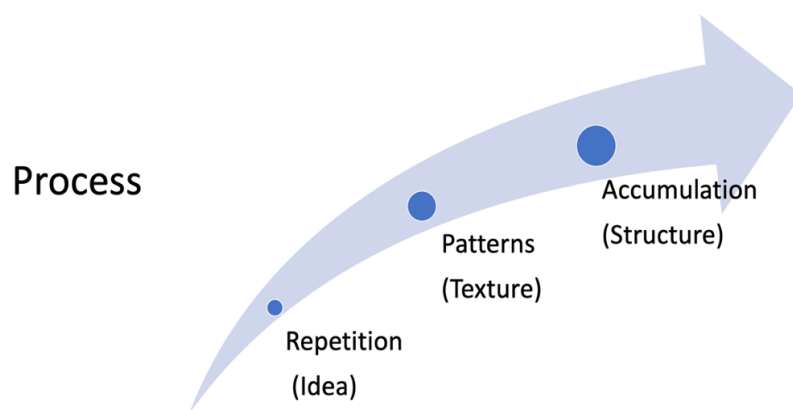


Fig. 1.22. Process that initiated my PhD research – Repetition, Patterns, Accumulation.

1.6.2 Iterative Cyclic Web: The Spider-Web

Due to the cyclical and interwoven nature of my compositional process and research, Smith and Dean's 'iterative cyclic web' is highly relevant to my portfolio of compositions, complementing theoretical compositional sources. My compositional process of repetition, patterns and accumulation, can be seen as a practical demonstration of the principles of the iterative cyclic web, where materials evolve through cycles of repetition and transformation, and structural accumulations are continuously reshaped through iterative cycles, leading to varying compositional outcomes.

Referring to the diagram below, once the material or idea is generated, the intended methods can start at any point.⁴³ This supports my compositional and research approach, in which the cyclic nature allows a free rein in both the compositional process and methodology.

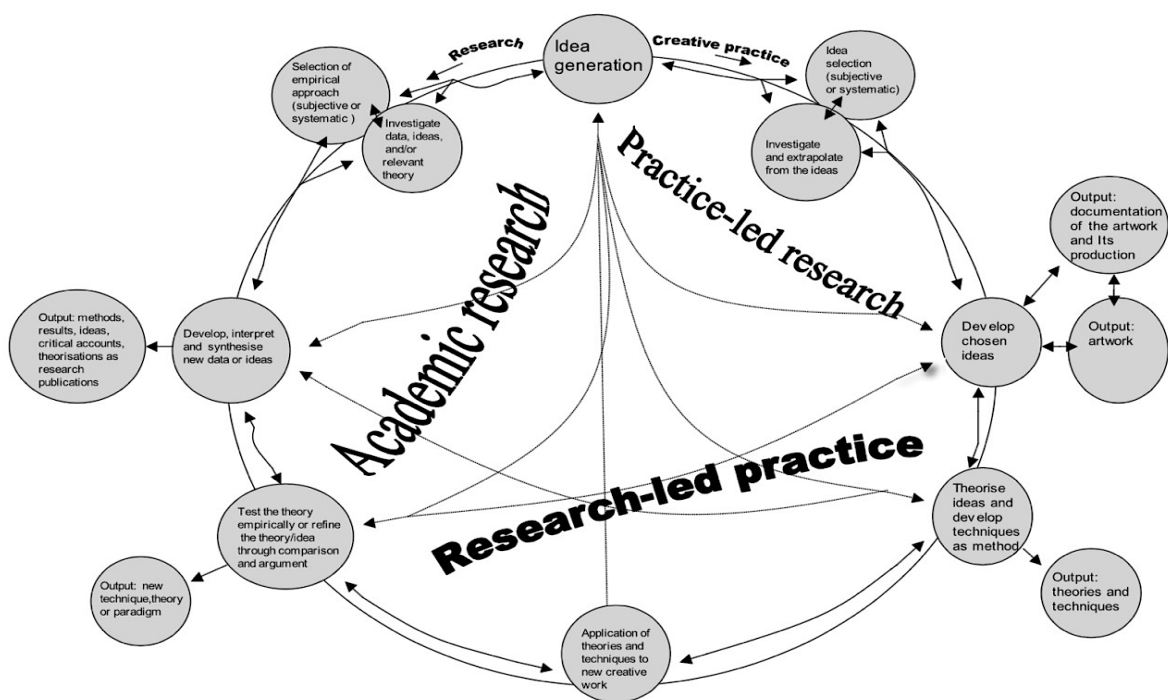


Fig. 1.23. Smith and Dean's Iterative Cyclic Web.

⁴³ Hazel Smith and Roger T. Dean, *Practice-Led Research, Research-Led Practice in the Creative Arts* (Edinburgh, United Kingdom: Edinburgh University Press, 2009), p. 19.

In this diagram, modeled after Smith and Dean's 'iterative cyclic web', illustrates how creative practice informs my research and vice versa. The right side of the diagram represents my compositional process of repetition, patterns and accumulation. On the left side, the diagram depicts my research into contextual complexities, which further categorizes my compositions based on form/patterns, place and people. Together, these creative and theoretical practices are interconnected and non-linear, allowing them to occur at any time in the process.

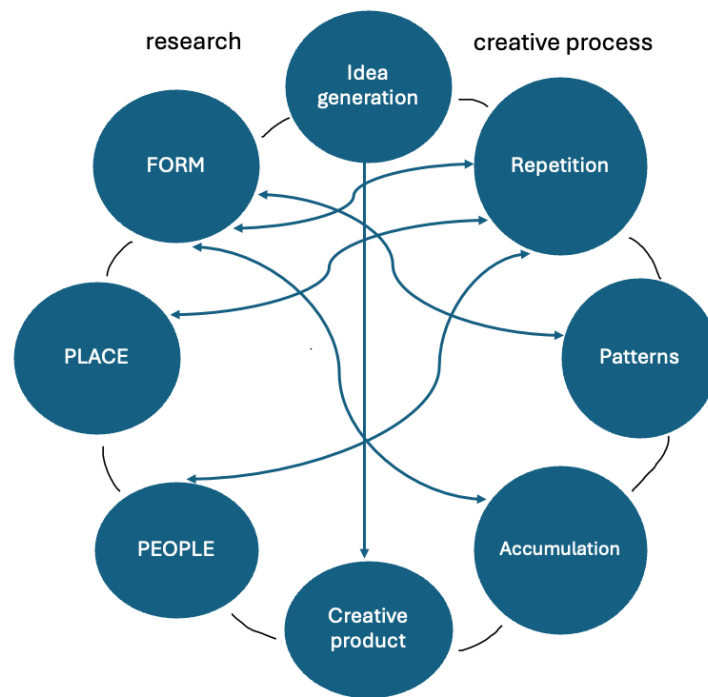


Fig. 1.24. My own cyclic web based on Smith and Dean's model.

The table on the following page (Table 1.1) presents my composition portfolio categorized according to repetition of patterns, the connection to places imbued with Southeast Asian cultural nuances, and personal narratives linking these works to individuals and memories. Collectively, these classifications establish a contextual groundwork for the reflections and evaluations in the forthcoming chapters.

WORK	FORM / PATTERNS	PLACE	PEOPLE
	Repetition and Form (<i>Continuum</i> series, initiated by minimalism, visual arts)	Repetition and Resonances of Southeast Asian Culture (SEA) (Forms, Patterns in SEA, <i>Bell Series</i>)	Repetition and Memory (connection to people)
Crossings			
Jalinan			
Echoes			
Montage			
Radiance			
Sembilan			
Empat			
Verdure			

Table 1.1. Portfolio of Compositions According to Repetition in Patterns, Place, and People.

Chapter Two: *Patterns* – Form and Continuity

Repetition is never the same in my work; it's about change and evolution. It creates meaning by constantly shifting context and perspective.

— Birtwistle

2.1 *Continuum* Series – Repetition Patterns Accumulation

This chapter examines two works, *Echoes* and *Montage*, the final two works of my *Continuum* Series that began in 2017. This series consists of five interconnected works, with *Echoes* and *Montage* forming part of my composition portfolio. Although the first three works of the series predate my PhD studies as a distance learner, it exemplifies the ‘iterative cyclic web’ by demonstrating how my practice remains continually shaped by surrounding events, establishing continuity and interconnectedness. It is through these interwoven threads that I am able to integrate both practice and research into a coherent artistic language. In this series of five works, repeated elements serve as a unifying feature, while each work is scored for a different instrumentation, creating contrast within the series.

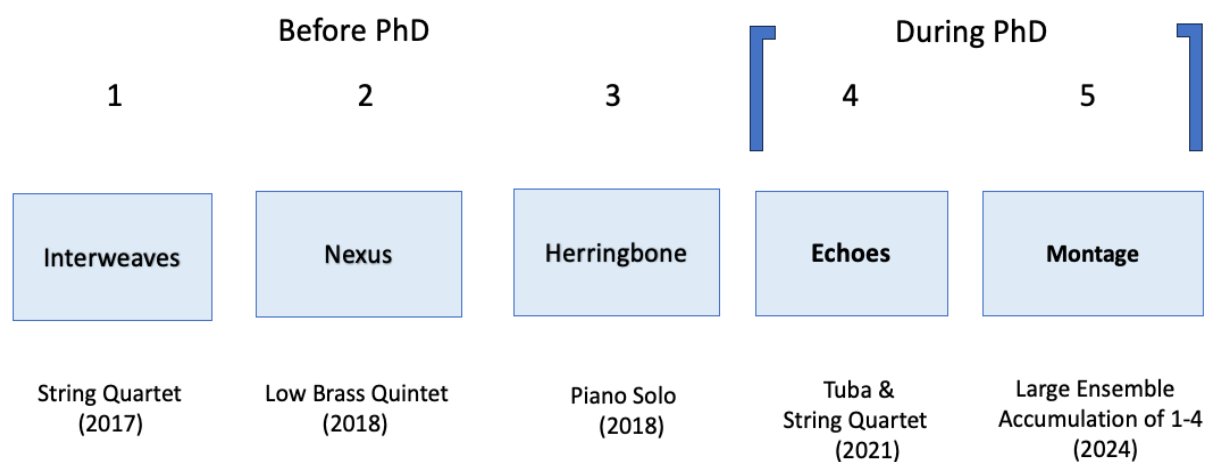


Fig. 2.1. Five compositions of differing instrumentation in my *Continuum* Series using repetitive gestures for interconnectedness.

I started the *Continuum* Series in 2017, initially using repetitive elements as a practical means of continuing the creative process while balancing work commitments. However, as I progressed through the series, this practical approach gradually shifted to an artistic one, resulting in self-discovery and transformative outcomes. Stravinsky once said, ‘strength is born

of constraint and dies in freedom.⁴⁴ The use of controlled material in various ways of repetition has indeed liberated my practice, stimulated my creativity, and ultimately leading me to a meaningful journey. Researching Harrison Birtwistle during my time at the Conservatoire, revealed numerous parallels between his approach and my own compositional thought processes, particularly in terms of visual art influences and the use of repetition.

Birtwistle's *Carmen Arcadiae Mechanicae Perpetuum* (1977) use of independent layers of time to create 'temporal layers' profoundly influenced the last two works of my five-part series, *Echoes* and *Montage*. In the earlier works of the series — *Interweaves*, *Nexus*, and *Herringbone* (composed prior to my PhD studies) — I employed three distinct repetitive procedures to establish continuity and interconnectedness in the *Continuum* Series.

The three repetitive procedures in the *Continuum* Series:

- i. Material from the end of one piece recurs at the beginning of the next piece
- ii. A repeated motif consisting of minor and major seconds that appears in varied forms and patterns throughout each piece
- iii. New material introduced at any point within each piece gradually accumulates, emerging as a prominent element that connects the pieces

These repetitive procedures continue to be the driving force in *Echoes* and *Montage*, now interwoven with new elements. Each new piece spawned a novel and emotional journey, integrating recurring elements from preceding pieces. This approach allowed a consistent evolution of concepts across the entire series.

2.2 *Echoes* for tuba and string quartet (2021)

Echoes was written for Brett Stemple (tuba) and the *T'ang Quartet*, Singapore. The word that best defines *Echoes* is 'connections', reflecting the relationships that shaped this piece. The second work in my *Montage* series, *Nexus* for low brass quintet, sparked a greater interest in writing for brass, particularly low brass. This fascination led me to feature the tuba in an unusual combination with the string quartet in *Echoes*.

⁴⁴ Jonathan Harvey, *Music and Inspiration* (London: Faber & Faber, 1999), p. 129.

Two key connections underpin the creation of this work:

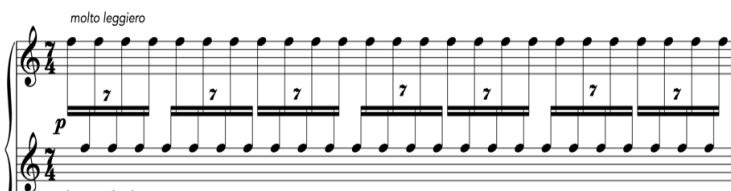
- i) the three repetitive procedures from the *Continuum Series*
- ii) connection to people and sounds in the unique instrumentation of tuba and strings

2.2.1 Use of Repetitive Procedures in *Echoes*

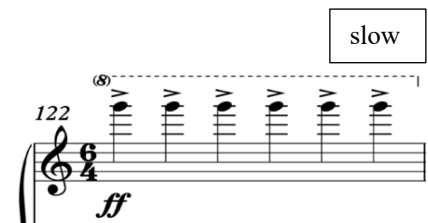
- i) **Repetitive Procedure 1: Music material from the end of one piece recurs at the beginning of the next piece**

The work preceding *Echoes* in my series is *Herringbone* for piano solo. *Herringbone's* instrumentation and virtuosic character is entirely contrasting to the subtle opening of *Echoes*. The ending of *Herringbone* features a deceleration of the repeated note introduced at the beginning of the piece. This deceleration is continued in *Echoes*, where the tuba plays a longer, sustained C-note through the opening bars. By bar 5, the tuba integrates with the tremolo strings, resulting in an entirely different presentation, enhanced by the varied instrumental groupings between the tuba and string quartet.

Beginning of *Herringbone* for piano solo



Ending of *Herringbone*



Beginning of *Echoes*

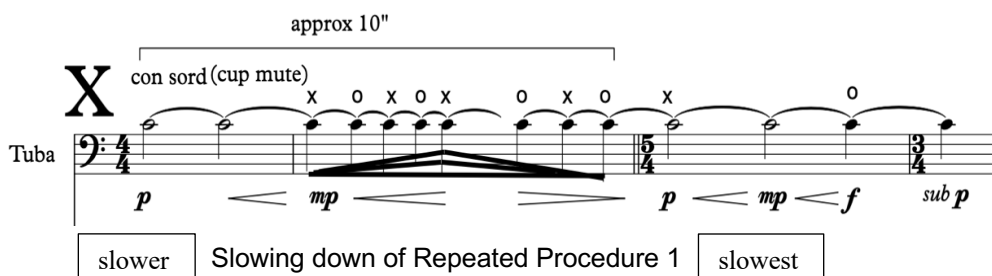


Fig. 2.2. Connection from *Herringbone* to *Echoes*.

ii) Repetitive Procedure 2: Motif of Minor and Major 2nds

This repeated motif is heard throughout the *Continuum* Series in various forms.

1. Interweaves (string quartet)



2. Nexus (low brass quintet)

4/4 In time ♩ = 120

X (♩ = 64) approx 8"

C

3. Herringbone (piano solo)

Fig. 2.3. Repeated motif of Minor and Major 2nds presented in various forms.

INTERWEAVES NEXUS HERRINGBONE ECHOES ending highlights (0,2) MONTAGE

Fig. 2.4. Further reduction of repeated motif in minor and major 2nds.

In *Echoes*, it is first heard as a harmonic gesture played *sul pont* by the strings.

[illegible]

Fig. 2.5. Shapes with matching colours showing minor 2nd and major 2nds relationships.

Here is another example in which all instruments play different versions of the same motif simultaneously. The intention is to achieve unpredictability through four different layers in the quartet, all built from the same material, akin to Birtwistle's use of multi-layered textures.

116

120

Fig. 2.6. Bars 116-123 four different layers in *Echoes*.

iii) **Repetitive Procedure 3: New material introduced at any point within each piece gradually accumulates, emerging as a prominent element that connects the pieces**

At the conclusion of *Nexus* (the second work of the series), there is a sustained, organ-like sonority on a B-flat major chord. This new sonority carries over into the sostenuto pedal of the piano in the third work of the series, *Herringbone*. This organ-like sound reappears at the conclusion of *Echoes*, performed by strings. It recalls the original sounds introduced in *Nexus* by the tubas, now transformed to evoke a sense of timelessness and immanence.

Ending of Nexus

organ-like B flat Major chord in tubas

Beginning of Herringbone

B flat major chord held by sost pedal

Ending of Echoes

organ-like chord in strings

Fig. 2.7. Organ-like sonorities from *Nexus*, *Herringbone* and *Echoes*.

2.2.2 Connection to sounds and people

Brass sounds

The opening of the string quartet draws inspiration from two of my preferred techniques in brass writing: rapid, sudden changes in dynamics (from crescendo to diminuendo) and the use of muting. These are integrated alongside gestures reminiscent of flutter-tonguing and rapid tonguing, translated into the string idiom through abrupt dynamic shifts and wa-wa mute-like effects.

Cello and Tuba connection

Selected tuba solo passages in *Echoes* are written in a manner reminiscent of a cellist's arpeggiation across the strings (Rehearsal D). A further connection with the tuba lies in the cello's lowest C and highest A open strings of the cello. Throughout the piece, the repetition of harmonic material derived from the natural overtone series of these open strings establishes a harmonic framework that shapes the musical architecture. The two groups of echoing instruments were key in deciding upon the title *Echoes*.

Connection with People

Echoes is written for my colleagues in the Yong Siew Toh Conservatory; in particular Brett Stemple, Head of Brass & Percussion and the *T'ang Quartet*, Quartet-in-Residence. Han Oh, a violist for the *T'ang Quartet*, Brett and I were alumni of the Eastman School of Music with our paths having crossed again as colleagues at the Yong Siew Toh Conservatory.

The ending of *Echoes* recapitulates its opening section but evolves through a new tuba version. This version introduces a decorated and renewed C, leading into the next work, *Montage* in the series. *Echoes* is an allegory of a journey between old friends and colleagues - resulting in new discoveries from a synergy of repeated and connected elements.

2.3 *Montage* for Low Brass Quintet, String Quartet and Piano (2024)

Montage serves as the concluding work of my five-part *Continuum* Series. This deeply personal finale draws on materials from the four preceding pieces to create an ethereal and cohesive closing chapter. While *Montage* completes the *Continuum* Series, it also marks the culmination of my PhD journey. The work pays tribute to my late father, whose

enduring presence has been a guiding inspiration throughout both artistic and academic phases of this process.

In the culmination of the finale, a new ‘re’ element – meaning resonance, not a prefix – is introduced. It draws on the sostenuto pedal of the piano in *Herringbone* and the organ-like sonorities carried over from *Echoes*. Within *Montage*, these musical elements accumulate and heighten, serving as cohesive thread binding all the components of the series into a profound denouement. Following the five-part structural design of the series, *Montage* is similarly structured around five distinct episodes, mirroring the overall framework of the entire series.

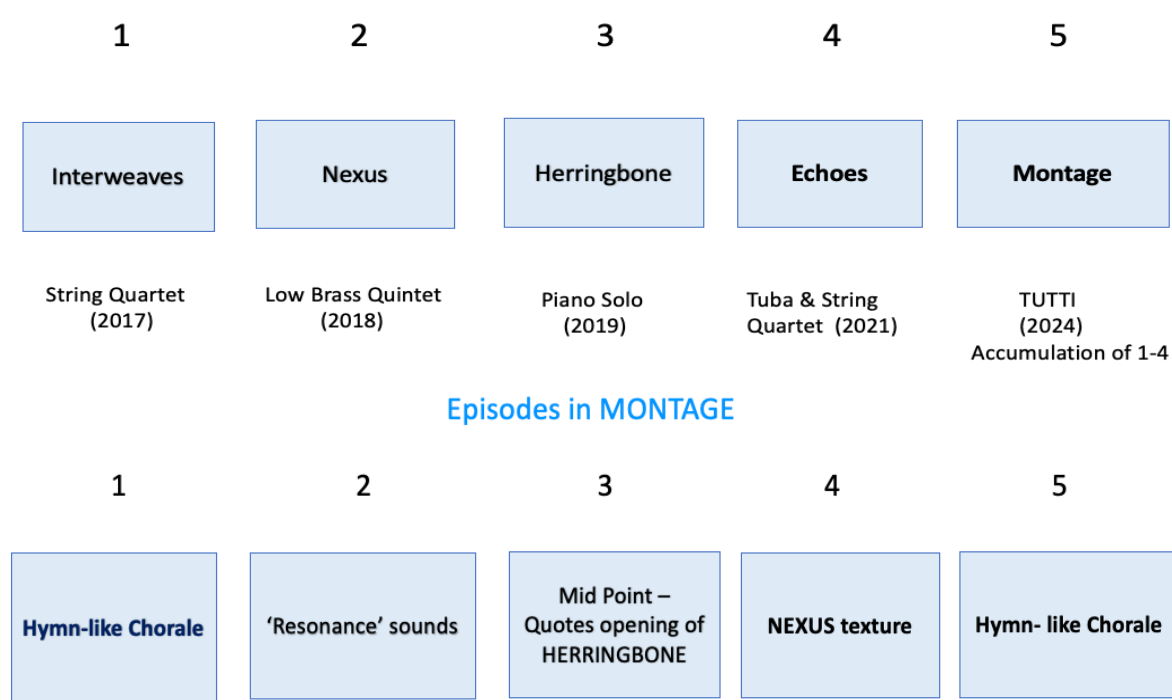


Fig. 2.8. Five episodes of *Montage* following the five-part structural design of the *Continuum Series*.

2.3.1 Five Episodes in *Montage*

i) Episode 1: Hymn-like Chorale

Montage opens with a hymn-like chorale played by the muted brass evoking voices heard from a distance. This opening is revisited at the end of the work, this time performed by muted strings. The hymn-like chorales have a special significance, serving as a musical homage to my father. In his later years, he attended church and engaged deeply with the study of scripture. He was particularly fond of singing church hymns during morning

services, and I have vivid memories of playing Bach for him, particularly *Wachet auf, ruft uns die Stimme* (BWV 140).

The return of strings in the closing section of *Montage* hints at the strings in Nr. 4 Choral - *Zion hört die Wächter singen*. Additionally, the unintentional use of flats and a scale-like contour in my hymn-like chorale may echo Bach's *Choral*, further connecting these sound memories to the musical dialogues I shared with my father.

ii) Episode 2: Resonance Sounds

The resonant tones produced by the sostenuto pedal of the piano, are now referred to as 'resonance sounds' for their sustaining and prolonged qualitative attributes. These sounds serve a crucial function at pivotal junctures and in building up climactic moments within the piece. In the example below, the sostenuto pedal, first heard in *Herringbone* (Fig. 2.9), is used in the second episode of *Montage* where the original B-flat major chord held by the sostenuto pedal from *Herringbone* is now heard as an extension of the B-flat major chord played by the piano and highlighted by Trombone 1 at Letter I.

Opening of Herringbone

Scurryingly $\text{♩} = 92$

molto leggiero

p

depress silently

sostenuto pedal throughout
no damper pedal until b.58

Sostenuto pedal from piano

Letter I of Montage

molto rit....

I * direct sound towards piano

sf *l.v.* *l.v.*

Sostenuto pedal from piano

sf *l.v.* *l.v.*

Black and white note chromatic cluster

depress silently

8va.....

sostenuto pedal throughout

Fig. 2.9. Resonance sounds using sostenuto pedal from *Herringbone* brought forward to *Montage*.

The organ-like sounds, previously only heard as an undertone in *Echoes*, now permeate the entire ensemble. This is evident in Fig. 2.10, where the piano clusters are echoed by sustained chords from the strings and brass.

The musical score for Fig. 2.10, titled "Montage", is written for a large ensemble. The score is divided into two systems. The first system includes parts for Trb 1, Trb 2, B Trb, Tuba 1, and Tuba 2. The second system includes parts for Piano, Vln I, Vln II, Viola, and Cello. The tempo starts at 112, increases to 116, and then to 126. The score shows piano clusters in the strings and brass, with sustained chords in the piano and strings. The tempo markings are "poco accel". The score is divided into two systems, with the first system starting at measure 116. The piano part features clusters of notes, and the strings and brass provide sustained chords. The tempo changes are indicated by a double bar line and a new tempo marking.

Fig. 2.10. *Montage*: Organ-like sounds portrayed by piano clusters echoed by chords from brass and strings.

In the final moments of *Montage*, an extended A-flat note is exchanged among the trio of trombones. This marks a fundamental structural point that focuses on the resonance quality. I wanted to create a sound that feels continuous and endless, reflecting the enduring voice of my father which will continue to resonate on a personal level. Artistically, this signifies the infinite potential of ideas and creative direction, suggesting a continuation for future works or series.

iii) Episode 3: Quotes from the opening texture of *Herringbone*

As the piano solo work, *Herringbone* is positioned in the middle of the series, I aimed to reference it towards the midway point of *Montage*. The opening of *Herringbone*, which features a single repeated note F in a toccata-like texture, resurfaces with different instrumentation and timbre: a rapid single-note tremolo played by two tubas, later joined by the strings. This creates a virtuosic and hypnotic effect that sets the stage for the muted trombones in the subsequent episode. Similar to the extended A-flat note of the trombones, the rapid tremolo produced by the tubas positioned at opposite ends of the quintet, envelops the ensemble with a sound characterized by an organic, circular quality.

Scurryingly ♩ = 84 - 92
molto leggiero

p

depress silently

sostenuto pedal throughout
 no damper pedal until b. 58

Fig. 2.11A. Opening of *Herringbone*.

6"

play for 12 seconds

come in after 6 seconds

come in after 4 seconds

finger tremolo

same note trill [on F] 0-1

play for 12 seconds

play for 6 seconds

4 seconds

6 seconds

come in after 14 seconds

♩ = 108 ()

sempre ff

continue playing until Z

Fig. 2.11B. Piano texture from Fig. 2.11A. reimaged in tubas playing rapid single-note tremolo in *Montage*

iv) Episode 4: *Nexus* texture

The fourth episode draws material from *Nexus*, the second work in the series. In the previous episode, the tubas extend the concept introduced in *Herringbone* by employing a rapid finger tremolo, which transitions seamlessly into a texture of continuous rapid tonguing and flutter-tonguing by muted trombones. Unlike previous sections, this passage not only recalls the texture of *Nexus* but also incorporates the motif of minor and major seconds. Through the use of various tonguing techniques, the motif becomes intentionally blurred and indistinct. This gradual and elusive reintroduction is designed to generate anticipation, hinting a larger recapitulation as all musical ideas from earlier works in the series have been reintroduced.

Fig. 2.12A. *Nexus* opening texture.

Fig. 2.12B. *Montage*: Recalling *Nexus* texture.

v) Episode 5: Recapitulation of Hymn-like Chorale

Be it performing piano sonatas or studying symphonies, I have always been fascinated in approaching recapitulations, as the ‘thrill’ of the journey leading up to the destination has often proven more compelling than arriving at the destination itself. In crafting my own recapitulation, challenges were encountered to weave in elements of the past and present, particularly in terms of instrumentation, structure, memories and balancing the analytical with the emotional.

Reflecting on the connections that initiated this series in 2017, I revisited the concluding section of *Interweaves* (see Fig. 2.13 below), the inaugural movement scored for string quartet. This section featured chords with varied spacing and timbres, shifting between dark and light, sonorous and pale. I was immediately drawn to Birtwistle’s concept of independent layers of time, where ‘repetition is redefining your memory’.⁴⁵

The musical score is for a string quartet and piano. It is in 4/4 time, marked 'Molto Calmo' with a tempo of 66. The score is divided into two systems. The first system starts at measure 109 and ends at measure 112. The second system starts at measure 113 and ends at measure 116. The string quartet (Violin I, Violin II, Viola, and Cello) plays static chords with varying vibrato (molto vib., non vib., normal vib.) and dynamics (p, pp). The piano part (right hand) plays a melodic line with a 'Con Sord' (con sordina) effect, also with varying vibrato and dynamics (p, pp). The score includes a 'U' (Unison) marking at the beginning of the first system and a '3' (Triplet) marking at the beginning of the second system. The key signature is one flat (B-flat).

Fig. 2.13. Concluding section of *Interweaves*.

Approaching memory as a timeless notion, I structured the recapitulation into three temporal layers (see Fig. 2.14). The first layer involved the brass quintet in rapid motion (b. 153-154) and the second layer represented stillness of time, with the string quartet playing static chords reminiscent of the ending of *Interweaves*. These chords used harmonies derived from *Montage*’s opening hymn-like chorale blending harmonic and non-harmonic timbres (b. 153-158). The third layer featured the piano, mirroring the movement of the brass quintet but at

⁴⁵ Harrison Birtwistle, *Birtwistle's Clocks*. YouTube video, 2:56, posted by Jeroen de Boer, 7 December 2010. <<https://www.youtube.com/watch?v=6sHPND4kJ10>> [accessed 30 January 2025].

varying tempos. As the brass quintet gradually slowed down, the piano assumes the momentum (b. 156-158), creating a hazy, blurred vision – an evocation of the past – while simultaneously renewing the present as the final chorale enters, now performed by muted strings in a prayerful tone. This multi-temporal recapitulation draws on Charles Ives' cumulative form, where musical fragments accumulate meaning over time and reappear in transformed contexts. Simultaneously, Birtwistle's concept of independent temporal strata informs the layered pacing, where different instrumental groups exist within their own temporal frameworks. The final muted chorale, now prayerful and distant, becomes the culmination of all these layers — a sonic memory suspended between past and present, with the chorales functioning as enduring traces of my father across the work.

1st Layer: Brass in rapid motion and free rhythm

approx 6'-7" approx 12" **CC** Like a memory ♩ = 72

slow down to single tongue not in time with each other molto rit change to cup mute

Trb 1, Trb 2, B Trb, Tuba 1, Tuba 2

3rd Layer: Piano taking momentum from brass, in a faster tempo than strings

♩ = 88 * Piano tempo should be faster than strings. Repeat b. 163-166 and listen until you align with the viola at b.167

very smooth and solitary with no sudden accents

2nd Layer: Strings in static chords, stillness of time

approx 9" **CC** Like a memory ♩ = 72

senza sord

Vln I, Vln II, Viola, Cello

Fig. 2.14. *Montage*: Three layers of time mm. 153-158.

This concluding episode which also acts as the recapitulation of the first episode, not only brings my *Continuum* Series to a close but also epitomizes the grand finale of my entire composition portfolio. It brings back sonic memories and autobiographical reflections, while symbolizing repetition as a bridge between past and present, marking the culmination of my PhD journey that began in 2020.

2.4 Summary of Research Aims and Outcomes

In this closing section of the chapter, I will outline the research aims and outcomes in relation to the two works, *Echoes* and *Montage*.

Weaving Time: Repetition as a Journey from Past to Present

The crucial role of my large ensemble work, *Montage* lies in how this finale symbolises an echo of the past – namely, the preceding four pieces from the series (*Interweaves*, *Nexus*, *Herringbone* and *Echoes*) — as well as a personal homage to my father. These elements are interwoven into a mosaic of memories via a repetition of textures, motifs and sounds linking the earlier individual works into one coherent entity. While the predictable and repeated elements are presented in new forms, the culminative approach brings back sonic memories and autobiographical reflections, ultimately symbolizing repetition as a bridge between past and present.

Repetition and Transformation in Experience

The use of repetition as a cyclical form enables an immersive experience for both performers and audience. In rehearsals and performances of my works, I observe a bond emerging between the performers and listeners when they themselves discover the familiarity and the predictability of repeating patterns. Repetition therefore becomes more than a mere compositional or structural device – it serves as a means of deepened engagement, creating an emotional resonance that adds another layer to my artistic expression.

Moving Forward to a New Series

As my *Continuum* Series initiated in 2017 draws to a close, the resonance carried by the last note from *Montage* persists, motivating me to embark on a new body of work —the *Bell* Series— which will be discussed in the next chapter.

Chapter Three: *Place* – Forms, Patterns and Cultural Resonance in Southeast Asian Culture

The unity of the work has a resonance all its own. Its echo, caught by our soul, sounds nearer and nearer.

— Stravinsky

This chapter discusses five works from my portfolio – *Jalanan*, *Radiance*, *Sembilan*, *Empat* and *Verdure*, drawing influences from Southeast Asia, both as a geographical context of my heritage and as a source shaping my compositional approach. In these works, repetition manifests itself through sonic continuity, architectural and structural influences, as well as resonances found in both Southeast Asian and Western musical landscapes. By engaging with these contextual complexities, I continue to explore how predictability and unpredictability function at both micro and macro structural levels.

With the exception of *Jalanan* for string quartet, the remaining four works — *Radiance*, *Sembilan*, *Empat* and *Verdure* – belong to a new series titled the *Bell Series* with *Radiance* as the inaugural work. Introduced at the end of the previous chapter, this series represents a progression from the earlier body of work that initiated my PhD journey, moving toward a forward-looking artistic development.

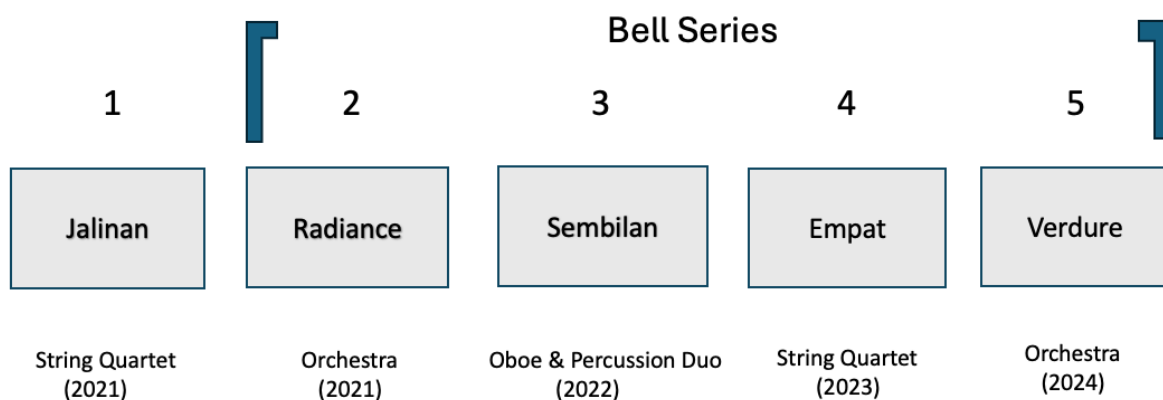


Fig. 3.1. *Bell Series* (2021 – 2024).

3.1 *Jalanan* for String Quartet (2021)

A few notes are repeated; long sustained notes are often heard within these repetitions in a melismatic fashion. At times, the sustained notes slide with a glissando effect, resembling a sigh, and sometimes transform into short, repeating motifs. Although I hear familiarity within these repetitive gestures, each iteration brings subtle variations and captivating complexity in both musical and emotional aspects.. These intricate nuances profoundly shaped my early auditory experiences and laid the foundation for my musical sensibilities.

(Quoted from Programme Notes)⁴⁶

These were the sounds of the Azan, the Muslim call to prayer, heard five times daily in my native Malaysia. Despite my formal education in Western music, these early auditory experiences and cultural influences have shaped my conscious musical preferences and subconscious impulses in my compositional approach. This chapter explores how these early auditory influences have impacted my compositions, with particular focus on *Jalanan*, *Sembilan* and *Empat*.

Jalanan (*Interweaves* in English) for string quartet was composed in 2021 during the Covid-19 pandemic, a period in which restricted and prohibitive travel measures in place resulted in a deep longing for home. Whilst envisaging a composition that would evoke the essence of Malaysia, my thoughts turned immediately to a uniquely Malaysian sound—the Azan, or the Islamic call to prayer. *Jalanan* embraces elements of maqam music, characterised by the microtonal inflections comparable to the melodious intonations of the muezzin's call. Musically, the Azan's phrases and structure captivated me for their ethereal and compelling qualities. This sacred call features a melismatic range with sustained tones, ornamentation, and prolonged passages. Throughout *Jalanan*, the string quartet utilises techniques such as glissandi, two-note slides, melismas, sustained notes, and short motifs.

To avoid confusion, it is important to note that although *Jalanan* shares its English translation with *Interweaves* (2017) — the first work in my *Continuum* Series — they are separate compositions. However, *Jalanan* draws from the last section of *Interweaves*, where the texture (from Rehearsal H onwards) emulates the vocal contours of the Azan: repetitive, ornate, and improvisatory. The concept of 'varied repetition' is evident as phrases echo the prayer's distinctive ornamentation and melodic extensions.

⁴⁶ Adeline Wong, *Program Notes for the Three Nations Concert*, Malaysian Philharmonic Orchestra, Kuala Lumpur, 22 July 2022.

Fig. 3.2 presents my transcription of the Azan, based on a 2018 recording from Masjid Negara, Kuala Lumpur, Malaysia.



Fig. 3.2. Transcription of the Azan, derived from a 2018 recording at Masjid Negara (National Mosque), Kuala Lumpur, Malaysia.

The transcription above illustrates melodic motion, pauses, improvised gestures, and the characteristic range found in an example of the Azan in Malaysia.

- (a) Upward intonation
- (b) Downward contour
- (c) Pause on longer note value
- (d) Small noteheads indicating quick melismas
- (e) Narrow ambitus of mainly perfect 5th

X Prayer - like (approx $\text{♩} = 52$)

This section must be played freely, smoothly and seamlessly. It must sound improvisatory. The time signature is only meant for practical purposes. This section should be played without barlines and without stress of downbeats unless otherwise indicated.

54 **H**

Violin I *mf cantabile* (a)

Violin II *mf cantabile*

Viola *mf cantabile*

Cello *mf cantabile*

* After everyone has turned pages, violin I cues to start section II

55 *freely and espressively*

Vln I (b) *p* (c) *mf*

Vln II (c) *p* *mp*

Viola *freely and espressively* *mp* *mf* *p* (c)

Cello *freely and espressively* *mp* *p*

56

Vln I *mf cantabile*

Vln II *mf cantabile* *p* *mf cantabile* 5

Viola (d) *mf cantabile* 6 *p* *mf cantabile*

Cello (c) *p* *mf cantabile* 6 *p*

Fig. 3.3. Ending of *Jalinan* emulating vocal contours of the Azan.

	Music characteristics of Azan	Music characteristics of <i>Jalanan</i> (Letter H onwards)
1.	Phrases exhibit upward intonation (a) – A1, A2 and A3 which are answered by a downward contour in phrases (b) – B1, B2, and B3, resembling the 'question and answer' structure found in Western music	The melody starts with a 3-note figure E flat – D flat – E flat (a) and ends with a descending glissando from E flat to A flat (b) following 'question and answer' structure
2.	At the end of each phrase, there is a pause (c)- indicated by longest note value	The phrases always end with a descending perfect 5 th glissando followed by a short pause/rest (c)
3.	Each repetition varies and is ornamented in a melismatic style	Each repetition and entrance of the 3-note figure (Rehearsal H) are different rhythmically for all strings
4.	The melody clearly exhibits scalar movement, with leaps occurring only occasionally	The melody has a clear scalar movement
5.	The smaller noteheads indicate quick melismas (d) compared to the normal noteheads and should be performed in a rapid, improvised style, often incorporating microtonal inflections	The smaller noteheads are translated into quick rhythmic movements using shorter rhythmic values, with the string players performing them in an improvised, melismatic manner
6.	The range is narrow, mainly highlighting the interval of a perfect 5 th (e)	The range is narrow, mainly highlighting the interval of a perfect 5 th in the downward glissando and occasionally an octave leap towards the end of the work

Table 3.1. Comparison between transcription of the Azan (Fig. 3.2) and *Jalanan* (Fig. 3.3).

With *Jalanan* (b. 1 – 53) drawing upon materials from the last section of *Interweaves* in fragments, this ultimately paves the way for the prayer-like section (the last section of *Interweaves*) at the end of the work. Bars 1–53 can be interpreted as the presentation and accumulation of fragmented motives, while bars 54 to the end represent a full-fledged presentation of the main material. While reminiscent of Charles Ives' cumulative form, *Jalanan* withholds melodic resolution until its final section, constructing meaning through the accumulation and transformation of fragmented materials. This contrasts with how Ives'

influence manifests in *Montage* (Chapter 2), where the focus lies in musical density through the progressive layering and integration of diverse materials. Whereas *Montage* builds simultaneous textures through juxtaposed fragments, in *Jalanan*, the fragments unfold across time, culminating in a fully realized melodic idea. These differing treatments reflect the distinct expressive aims of each work — one emphasizing multiplicity and simultaneity, the other unfolding continuity and melodic emergence.

This unfolding trajectory invites the listener to trace connections across the work, amplifying the emotional resonance of the concluding section.



Fig. 3.4. 2-part structure of *Jalanan*

The methods and textures within *Jalanan* exemplify an iterative, research-led approach to constructing a macro-body of work from repetitive microstructures. The piece features rich textures developed through linear movements, which are offset by varying major quality chords in different inversions realized through vertical sonorities at various junctures. These vertical chords offer contrast and heighten unpredictability, evoking chordal textures commonly associated with choral compositions. This auditory sensation stemmed from my experience singing church hymns and garnering knowledge of the textures present in Bach's chorales, and being crucially formative to my evolving musical education since childhood.



Fig 3.5. *Jalinan* (b. 12-15) examples of fragments of motifs [].



Fig. 3.6. *Jalinan* (b. 29-31) vertical sonorities to provide contrast from linear textures in earlier section.

This intersection of influences underscores how my compositional language is deeply informed by the contextual complexities of residing in a multicultural, multi-religious environment and

the synthesis of Western and Southeast Asian musical traditions. These diverse elements have shaped my musical sensibilities from my earliest auditory experiences, contributing significantly to my multifaceted approach to composition.

3.2 The *Bell* Series

3.2.1 *Radiance* for Orchestra (2021)

Malaysia, a multicultural country, has a history shaped by successive waves of European colonisation, beginning with the Portuguese in 1511, followed by the Dutch, and later the British, whose formal colonial administration began in 1874 and lasted until the independence of the Federation of Malaya in 1957 (Malaysia was later formed in 1963). Singapore, once part of the Federation of Malaysia, became an independent nation in 1965. The legacy of British colonialism remains visible in present-day Singapore through iconic landmarks such as the Victoria Theatre and Concert Hall, National Gallery Singapore, Central Fire Station, Raffles Hotel, and St Andrew's Cathedral.

My next work, *Radiance* was commissioned by the Singapore Symphony Orchestra for their Christmas Concert in 2021 at the Esplanade Concert Hall. The commission required the piece to embrace a Christmas theme while considering the celebratory nature of a fund-raising event. Constructing a Christmas-theme orchestral work proved challenging as I sought to balance the festive spirit with opportunities for creative exploration. During one of my supervision lessons with Howard Skempton – who was also writing a Christmas composition at that time – he suggested, '*What about bells?*' With that idea, *Radiance* took shape.

During my pre-university education in Singapore, I often passed St Andrews Cathedral during weekend trips to the city centre with my classmates and attended concerts at the Victoria Concert Hall. I clearly recall the distinct architecture of Singapore's oldest Anglican church, with its tower and spire standing out from afar. However, I was unaware at the time of the cathedral's rich history with church bells. It is the only cathedral in Southeast Asia with a complete peal of 12 bells (plus an additional bell, making a total of 13) rung according to the traditional English change-ringing.⁴⁷ These bells were cast by John Taylor & Co Foundry in Loughborough, England, the same bell foundry responsible for the bells of St Paul's Cathedral in London.

⁴⁷ 'Bells of Change', *Roots.gov.sg*, <<https://www.roots.gov.sg/stories-landing/stories/St-Andrews-Cathedral/Bells-of-Change>> [accessed 15 December 2024].

Captivated by its history and significance, I communicated with St Andrews Cathedral to seek clarification if the bells would be rung during any upcoming Sunday worship service, as this was during the Covid-19 pandemic, with strict safe distancing measures in place in Singapore. Christmas Day 2021, I was advised, was the only timeframe that year the peal of cathedral bells would be rung. This immediately motivated me to compose an orchestral piece to conclude with the peal of bells being rung at St Andrews Cathedral as a symbol of hope coming out from the pandemic. *Radiance* also inspired me to delve into the tuning of the bells and the key relationships of D major, with an additional C $\sharp$ (the extra bell), uncovering new possibilities in colour changes with a mix of D major and mixolydian flavours.



Fig. 3.7. St Andrews Cathedral, Singapore.

The diagram on the following page shows an overview of the 12 bells (+1) in St Andrews Cathedral, which served as the tonal foundation of my work, *Radiance*. This tonality is featured at the conclusion of the piece, while the earlier sections revolve around connections to this tonal centre.

AN OVERVIEW OF THE 12 BELLS + 1								
Bells Renumbered	Bell Name	Category	Diameter (mm)	Tone	Weight (kg)	Front Eight	Back Eight	Twelve
1	Matthias	New	632	A	212			1
2	Simon	New	646	G	198.5	1		2
3	James the Less	New	659	F#	210.5	2		3
4	Thaddeus	New	683	E	222.5	3		4
5	Matthew	Recast	724	D	242	4	1	5
6	James	Recast	749	C#	260		2	6
6b	Philip	New	773	C	284	5		
7	John	Old	795	B	294	6	3	7
8	Paul	Old	894	A	386.5	7	4	8
9	Bartholomew	Old	1000	G	565	8	5	9
10	Thomas	Old	1050	F#	637		6	10
11	Peter	Old	1179	E	909		7	11
12	Andrew	Old	1335	D	1297		8	12

Fig. 3.8. St Andrews Church – Overview of 12 bells + 1.

3.2.1.1 Materials and Sound

Radiance exemplifies brightness in both light and sound. My thoughts and focus gravitate toward the Star of Bethlehem, with the work depicting the journey of the wise men following the Star to the manger of the infant Jesus, marked by the ringing of bells. Three distinctive sounds are discernible throughout *Radiance*: bells, a hymn-like lullaby reflecting the nativity scene, and sustained harmonies evoking the sound of a choir.

The orchestra size was reduced due to the pandemic, with only double winds and no low brass, and the strings were also scaled down. I divided the orchestra into three distinct sound colours:

- i) Bell – affinity sounds – ringing metal percussion (both pitched and unpitched); piano clusters, harp with ringing chords and harmonics
- ii) Lullaby theme – brass (trumpets and horns), cellos and remaining strings providing harmonic and textural support
- iii) Sustained chords evoking a choir – woodwinds and brass

3.2.1.2 Change-Ringing

I was intrigued by the concept of change-ringing, which is based on patterns and sequences ranging from singles (using the smallest number of three bells) to maximus (utilizing all twelve bells). Due to the conditions of the pandemic, it was not possible for me to observe the bellringers at St Andrew's Cathedral or record the sounds of bells. As a result, I conducted further research into this method, and coincidentally came across a method called *Christmas Delight Maximus*, a method I began to explore – albeit at an introductory level – driven primarily by curiosity and its potential for pitch material and patterns.

The reference to change-ringing is reserved for the conclusion of the work where the tubular/church bells echo the sound St Andrew's Cathedral's bells. However, I do not strictly adhere to the complete sequence of the twelve notes, as the scale contained only seven different notes, with the remaining five being reiterations. Instead, I created my own patterns by selecting subsets of the twelve-note sequence of this scale, guided by variety in note groupings and contour, and my own musical instincts. I opted to use the flat 6 (C^b) rather than the regular C[#], introducing a modal inflection.

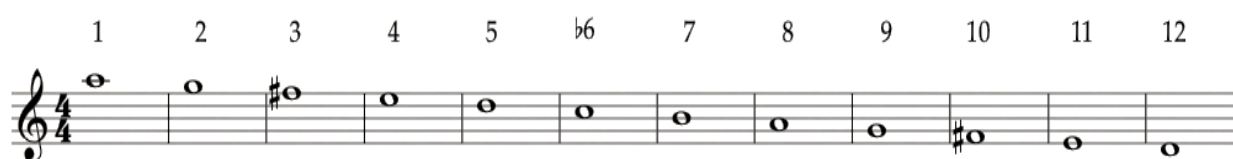


Fig. 3.9. 12 bells from St Andrew's Cathedral used at the conclusion of *Radiance*.

The sequence of notes from this scale, derived from change-ringing, is introduced in the following order:

- i) tubular bells in bars 89-96;
- ii) vibraphone in bar 92;
- iii) harp in bar 99;
- iv) piano in letter P in diminution;
- v) horn 1 states the melody in minims at letter R;
- vi) vibraphones playing quavers in bar 106;
- vii) tubular bells entering in at bar 110 in crochets; and
- viii) a final statement by tubular bells in letter U



Christmas Delight Maximus

Tubular Bells bars 89 - 96

C →	1	9	11	7	12	5	10	3	8	2	6	4
	9	1	7	11	5	12	3	10	2	8	4	6
	1	9	7	5	11	3	12	2	10	4	8	6
	9	1	5	7	3	11	2	12	4	10	6	8
	9	5	1	7	11	3	12	2	10	4	8	6
	5	9	7	1	3	11	2	12	4	10	6	8
A →	9	5	1	7	3	2	11	4	12	6	10	8
	5	9	7	1	2	3	4	11	6	12	8	10



	1	3	5	2	7	4	9	6	11	8	12	10
	3	1	2	5	4	7	6	9	8	11	10	12
	1	3	2	4	5	6	7	8	9	10	11	12
D →	3	1	4	2	6	5	8	7	10	9	12	11
	3	4	1	2	5	6	7	8	9	10	11	12
E →	4	3	2	1	6	5	8	7	10	9	12	11
	4	3	2	1	8	6	10	5	12	7	11	9
	4	2	3	8	1	6	5	10	7	12	9	11
	2	4	8	3	6	1	10	5	12	7	11	9
	4	2	3	8	1	6	10	12	5	11	7	9
	2	4	8	3	6	1	12	10	11	5	9	7
	2	8	4	6	3	12	1	10	5	11	7	9
	8	2	6	4	12	3	10	1	11	5	9	7
	2	8	4	6	3	12	1	10	11	9	5	7
	8	2	6	4	12	3	10	1	9	11	7	5
	8	6	2	12	4	10	3	9	1	11	5	7
	6	8	12	2	10	4	9	3	11	1	7	5
	6	8	2	12	4	10	3	9	1	11	5	7
B →	8	6	12	2	10	4	9	3	11	1	7	5
	8	12	6	10	2	9	4	11	3	7	1	5
	12	8	6	10	9	2	11	4	7	3	5	1
	8	12	10	6	2	9	4	11	3	7	1	5
	8	10	12	6	9	2	11	4	7	3	5	1
	10	8	6	12	2	9	4	11	3	7	5	1
	10	6	8	12	9	2	11	4	7	3	1	5
	6	10	12	8	2	9	4	11	3	7	5	1
	10	6	12	8	9	2	11	4	7	3	1	5
	10	12	6	9	8	11	2	7	4	1	3	5
	12	10	9	6	11	8	7	2	1	4	5	3
F →	12	10	6	9	8	11	2	7	4	1	3	5
	10	12	9	6	11	8	7	2	1	4	5	3
G →	10	9	12	11	6	7	8	1	2	4	3	5

A	5	9	7	1	2	3	4	11	6	12	8	10
B	8	6	12	2	10	4	9	3	11	1	7	5
C	1	9	11	7	12	5	10	3	8	2	6	4
D	3	1	4	2	6	5	8	7	10	9	12	11
E	3	4	1	2	6	8	5	10	7	12	9	11
F	12	10	6	9	8	11	2	7	4	1	3	5
G	10	9	12	11	6	7	8	1	4	5	2	3
H	3	1	2	5	4	7	6	9	8	11	10	12

Fig. 3.10. Partial change-ringing patterns from *Christmas Delight Maximus* for tubular bells.

Radiance was a defining work in determining my creative direction, marking the beginning of a new series titled, the *Bell Series*. Returning to the concert hall after the pandemic, hearing the resonating bells together with the orchestra in my first orchestral work since 2012 had a heartfelt and moving impact. This experience carried a profound familiarity —one that I felt compelled to continue — rooted in my heritage, particularly in the Southeast Asian counterpart to the bell: the gong.

The term 'byar', derived from the Balinese Gong Kebyar, refers to a sudden flare or explosive burst of sound. This sonic gesture is captured in the opening of Tazul Tajuddin's *Tenunan II* through strong orchestral attacks. While Tajuddin evokes the dynamic outbursts of the gong, *Radiance* draws on a different strand of Southeast Asian cultural influence—one rooted in the colonial heritage of church bells, specifically those of St Andrew's Cathedral in Singapore. Here, the bells' radiant resonance becomes a symbol of hope and renewal in the wake of the pandemic. These contrasting references reflect the layered soundscapes of Southeast Asia, where indigenous traditions and colonial histories intertwine, contributing to the region's complex and multifaceted musical identity.

The *Bell* Series explores the connection between the resonance of the gong, the ringing of bells and other sonic connections, alongside their respective cultural influences in Southeast Asia. This exploration led to *Sembilan* where the ringing sounds from *Radiance* were extended into gong and gong-like sonorities using Western instruments such as the almglocken, vibraphones and gongs. This was followed by *Empat*, where the string quartet is prepared and transformed to evoke the timbres of the gamelan, and finally, *Verdure* for orchestra where the gong sonority is emulated by the long, sustained qualities of the orchestral chords.

3.2.2 *Sembilan* for Oboe and Percussion Duo (2022)

Malaysia is a diverse country made up of thirteen states and Federal Territories. The multi-ethnic population of approximately thirty five million (as of 2024) primarily consists of Malay, Chinese, and Indians. Inspired by a country so rich in its heritage, I conceived the idea to commission fourteen composers whereby each composer researches into one of the 14 states (13 states and Federal Territories) – collectively referred to as '14 states' for ease of reference. The research or study of the chosen state/aspect would be integrated as part of the composition process.

In 2022, in my role as President of the Malaysian Composers Collective (MCC) — a non-profit organisation that promotes Malaysian music in Southeast Asia — I led a project funded by the Cultural Economic Development Agency (CENDANA) titled *Jalur Kita, Cerita Kita* (*Our Colours, Our Stories*). The world premiere of all 14 compositions, each based on one of Malaysia's 14 states, was held at the Kuala Lumpur Performing Arts Centre in November 2022. I was one of the composers featured in this concert, and my work was based on the state of Negeri Sembilan (translated as 'Nine Districts'). My composition, titled *Sembilan*

(meaning 'nine'), was named after this state in Malaysia. Other compositions in the concert included Ainolnaim Azizol's *Bayu Nokturnal* for string quartet and live electronics which drew from ambient recordings of Tempurung Cave in the state of Perak, Tai Yun Ming's *The Seventh Sea Princess* inspired by the traditional song and dance, *Ulek Mayang* from the state of Terengganu, Fairuz Zamani's *Kenyalang Rhapsody*, based on the poems by the indigenous Iban and Kenyah ethnic groups from the state of Sarawak in East Malaysia, Koay Loong Chuen's *Mujin*, reflecting the traditional art of the Chinese Teochew Puppet Opera from the state of Penang. These compositions, among others, celebrated Malaysia's rich and diverse cultural heritage through their exploration of folklore, legends, traditional arts, architecture, songs, poetry, dances and natural landscapes.

The state of Negeri Sembilan, located on the west coast of Malaysia, comprises nine districts and is home to the Minangkabau people, who migrated from West Sumatera, Indonesia as early as the fourteenth century.⁴⁸ Malaysia hosts the largest overseas Minangkabau population outside Indonesia, with an estimated one million Minangkabau people.⁴⁹ The ancestors of Minangkabau, who are part of the world's largest surviving matrilineal society, brought their culture and beliefs to Malaysia. For my commentary, I will focus on the influences from Minangkabau practices and architecture that are incorporated into certain aspects of my work, *Sembilan*.



Fig. 3.11. Minangkabau migration from West Sumatera to Negeri Sembilan.

⁴⁸ Abd. Samad Idris, *Hubongan Minangkabau dengan Negeri Sembilan dari Segi Sejarah dan Kebudayaan* (Seremban: Pustaka Asas Negeri, 1970), p. 15.

⁴⁹ Joshua Project, 'Minangkabau in Malaysia', *Joshua Project* <https://joshuaproject.net/people_groups/14208/MY> [accessed 30 November 2024].

3.2.2.1 *Sembilan*'s Instrumentation and Influence

The instrumentation of *Sembilan* draws from traditional Minangkabau-Malay music, reinterpreted through Western orchestration. As mentioned earlier, *Sembilan* and *Empat* (discussed in the following section) belong to my *Bell Series*, where the resonance of the gong plays a pivotal role in defining both structural and sonic frameworks.

In *Sembilan*, the use of the gongs references the *caklempong*, an ensemble of small kettle gongs (similar to the Javanese *bonang* tuned to specific pitches) and hanging gongs. Other traditional instruments include membrane drums such as *gendang* (a double-headed, conical shaped drum played with the hands), *aduak* or *dol* (a double-headed, barrel-shaped drum which is struck with a pair of padded wood beaters), as well as the *serunai*, a Malay quadruple reeded wind instrument.⁵⁰ *Sembilan* shares a similar instrumentation profile, incorporating Western instruments with comparable timbral affinities such as hanging gongs, almglocken, vibraphone, skin drums such as conga drums

Traditional instruments from Negeri Sembilan	Western instruments with Traditional Timbral Affinities in <i>Sembilan</i>
<i>Caklempong</i> (tuned small kettle gongs arranged in a row on a rack)	Almglocken, Vibraphone
<i>Serunai</i> (quadruple-reed wind instrument)	Oboe
<i>Gendang</i> (double-headed membrane drum played with hands)	Conga drums
<i>Aduak</i> or <i>Dol</i> (double-headed membrane drum struck with wooden beaters)	Wooden board struck with hard mallets
Hanging gongs	Hanging gongs

Table 3.2. Western instruments with traditional timbral affinities in *Sembilan*.

⁵⁰ Patricia Matusky and Tan Sooi Beng, *The Music of Malaysia: The Classical, Folk and Syncretic Traditions* (Farnham: Ashgate, 2004), p. 162.

3.2.2.2 Repetition in Architecture Elements and Musical Motives

The use of repetition in *Sembilan* is evident in the distinct architectural elements of the Minangkabau culture, as well as musical motives and gestures throughout this six-minute work. A characteristic architectural feature in rural Negeri Sembilan is the buffalo horn design, predominantly found on the rooftops of traditional Minangkabau homes. The name Minangkabau is derived from the words 'Minang' (victory) and 'Kabau' (buffalo), stemming from a myth about the tribe's triumph in a fight between two water buffalos. In Minangkabau culture, the buffalo horn symbol is considered sacred and is prominently featured in their horn-shaped roof architecture and women's headdress. The pointed finials on the peaks of the roof, are said to represent buffalo horns, symbolize reaching toward Heaven.⁵¹

This upward curved buffalo horn design serves as the backbone of my work. Its unique architectural form is reflected in the melodic contour, culminating in a final ascent that symbolizes the peak of the Minangkabau roof. This musical climax marks the piece's high point, reaching toward a gesture that extends into infinity. Infinity is evoked through the resonance of the ringing gong, whose sustained vibrations imply a continuation beyond the final strike – lingering in silence, yet deeply felt.



Fig. 3.12A Minangkabau buffalo horn-shaped roof of Pagaruyung Royal Palace in West Sumatera, Indonesia



Fig. 3.12B. Traditional buffalo horn shaped headdress worn by Minangkabau woman in Negeri Sembilan, Malaysia



Fig. 3.12C. Negeri Sembilan State Museum, Seremban, Malaysia

Fig. 3.12 (A – C). Minangkabau buffalo-horn shaped architecture.

⁵¹ *New World Encyclopedia*, 'Rumah Gadang', <https://www.newworldencyclopedia.org/entry/Rumah_Gadang> [accessed 8 December 2024]

3.2.2.3 The nine motives/gestures used in *Sembilan*:

Drawing from the number nine in its title, *Sembilan* consists of nine small motives and gestures which are repeated, transformed and accumulated to reach the apex of the work. This process references the state of Negeri Sembilan, which is composed of nine districts forming its entirety. The motives are continuously reiterated undergoing changes each time they reappear. These changes are evident through motivic fragmentation, elaboration, development, rhythmic alterations, and shifts in different articulation, instrumentation and expressive qualities.

The nine motives/gestures used in *Sembilan*:

Motive	Initial Appearance	Bar number	Description and transformation of the motive
1		1 90	Trill figure played by oboe and tremolo in percussion This trill figure slows down and becomes a short motivic gesture
2		1 Letter B 19	Upward glissando following the shape of the buffalo horn, with subsequent occurrences played by the oboe at varying durations.
3		2	Short – long rhythmic motive played by Percussion 1 & 2
4		15	Oboe's 2-note motive portraying the pointed finials on the peaks of the roof, with the oboe playing in extreme low and high registers. These sharp peaks are further emphasized with the staccato articulation
5		Letters F – G	Oboe – staccato motive developed from previous Motive 4, extended into a longer phrase. The contour reiterates the upward and downward outlines of the buffalo horn-shaped architecture

Motive	Initial Appearance	Bar number	Description and transformation of the motive
6		Letter G – bar 63	“Resonance” motive representing the gong’s resonance quality, supported by sustaining chords in the vibraphone. This is the first instance of a sustained sound quality in the work
7		Letter I	Developed from Motive 3’s short – long rhythm, this time played as chords with pitches, while maintaining staccato on the vibes (short) and pedal (long) sound connection. This short -long rhythm continues into the next section (bars 90-97) on the vibraphone
8		Letter L, N	Oboe legato melody derived from trill figure in Motive 1. The trill is broken down into slower sextuples and quintuplets, combined with the original trill figure, and widened to an interval of a 3 rd in bar 104
9		Letter Q	The longest motive in the entire section, accumulating energy as it slowly rises towards the peak and climax of the entire work. All three performers have this motive in different variations, reflecting the shape of the buffalo horn. The ascent mirrors the zenith of the roof architecture, symbolizing infinity as the gong’s resonance continues after the final strike.

Table 3.3. Description of nine motives/gestures in *Sembilan*.

3.2.2.4 Rhythmic Layers and the Three Pillars of Minangkabau Society

In Minangkabau culture, the success of leadership is rooted in the balance of three pillars of society that build and maintain the integrity of customs and culture known as the *tigo tungku sajarangan* (the three stoves at the hearth). They are:

- i) *alim ulama* (religious figures),
- ii) *cadiak pandai* (scholars or enlightened elders) and
- iii) *nenek mamak* (ancestors/ head of tribe)⁵²

I devised three distinct temporal durations to highlight the three pillars of society working to maintain societal balance.

Nenek mamak (ancestors/ head of tribe)

Quicker note values in faster tempo together with staccato articulation are employed to bring out a more casual and conversational speech-like rhythm for the ancestors and head of tribe. This is heard in the beginning of the piece and particularly at Letter F, (Motive 5) marked 'Chattering' with short staccato tonguing of the oboe.



Fig. 3.13. Oboe melody portraying quick speech-like, 'chattering' tempo.

Cadiak pandai (scholars or enlightened elders)

A moderate and regular tempo represents the second pillar, the scholars (*cadiak pandai*). This is exemplified in bar 85, where the vibraphone introduces a measured rhythm with dampened weaker beats, reflecting a balanced and dignified demeanour.

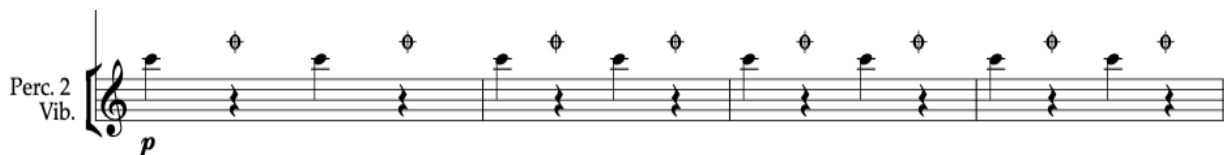


Fig. 3.14. Moderate and regular tempo for second pillar, the scholars (*cadiak pandai*)

⁵² Donny Syofyan, *Minang Wisdom and Radicalism*, *The Jakarta Post*, <<https://www.thejakartapost.com/life/2018/05/21/essay-minang-wisdom-and-radicalism.html>> [accessed 9 December 2024].

***Alim ulama* (religious figures)**

To highlight the solemn and respected role associated with the religious figures (*alim ulama*), I used the slowest tempo and longest duration expressed through the ‘resonance motive’ (Motive 6), capturing calmness and deep contemplation of this pillar within Minangkabau society.

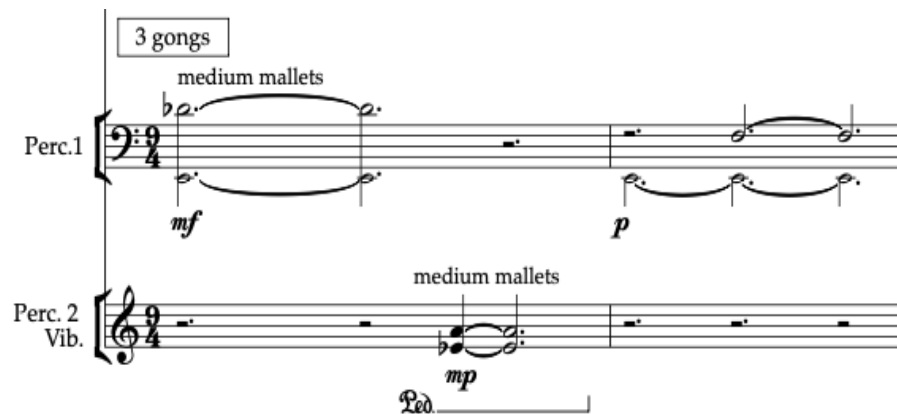


Fig. 3.15. Slower more stately tempo for religious figures (*alim ulama*).

These three temporal layers, combining with the nine motives, are sometimes presented to highlight the distinct character of each layer. At other times, these temporal layers are combined with various motives to illustrate the balance and interplay among these pillars of society.

An example of this interplay is found between Rehearsal L and Rehearsal P. Referring to the diagram in Table 3.3, the oboe plays a legato melody derived from Motive 1 (a trill figure) at Rehearsal L. Set against the free and improvisatory character of the oboe is the steady pulse established by the two percussion instruments, representing the rhythmic layer of the *cadiak pandai* (scholars or enlightened elders). This pulse gains momentum in bar 95, where Percussion 1 plays successive groups of four semiquavers, referencing the temporal layer associated with the *nenek mamak* (ancestors or heads of tribe). In bar 103, Percussion 2 joins the dialogue with the resonance motive (Motive 6), symbolising the *alim ulama* (religious figures). This convergence marks the trio's integration and reflects the equilibrium among the three pillars of Minangkabau society — a balance that my music seeks to embody through layered temporal structures and motive interplay.

This musical embodiment of social equilibrium forms the foundation of *Sembilan*, reflecting the layered complexity of Southeast Asian culture—particularly through the lens of Minangkabau tradition. The rhythmic layering of the three societal pillars in Minangkabau finds a resonate parallel in the stratified meanings embedded in *wayang kulit*. Though presented on a modest

stage, *wayang kulit* carries sophisticated symbolic meaning, especially through the *tok dalang*, the puppet master who simultaneously assumes the roles of narrator, musician, performer, and spiritual medium.

This concept of layered expression is further exemplified in Malaysian composer Yii Kah Hoe's *Gongan* for oboe and piano. Yii employs a stratified texture based on the eight-beat *gongan* unit, which gradually accelerates and ascends in pitch until bar 98, where the texture shifts unpredictably through varied articulation, dynamic contrast, and octave displacement (as previously discussed in Fig 1.21, p. 40). Similarly, *Sembilan* employs rhythmic layering to reflect the interwoven roles of ancestors, spiritual figures, and scholars in Minangkabau society—echoing the layered aesthetics central to Southeast Asian art forms.

3.2.3 *Empat* for String Quartet (2023)

*When I first placed objects between piano strings, it was with the desire to possess sounds (to be able to repeat them). But, as the music left my home and went from piano to piano and from pianist to pianist, it became clear that not only are two pianists essentially different from one another, but two pianos are not the same either. Instead of the possibility of repetition, we are faced in life with the unique qualities and characteristics of each occasion.*⁵³ — John Cage

Upon hearing Cage's *Sonatas and Interludes for Prepared Piano* as a student for the first time, I became equally fascinated and intrigued how familiar it sounded, recalling the sounds of the gamelan from this region. Cage's use of the piano transformed familiar resonances into something freshly discovered. *Empat* (*Four* in English) embodies an air of youthful exuberance and innocence, drawing upon memories of gamelan music and its affinity with Cage's prepared piano. *Empat* illustrates the cyclical and layered nature of memory as a fluid and continuously evolving entity.

During a research trip to Bali in July 2023, the gamelan sounds that had originally piqued my interest enthralled me all over again; encountered from a fresh perspective enriched by years of perspective and emotional growth.

This trip renewed my interest in gamelan's rich textures and interwoven patterns, which reflect the essence of repetition in both form and spirit, enabling my use of repetition to mirror a concept of memory not exceedingly complex. Instead my intention is to allow repetition to

⁵³ Bunker, R. (1973). *The Well-Prepared Piano*, 2nd ed. (New York: Litoral Arts Press, 1981), p. 49.

manifest organically through familiar patterns and motifs, comparable to the emergence of early memories within our consciousness, vibrant and direct. This non-developmental application of repetition enables the music to unfold as a layered tapestry of overlapping gestures and timbres, where each stratum retains its identity while contributing to a larger, cyclical framework. Rather than progressing linearly, the music articulates a cyclical and recursive structure that reflects the enduring, non-linear nature of youthful recollections.

This approach emphasizes my 'inner voice', influenced by a classical Western music pedagogy and a Southeast Asian background; combining Western frameworks with the cyclical, intricate characteristics typical of Southeast Asian music. Whilst the composition incorporates gamelan facets throughout the piece, I do not perceive it as a mere fusion of Eastern and Western musical styles. Rather, it serves to articulate my personal compositional perspective moulded by individual experiences and my personal journey as a composer.

3.2.3.1 Materials and Process

The materials in *Empat* are drawn from three primary sources:

i) Kotekan Empat

The title *Empat*, meaning 'four' in both Malaysian and Indonesian, reflects not only the four players in a string quartet but also the interlocking pattern of *kotekan empat* in gamelan music. The unique attribute of this interlocking pattern is formed when the two outer tones are sounded together, typically in intervals of fifths.

Kotekan Empat: outer tones forming 5ths



5ths used in Empat



Fig. 3.16. *Kotekan Empat* and the use of 5ths as an important harmonic feature in *Empat*.

ii) Sounds of the Reyong and Connection to Cage's Prepared Piano

Performing with the gamelan troupe in Bali, I was drawn towards the *reyong*—a row of kettle gongs performed by four musicians, each using two beaters, one in each hand. The timbre of the *reyong* stood out to me as it blends the brighter tones of the keyed instruments (metallophones) of the Balinese gong kebyar with the warmer sounds of the larger gongs. There are two particular sounds from the *reyong* that I incorporate into the string quartet of *Empat*:

- a) *Byong* – produced when the kettle gongs are struck and left to resonate
- b) *Jet* – created when the kettle gongs are struck but the beaters are not lifted after the stroke but remained pressed against the gongs resulting in a “hiccup” effect

These sounds permeate *Empat*, drawing connections to the prepared piano works of John Cage and recalling sonic memories from my childhood. The string quartet reawaken these familiar sounds, presenting them with a fresh perspective.

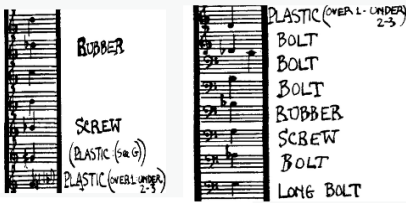
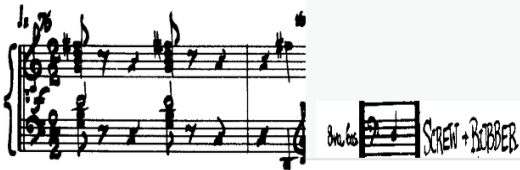
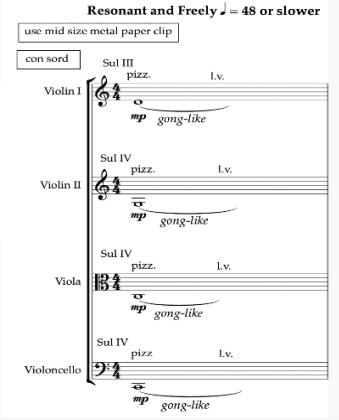
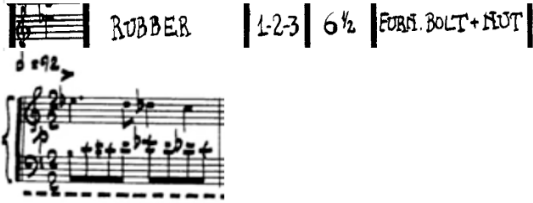
Reyong sounds	Cage's Prepared Piano	EMPAT string quartet
<i>Byong</i> – to strike kettle gong and allow sounds to fully ring and resonate	Play the prepared notes (with materials inserted between the strings) so that they ring and resonate fully. From Sonata no. 1 from Sonata and Interludes for Prepared Piano  	To pluck strings of instrument with metal clip inserted and to allow sound to vibrate fully Resonant and Freely ♩ = 48 or slower use mid size metal paper clip 
<i>Jet</i> - kettle gongs are struck but immediately dampened with the beaters, resulting in a “hiccup” effect	A dry, percussive sound with accent, using furniture bolt and nut from Sonata No. 5 	

Fig. 3.17. Connection of sounds from *reyong* to Cage's prepared piano and reimagination in *Empat* string quartet.

iii) ***Tari Pendet*, Balinese Welcome Dance: Utilizing Interval of Thirds Derived from a Two-Note Motif**

During a 2023 trip to Bali, I had the opportunity to perform alongside local youths from *Bali Jaladara*, a local gamelan orchestra. One of the works that I learnt was the accompaniment for *Tari Pendet*, a traditional Balinese welcoming dance performed by young girls, known for its simple yet graceful movements.

The youthful innocence of the dance is captured through a recurring two-note motif that highlights a major third interval. This motif derived from *Tari Pendet*, forms the basis of my work, *Empat*. By using this motif throughout the piece, repetition becomes a key tool of associative recall,⁵⁴ enabling memories of my youth to be recollected and reconnected, whilst simultaneously infusing these sounds to coalesce to the present time. This recurring motif allows listeners to emotionally connect with the music, to strengthen feelings of nostalgia and familiarity. Notably, the motif deviates from conventional developmental practices common to Western classical music principles; instead it recurs in different contexts throughout the piece, strengthening its expressive effect.

The sonorities of the opening chord of *Empat* in bar 4 (refer to Fig. 3.18 on the following page) are derived from stacking tertian harmonies (derived from *Tari Pendet*), gradually opening up the quartet linearly and demonstrating this interval.

⁵⁴ Lutz Jäncke, 'Music, Memory and Emotion', *Journal of Biology*, 7 (2008), p. 21 <https://doi.org/10.1186/jbiol82> [accessed 5 December 2024].

Opening chord

Built from 3rds

Fig. 3.18. Utilization of thirds from *Tari Pendet*, from the opening chord in bar 4 to a linear presentation.

3.2.3.2 Prepared String Timbres: Interlocking Gamelan Patterns, Timbral Sonorities from Cage and Reich's Phasing Techniques

Rehearsal Letters L – S in *Empat* were written with Cage's prepared piano sonorities in mind, referencing his moderately paced and light-hearted dance-like qualities of *Sonata No. 2*. The character of these textures, particularly passages with a single line of ostinato accompaniment (LH bars 17- 19), complements the youthful spirit of the welcoming dance, *Tari Pendet*. In *Empat*, the string quartet uses pieces of cork of varying lengths to create percussive sounds that emulated a prepared piano. This approach reflects John Cage's original intention for the prepared piano: a practical substitute for percussion instruments in dance accompaniment. Similarly, in *Empat*, this gesture supports *Tari Pendet*, a traditional welcoming dance, echoing Cage's original context of composing for choreography.

The diagram on the following page compares Cage's prepared piano textures — marked by a dance-like pulse and percussive sounds (particularly in bars 17-19, left-hand quavers) — with my use of similar ideas in the prepared strings of *Empat*. The string writing in *Empat* draws on

the interlocking patterns of gamelan as well as Cage's sonic approach, evoking a sense of pulse and rhythmic drive through the distinctive timbre of prepared strings. Though simple in rhythmic design, the interplay of prepared textures in *Empat* unfolds as a layered and resonant sound world, echoing the directness and emotional immediacy of early memories.

Cage's Prepared Piano Sonata No. 2

Bars 15-19



EMPAT string quartet

Fig. 3.19. The string writing in *Empat* draws on interlocking patterns derived from gamelan and Cage's approach to timbre, creating a sense of pulse and rhythmic momentum through prepared strings

Alongside these timbral concepts drawn from Cage, *Empat* also engages with the structural influence of Reich's phasing techniques. Drawing parallels to Steve Reich's *Piano Phase*, which builds complexity through the gradual shifting of identical patterns played out of sync, *Empat* similarly uses timbral contrast and the displacement of accents to phase in and out of a regular repeated pattern. From Rehearsal Letters L to S, the string quartet is divided into distinct timbral sections. For example, at Rehearsal N, downbeat quavers played by the viola and cello alternate with interlocking semiquaver patterns in the two violins. As the violins' patterns phase out, the lower strings take over the interlocking figures, while Violin I shifts to the downbeat quavers originally played by the lower instruments—now played on the offbeats with a muted timbre, adding another layer of variation.

Similarly, when the lower strings' interlocking pattern phases out in bar 84, the violins assume the pattern, continuing the gradual shift in texture. At Rehearsal O, the viola and cello displace the quaver harmonic pizzicato by entering a semiquaver earlier, subtly disrupting the established pulse. This ongoing phasing of alternating textures allows the recurring patterns and prepared timbres to evolve organically, blurring fixed roles between instruments and creating a layered texture with gradually shifting instrumental roles.

3.2.3.3 Cyclical Structure of *Empat*

Empat embraces a cyclical structure, avoiding linearity and emphasizing repetition as a tool for evoking and transforming memories. As part of my *Bell* Series, the sonorities and resonance of the gong are emulated by the string quartet in three ways:

- i) Gong resonance: The string quartet is prepared using a metal clip to the open strings of the instrument, played pizzicato to replicate a gong-like sonority.
- ii) *Reyong* kettle gongs: The two sonorities *byong* and *jet* (mentioned earlier in Fig. 3.17) are performed traditionally on the strings, 'unprepared'.
 - For *jet*, the strings are dampened immediately to achieve a hiccup effect.
 - For *byong*, the quartet play long sustained notes to simulate the resonance of the gong
- iii) 'Gamelan' interlocking patterns: In the middle section of *Empat*, the prepared string quartet, using cork objects, represents the entire gamelan ensemble as they perform interlocking patterns with each other.

Referring to Fig. 3.20 on the following page, the use of gong is evident throughout the piece but it evolves as the piece progresses. The youthful exuberance together with the recurrence of this gong-like sonority, alongside the use of *Tari Pendet*'s two-note motif, enables the listener to reconnect to the original sonorities first heard in the beginning of the work from something established into a dynamic and evolving sonic journey.

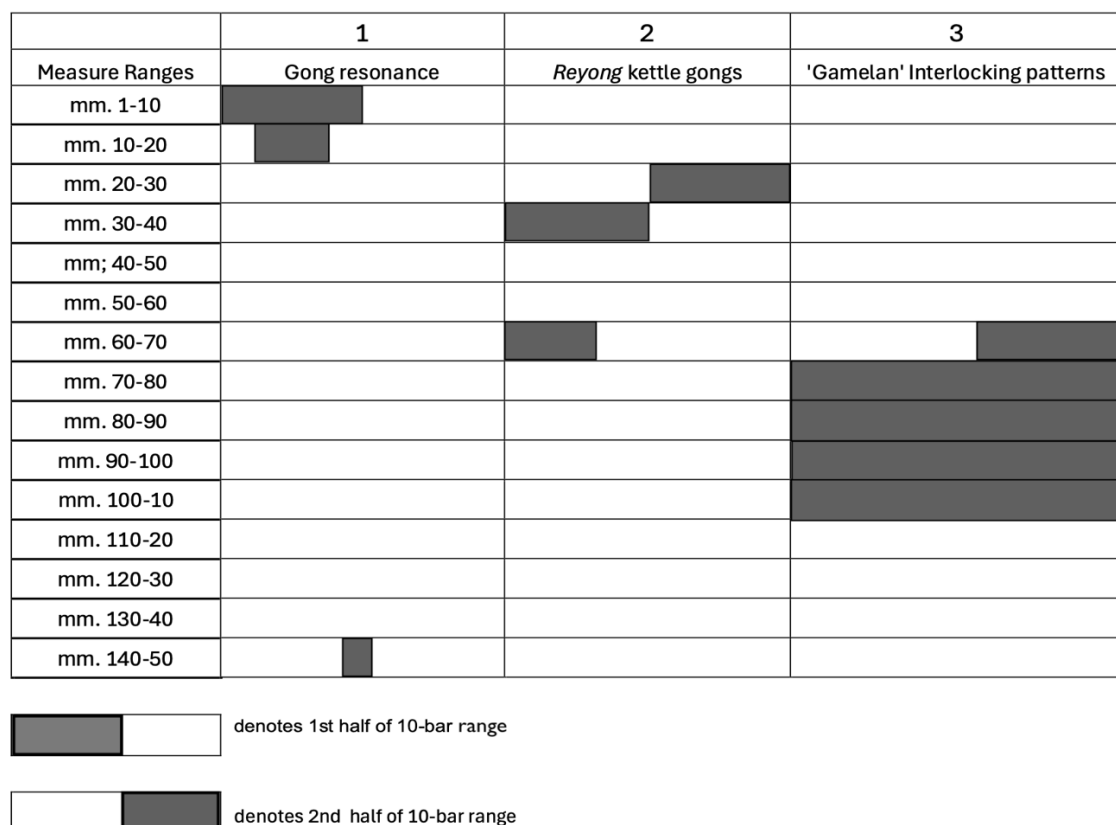


Fig. 3.20. The different types of gong sounds emulated by the string quartet.

The layering of gamelan interlocking patterns, sonorities influenced by Cage, and Reich's phasing technique functions as a medium for the cyclical unfolding and evolution of musical memory. In *Empat*, repetition functions as associative recall, weaving together memory and renewal to illuminate the shifting landscape of musical expression and personal narrative within the piece.

3.2.4 *Verdure* for Orchestra (2024)

3.2.4.1 Music and Environmental Awareness

When one thinks of an orchestral work that reflects the beauty of nature, Beethoven's *Pastoral Symphony* often comes to mind. In 2020, amidst the COVID-19 pandemic and in celebration of Beethoven's 250th Anniversary, the *Beethoven Pastoral Project* brought together over 250 artists from around the world. United in their commitment to environmental and climate protection, they sought to play a major role in shaping a sustainable future. The three-and-

a-half hour programme took place virtually on 5 June 2020 as part of World Environment Day and was broadcast from Beethoven's hometown of Bonn, Germany.⁵⁵

Inspired by music resonating with nature and sustainability, *Green Monday* emerged as a contemporary response to our ongoing global environmental challenges. Tonhalle Düsseldorf and the Düsseldorf Symphony launched a project, *Green Monday*, for their 2023/24 season to promote public awareness on climate protection and environmental sustainability. Eleven composers worldwide were commissioned to write short miniatures based on sustainability topics such as energy efficiency, waste management, recycling, digitalisation, biodiversity, and others.⁵⁶ These newly commissioned works were premiered on a 'Green Monday' each month. Environmental specialists were invited to address the green topic of the month prior to the premiere of the new work during the *Green Monday*. *Verdure* was the final work of the *Green Monday* series and was commissioned based on the theme of carbon compensation.

3.2.4.2 Carbon Compensation and Chord Colours

Verdure is divided into, and presented as, a series of 'chord colours,' a metaphorical representation of emotional and harmonic qualities of the chords used to express the fluctuating global temperatures. The chords are repeated with varying voicings and different instrument groupings to represent shifting climate temperatures. This gradually transitions into a brighter orchestral colour at the end of the piece, symbolising a sustainable, cooler planet with heightened efforts towards carbon compensation. This treatment of colour — as a structural and expressive device — draws on Feldman's approach to harmonic and instrumental shading, where colour is never static but continuously transformed through orchestration and spatial nuance. While Feldman's approach yields a sense of suspended time, *Verdure* moves toward transformation, culminating in a brighter orchestral colour that symbolizes hope and renewal.

In many ways, *Verdure* can be seen as a continuation of *Radiance* (the inaugural work for the *Bell Series*) in both sound and concept. Both pieces are written for the orchestra and address global issues concerning health and the environment. As part of the *Bell Series*, the gong is featured in *Verdure*, with the resonance of the orchestra emulating the sound of gong. Both works share an optimistic and uplifting trajectory. In *Radiance*, the sound of the ringing bells

⁵⁵ UNFCCC, 'Beethoven Pastoral Project Promotes Climate Protection', *United Nations Framework Convention on Climate Change*, 5 June 2020, <<https://unfccc.int/news/beethoven-pastoral-project-promotes-climate-protection>> [accessed 29 June 2024].

⁵⁶ Tonhalle Düsseldorf, *Green Monday: Übersicht* <<https://www.tonhalle.de/green-monday-uebersicht>> [accessed 17 December 2024].

symbolized the end of the COVID-19 pandemic and ushered the new year filled with renewed hope and light. *Verdure*, in turn, delivers a message of hopefulness, encouraging us to play our part in preserving an abundance of natural greenery – efforts that could lead to an eventual reduction in global warming for future generations. Both works utilise the resonance of the bell and gong as enduring symbols of hope and continuity.

Verdure's structural design centres on a gradual brightening of orchestral colour, beginning at Rehearsal I, marked *Bliss*. Here, the orchestral sonority shifts, evoking bell-like resonances through the use of vibraphone, glockenspiel, and harp, as Violin II introduces a six-note Motive X (F–G–A $\flat$ –B $\flat$ –D–E $\flat$) at a faster tempo. The diagram below illustrates the pitch content at Rehearsal I, arranged in ascending order and analysed in terms of intervallic content.



Fig. 3.21. The pivotal Motive X at Rehearsal I arranged in ascending order with its interval content. The numbers represent semitones 1 = minor 2nd; 2 = major 2nd

Much like *Radiance*'s evocation of stars scattered across an infinite sky, *Verdure* conveys a sense of vastness—this time through lush greenery, represented by long, sustained orchestral chords. Yet, against this tranquil backdrop, dissonant chords begin to surface, gradually disrupting the sonic environment. Although these chords (refer to Fig.3.22 chords A – F) share similar intervallic components (minor 2nd, major 2nd, and occasional minor 3rd), they symbolise the volatility of shifting temperatures brought about by global warming. With each recurrence, they grow louder and denser, mirroring the intensification of environmental degradation caused by human activity.

The chords in Fig. 3.22 on the following page illustrate both the underlying affinities and distinctions among them prior to the emergence of the brighter Motive X at Rehearsal I. Notably, all chords—except Chords C and D—feature a sixth between their lowest and highest pitches. Crucially, the full sequence of Chords A to E is never presented linearly until Rehearsal I, where they emerge at a pivotal structural moment.

A Strings: bar 4

B Brass: Rehearsal C (bar 12)

C Strings: bar 16

D Brass: bar 19

E Strings: bar 32

F Woodwinds: bar 74

Fig.3.22. Chords A to E, highlighting their shared and contrasting intervallic relationships to Motive X introduced at Rehearsal I. Chord F marks the conclusion of *Verdure*. The reduction below shows each chord with intervallic content indicated on the lower staff. Numbers represent semitone distances: 1 = minor 2nd; 2 = major 2nd; 3 = minor 3rd

- Chords B and F have an additional minor 3rd interval compared to the rest
- Chords A, B and E have the narrowest range; followed by chord D, chord C and finally chord F towards the end of the work has the widest range and brightest colour

An important aural connection to the architectural plan of *Verdure* is established through the three chords introduced by the strings in bars 4 – 8 and their return at bars 74 – 79. The repetition of the three chords is modified, with the final two notes in the piccolo melody expanding from a minor second to a major second, symbolizing a brighter and more optimistic outcome. The congestion posed by climate change is reflected in the strings' use of closely

voiced stacked chords. Although the opening tutti chord covers a larger register, it employs clusters to symbolize the global warming effects that define the current state of our planet.

In contrast, the concluding chord scheme gestures toward a classic V–I relationship (B–E) through the bass line (refer to Fig. 3.23 below). However, this motion is deliberately interrupted by an intervening G, which obscures the expected resolution and transforms the cadence into a more nuanced, expressive gesture. This G is not arbitrary — it recalls the mediant bass relationship introduced earlier in bars 4–8 (G# - E), now altered to G – E in bars 77–78, thereby creating a structural link across the work. As shown in Figure 3.23 (bars 74–79), this cadential motion alludes to V–I, while the inserted G functions as a purposeful disruption of a conventional closure.

Resonating freely like a gong throughout the orchestra, the final chord is characterized by its open spacing, wide register, and luminous orchestration. It represents hope for future generations, evoking a sense of vastness and openness – symbolic of idealized greenery, the natural world and a vision of ecological harmony.

Chords in the beginning

Melodic line

major 2nd minor second

Reduction Strings bars 4-11

Last three chords at the end

Melodic line

major 2nd major 2nd

Reduction Tutti, bars 74-end

Fig. 3.23. *Verdure*: Bars 74–79 — cadential motion that alludes to a V–I progression (B–E), with the intervening G functioning as an expressive interruption. This G recalls the mediant bass relationship introduced in bars 4–8.

3.3 Summary of Research Aims and Outcomes

Using Repetition for New Structural Possibilities

Since the start of my PhD, I have explored repetition and economy of material as the foundation building upon my *Continuum* Series. In this series, repetition serves as a means of forming patterns, contributing to both micro and macro levels, interwoven throughout the individual pieces. Developing from this approach, the *Bell* Series extends repetition to a broader conceptual level, drawing connections between my Southeast Asian heritage and Western education. Here, repetition not only informs micro-level structures but also opens new possibilities for form and resonance.

For example, in *Sembilan*, I derived repetition from the contour of the buffalo horn found on the rooftops of traditional Minangkabau homes, an architectural form that influenced both the oboe's melodic shape and the overarching structure of the piece. In *Radiance* and *Verdure*, the ringing resonance of bells was reimaged through the sonority of the Southeast Asian gong, merging elements of Western bells and Southeast Asian gongs to shape the works' structural and sonic foundations. In *Empat*, the reference to the gong reflects a deeply personal connection to memory, where its timbre recalls my childhood discovery of Cage's prepared piano – a sonic connection that resonates with my Southeast Asian heritage and the sounds of gamelan. The string quartet is 'prepared' to emulate the gong and gamelan to shape the overall structure of the piece while reinterpreting the quartet within a contemporary context.

Using Repetition from Microstructures to Global Issues

Throughout the *Bell Series*, repetition is explored on a broader scale focusing on the recurrence of sonorities and resonance across all works in the series. This new approach led me to rethink my research and practice, shifting my use of repetition from a microstructural level, not merely as patterns, as in the *Continuum* Series to a macro context that addresses global issues. This shift has enriched my compositional approach with a renewed perspective. For instance, *Radiance*, espouses the Yuletide spirit alongside reflections of the past and a new dawn following a debilitating recent global pandemic. Likewise, *Verdure* draws attention to detrimental environmental matters. Through this exploration, music and my artistic expression becomes a means of engaging with contemporary global challenges, opening fresh avenues for creative discourse.

Chapter Four: *People* – Memory and Interconnection

Repetition is the means by which memory reinvents the past, by which the past is presented in new forms that produce new interpretations of it.

— Deleuze

Memories and nostalgia act as echoes of the past, providing a deeper connection to an artist's creative output. In Chapter One, I discussed Ligeti's childhood dreams of spider webs that ultimately shaped his micropolyphonic webs of finely woven, repeated patterns as demonstrated in his orchestral work, *Apparitions*. Similarly, *Poème Symphonique* resulted in the composer's 'pattern-meccanico' compositions based on his memory of reading Hungarian author Gyula Krudy's tales of hundreds of ticking clocks. In his later work, *Clocks and Clouds* (1973), Ligeti highlighted the importance of these two contrasting sound worlds in all his oeuvre:

I found this title beautiful and meaningful in relation to my compositional imaginings. The opposition of these two types of musical structures – misty and blurred (in *Apparitions* and *Atmosphères*) and precise like clock mechanisms (such as *Continuum* and *Poème Symphonique* for 100 metronomes from 1962) – is a characteristic of all my works.⁵⁷

Looking back at the past four years of my composition output and reconnecting with the 'iterative cyclic web', I notice an even stronger embodiment of interconnectedness and cyclic nature of my research and practice. My exploration of repetition has expanded beyond a compositional technique into a broader context — a connection to people. What originally began as a structural device at the start of my journey has evolved into a deeper engagement, where repetition now carries layers of meaning interwoven with personal experiences and relationships.

Although *Echoes* (2021) and *Montage* (2024) originate from my *Continuum* Series, where repetition was primarily used in relation to patterns and form, I have come to realize that repetition also functions on a contextual level. It reflects the crossing and recrossing of paths with individuals, encompassing the interplay between past, present and future. *Echoes* emerged from my connection with two colleagues, all of us alumni of the Eastman School of Music, representing a shared past that now continues through our collaboration in Singapore. *Montage*, the final work in my *Continuum* Series and my composition portfolio, emerges from

⁵⁷ Ligeti, György, 'Zu Clocks and Clouds', in *György Ligeti: Gesammelte Schriften*, ed. by Monika Lichtenfeld, vol. 2 (Basel: Bärenreiter, 2007), pp. 263–264.

the accumulation of materials from the four preceding pieces and the most personally significant, written in memory of my father. Yet, my father's memories have also guided the work toward new artistic directions. Similarly, *Empat* serves as a response to my childhood memories of Cage's prepared piano works, which resonate with my Southeast Asian heritage, particularly the sonic connection to the gamelan.

This connection to people becomes even more immediate and direct in *Crossings* for solo piano, the last work I will discuss, yet the earliest work in my composition portfolio. This work is not included in my *Continuum* and *Bell Series* but is a stand-alone work, like *Jalanan* for string quartet from Chapter Three. Just as the 'iterative cyclic web' embraces a non-linear and cyclical nature, so too does this final work, cyclically linking back to my earliest memory of playing Bach's piano works. This reference to Bach reappears in *Montage*, the final work from my composition portfolio, creating a full-circle turning point in my compositional journey. Moreover, *Crossings* is directly linked to an individual — the commissioner of the work — who was once my student. The crossing of our paths mirrors the non-linear approach of the 'iterative cyclic web', reinforcing my ongoing exploration of time, memory and relationships through repetition on both micro and macro dimensions.

4.1 Crossings for Piano (2020)

Crossings, commissioned by Malaysian pianist, Melody Quah was written in response to Bach's keyboard masterpiece, the *Goldberg Variations*. When one thinks of the *Goldberg Variations*, it is easy to become absorbed in the complexities of this monumental keyboard work, consisting of thirty variations. Yet, what stands out to me is its simplicity. At its core, the variations are built upon the most fundamental of ideas: a descending bass line that forms the skeleton of the theme.

In the past century, many composers have transcribed, arranged, reimagined Bach's *Goldberg Variations*. In 1992, Robin Holloway wrote a transcription or elaborated arrangement for two pianos titled *Gilded Goldbergs*. In 2004, The *Gilmore International Keyboard Festival* commissioned twelve composers including Jennifer Higdon, Lukas Foss, David Del Tredici, Bright Sheng, Fred Lerdahl and others, to compose four-minute solo piano works based on Bach's *Goldberg Aria* which were premiered by American pianist, Gilbert Kalish. Austrian composer, Karlheinz Essl's *Gold.Berg.Werk*, (2003-2020) offers another interpretation of the *Goldberg Aria*, using electronics to transform the concept of variations into the realm of sound.

When studying the *Goldberg Variations*, I was intrigued by the architectural design of the thirty variations, which are grouped into three sets, each following a distinct pattern (except for the last set): character, hand crossings, canon, and repeated ten times to form the complete set. While playing through the variations at a slow tempo, I realized that some of the variations – particularly the hand crossings – were awkward, as the piece was originally written for harpsichord with two manuals. These hand crossings variations are often referred to as bravura, virtuosic or arabesque variations due to their virtuosic quality.

As a pianist, I have played many of Bach's keyboard works, but not the *Goldberg Variations*. I found the awkwardness of the hand crossings intriguing and enjoyed navigating these passages, as they presented a fresh challenge within the Baroque repertoire. I eventually adopted the hand crossings as a repetitive, virtuosic element, and combined them with the use of trills and other ornamentation from the aria as the basis of my work, *Crossings*.

Movement	No. of Manuals	Variation Type
ARIA	1	
1	Var 1	1 Character – Polonaise Hand-crossings
	Var 2	1 Imitative – trio sonata
	Var 3	1 Canon at unison
2	Var 4	1 Character - Passepied
	Var 5	1 or 2 Hand-crossings
	Var 6	1 Canon at the 2 nd
3	Var 7	1 or 2 Character Dotted Gigue
	Var 8	2 Hand-crossings
	Var 9	1 Canon at the 3 rd
4	Var 10	1 Character - Fughetta
	Var 11	2 Hand-crossings
	Var 12	1 Inverted canon at the 4 th
5	Var 13	2 Character - Sarabande
	Var 14	2 Hand-crossings
	Var 15	1 Inverted Canon at the 5 th (minor)

TITLE	No. of Manuals	Type of Variation
6 Var 16	1	Character - French Overture
Var 17	2	Hand-crossings
Var 18	1	Canon at the 6 th
7 Var 19	1	Character – Minuet
Var 20	2	Hand-crossings
Var 21	1	Canon at the 7 th (minor)
8 Var 22	1	Character - Gavotte
Var 23	2	Hand-crossings
Var 24	1	Canon at the octave
9 Var 25	2	Character – Adagio arioso (minor)
Var 26	2	Hand-crossings
Var 27	2	Canon at the 9 th
10 Var 28	2	Hand-crossings
Var 29	1 or 2	Hand-alternating
Var 30	1	Should be canon but Quodlibet
ARIA da capo		

Fig. 4.1. Variations following a distinct pattern: Character, hand-crossings, canon.

My response to the *Goldberg* is an independent work which displays the lighter and more playful side. *Crossings* as the title suggests, showcases hand crossings driven by the more virtuosic 'hand crossings on double manual' variations found in the *Goldberg*. These hand crossings are often embellished with trills and other ornamentations, creating a textural repetition drawn from the *Goldberg Aria*. The six-minute *Crossings* resembles a game on the keyboard with running passages, contrary motions, and playful chases across the keyboard, punctuated by hockets and intricate ornamentations.

Besides the trills from the *Aria*, a passage in ‘Variation 8’ inspired my use of textural repetition. This variation features two contrasting sounds built on similar material, seen in bar 16 (in D major) and bar 32 (in G major). In bar 16, the spacing is open and written comfortably and idiomatically for the pianist. In contrast, the same material is used in bar 32, now in the tonic key of G major, and becomes extremely awkward to play due to the hand crossings (see Fig. 4.2 below). This difficulty arises from the original intention for the harpsichord with two manuals, as opposed to single keyboard instrument. Despite its awkwardness, the playful interplay of the hand crossings created a texture that sounded remarkably modern to me – evoking the textural passages of Ligeti’s *Continuum*, as discussed in Chapter One. I connected this texture with the trills from the opening *Aria*, forming the foundation for a recurring tremolo figuration in my own work.

Much like Ligeti’s use of ‘pattern-meccanico’ textures, I explored how rapid ornamentation create a similarly immersive surface. In this way, *Crossings* merges Baroque ornamentation with Ligeti-inspired textural density bridging two distinct eras through gesture and surface energy. This approach also pays homage to the bravura character of Bach’s original hand-crossing variations, extending their virtuosic gestures within a contemporary aesthetic.



Fig. 4.2. Comparison of bars 16 and 32 from Variation 8 of the *Goldberg Variations*.

Fig 4.3 (bb. 124-126) below illustrates my approach to tremolo figuration combined with hand crossings inspired by Bach’s *Goldberg*.



Fig. 4.3. My own tremolo figuration and hand-crossings in *Crossings* bb. 124-126.

4.1.1 Connections to the *Goldberg*

Formal structure

Following the two-part structure of the *Aria*, *Crossings* is divided into sections:

- i) Part 1 bars 1-79;
- ii) Part 2 bars 80-140

Descending stepwise bass line

This descending stepwise bass line from the *Aria* is occasionally used as a reference point in *Crossings*. This is evident in bars 93-95 (inverted G $\sharp$ –A–B–C $\sharp$ –D) and bars 103-105 (inverted B $\flat$ –B–D $\flat$ –E $\flat$).

Ornamentation

Trills and mordents from the *Aria* are interwoven into the textures of virtuoso passages with hand crossings. Just as the *Aria* opens and closes the set of thirty variations, the ornamentations in *Crossings* are similarly employed to open and close the work.

Unpredictability in Repetition

In the last set of variations, the tenth set, Bach breaks away from the predictable ordering of variations. Instead of a canon, 'Variation 30' transitions unexpectedly from the pompous 'Variation 29' into a quodlibet – a simple and joyful combination of folk tune. In my viewpoint, this unexpected turn represents the simplest yet most joyful moment in the entire set of thirty variations.

I reference this idea in the ending of *Crossings*. The section leading up to the conclusion (b. 117-120) features a tricky chase sequence with leaps in chords and runs across the keyboard. This unpredictability culminates in the introduction of a simple trill figure, which is then reduced to its barest form in bars 135 onwards, using hand crossings to close the work.

4.1.2 Looking Forward from Bach

Looking back to Deleuze from Chapter One, repetition functions as my *rhizome*.

A *rhizome* has no beginning or end; it is always in the middle, between things, interbeing, intermezzo..... Where are you going? Where are you coming from?
What are you heading for?⁵⁸

Continuously evolving and expanding, it opens up possibilities at both micro and macro levels. The two Bach works that influenced me connect to my music mainly through the use of repetition, even though this connection occurs mostly at a subconscious level.

In *Crossings*, I responded to the *Goldberg Variations*, where thirty variations are grouped into sets of distinct patterns, presenting different versions of the Aria. The piece also reflects broader themes of crossing paths between teacher and student, where shifting perceptions lead to new directions of music-making. In my final work, *Montage*, memories of my father takes me back to Bach's famous chorale prelude *Zion hört die Wächter singen* from Cantata No. 140. Here, the chorale is set against a ritornello structure, providing the groundwork for the hymn.

Both examples employ repetition as an internal technique, yet its role extends beyond recurrence. Its presence continually transforms in a non-linear, web-like manner, generating complexity and unpredictability. It is through this process of crossing, recrossing and multi-directed web that the interconnected framework emerges – one that defines both my compositional approach and the relationships it reflects.

⁵⁸ Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987), p. 25. There are six principles of *rhizome*—i) connection, ii) heterogeneity, iii) multiplicity, iv) rupture, v) cartography and vi) decalcomania. Under the principle of 'connection', I see a similarity between the *rhizome*'s non-linear approach and the concept of the 'iterative cyclic web.'

Chapter Five: Conclusion

This practice-led research developed into a deep personal journey of rediscovery for me — reconnecting with my artistic and cultural roots as a composer, researcher and educator – whilst also profoundly shaping my artistic compositional approach. The resulting iterative cyclic web,⁵⁹ akin to the spider web dreams Ligeti experienced, aptly visualises the interconnectivity of various components, much like the multi-layered textures Birtwistle deftly used to unravel a process being formed.⁶⁰ A subtle Southeast Asian undertone has always been apparent in my compositions. But ever since I embarked on my doctorate journey four and a half years ago, I have joined the dots to conclude that parts of my artistic decisions were subconsciously shaped by my Southeast Asian heritage, weaving in Western and Southeast Asian practices to form a fabric of multi-layered textures, whilst simultaneously employing the notion of repetition to achieve both contrast and unity.

This concluding chapter re-examines the outcomes of employing a compositional aesthetic that foregrounds the use of repetition, a dynamic relationship between predictability and unpredictability, and the intricate tapestry of contextual complexities in Southeast Asian culture contexts, while summarizing my composition portfolio and outlining future plans stemming from my doctoral research.

5.1 Summary and Outcomes of Repetition, the Dynamics of Predictability and Unpredictability, and Cultural Contexts

5.1.1 New structural possibilities and flexibilities

Repetition functions as a fundamental component in ensuring cohesion and coherence, despite fluctuating elements of predictability and unpredictability. For instance, *Sembilan* incorporated the symbolic architectural rooftop motif of the buffalo horn evident in traditional Minangkabau spired roof houses in Malaysia as an inspiration for the composition. Whilst *Sembilan*'s structure is unpredictable, devoid of traditional Western musical norms and forms, the repetition of the shape of the buffalo horn occurs in the i) melodic contour of the oboe, ii) the dynamic curve from soft to loud in the percussion instruments, and iii) the overall ascent to reach the apex of the work. Moreover, the repetition of the ringing sounds of the gong, which embodies

⁵⁹ Hazel Smith and Roger T. Dean, *Practice-Led Research, Research-Led Practice in the Creative Arts* (Edinburgh, United Kingdom: Edinburgh University Press, 2009), p. 23

⁶⁰ Dickinson, 'Mechanical – Magical', pp. 123–124.

the sonic characteristics of both Southeast Asian gongs and Western instruments such as vibraphones and almglocken, serves as the unifying element that binds together the entire piece with its unpredictability.

5.1.2 Translating Repetitive Patterns from Visual Arts into Music Composition

Whilst none of my individual compositions were directly influenced by a particular artwork, it was the concept and process of repetition evident in works by minimalist and post-minimalist artists such as Yayoi Kusama, Richard Long and Zhang Yu at the 'Minimalism: Space. Light. Object' exhibition in 2018 that spurred on my continued exploration and application of repetition of minimal material as a creative stimulus. This approach began my PhD journey and developed and transformed to an impactful outcome towards the end of my doctoral studies. The structure of *Montage* as a case in point is based on the repetition and accumulation of the earlier four pieces, gradually intensifying both musically and emotionally to conclude the entire series. Similarly, in Tazul Tajuddin's work, *Tenunan II* he draws inspiration from repeated patterns found in Southeast Asian batik as the basis of his structure to create mini sections that accumulate to shape the overall composition.

5.1.3 Creative Explorations in Addressing Global Issues Through Music

In the opening chapter, I referenced Kusama's *Infinity Net* paintings as visualisations of hallucinations that she had since childhood. The process of repetition can be therapeutic for individuals who have a history of, or suffer from traumatic episodes. Kusama, who suffered from ongoing mental health challenges, channelled her obsession with repetitive dots in her *Infinity Net* series, to free her from anxiety and furnished her with an expressive form of sanctuary.

Through the composition of my two orchestral works, *Radiance* and *Verdure* under the *Bell* Series, I unravelled a novel and compelling vehicle to musically address global issues. By focusing on specific sounds and sonorities, I am able to transform these repeated sonic elements into forms that engage with broader creative explorations of global challenges such as reflecting on the Covid -19 pandemic in *Radiance* and addressing environmental sustainability in *Verdure*. The initial series that began during my PhD journey continues to evolve, generating an impetus to use music and artistic expression to address complex societal, global challenges while fostering interdisciplinary learning opportunities.

For example, prior to the premiere performance of *Verdure* in Düsseldorf, I conducted a pre-concert talk with an environmental specialist on the topic of 'Carbon Compensation'. This led to invigorating discussions with the audience on how music can serve as a catalyst for raising awareness to promote sustainability and environmental change. Inspired by this experience, I am motivated to organize future programmes, music festivals and symposiums that utilize music as a powerful tool for addressing global and environmental concerns.

5.1.4 Emotional Resonance and Expressivity

The use of repetition and the dynamic relationship between predictability and unpredictability can enhance the emotional resonance and expressivity of compositions. By using repetitive gestures and manipulating their predictability, I am able to evoke a range of emotional responses that are deeply personal. In my music, emotional resonance is achieved when predictability and unpredictability coalesce. Predictability arises through repetition, creating a sense of familiarity, while unpredictability stems from the unexpected—breaking away from established expectations.

At the start of my doctoral studies, I explored ways to break away from minimalism as a systematic process while still engaging with its traits. By deviating from its norms, my goal was to reach my own unique conclusions, seeking a balance between following and breaking away from established frameworks. Midway through my studies, for example in *Jalanan*, I incorporated the sounds of church hymns and voices, which contrast with the heterophonic texture inspired by the contours of the Azan. This merging of influences reflects the complexities of my musical identity, shaped by both my Southeast Asian heritage and Western education. Towards the end of my doctoral studies, I delved into memory by recalling and transforming materials from the first work in the series, *Interweaves*. This process of repetition and transformation allowed me to evoke a deeply personal and expressive resonance, culminating in *Montage*, my most significant work both artistically and emotionally, which concludes my PhD journey.

5.2 Future Plans and Moving Ahead

5.2.1 New Directions in Music Education

My work *Empat*, for prepared string quartet, focuses on memory and repetitive forms in Southeast Asia. Due to its youthful exploration of childhood memories, I have garnered interest to transcribe the quartet for a full string orchestra for the Singapore Youth Festival (Strings) at the secondary and pre-tertiary levels. This adaptation provides an excellent opportunity to introduce contemporary techniques in both composition and performance, encouraging young musicians to engage with new forms and sounds that are conventionally missing from the standard music repertoire at this level in the region.

5.2.2 Research and Investigation into Ethnic and Folk Music of Southeast Asia

With a heightened awareness of my own heritage and its influence on my music over the past four years, I am motivated to deepen my exploration of repetition and to investigate new forms found in the folk and ethnic music of Malaysia and other parts of Southeast Asia. Through a concert I organized in Kuala Lumpur in 2022, *Our Colours, Our Stories*, I was introduced to a variety of indigenous cultures across Malaysia such as the Iban and Kenyah ethnic groups from the state of Sarawak. I am determined to continue this research as I embark on the next part of my artistic journey.

5.2.3 Connecting and Developing a New Series

Connecting from my *Bell Series* and future plans to explore Southeast Asian folk and ethnic music, one way to merge these elements is by beginning a new series. Drawing from my initial series, where each piece was written for a different instrumentation, I anticipate writing a new series of solo works, each featuring a different instrument informed by my discoveries in Southeast Asian ethnic music. One area that I have yet to explore is the use of electronics, which can be highly effective for analyzing sounds and microtones. This approach will be highly relevant when it comes to analysing pitch structures including tuning and scalar materials within ethnic music. Incorporating electronics in this manner would add a further layer to enrich and develop my creative process. With my cultural heritage and Western education background, I believe I am able to contribute towards a unique musical identity that is culturally and emotionally rich.

Building upon the foundations laid in earlier chapters — where I explore repetition as both a compositional and emotional process rooted in my Southeast Asian heritage and Western background — I understand my musical identity as an evolving synthesis of these influences. I am not seeking to fuse them into a singular language, but rather to allow the friction and dialogue between them to shape something personal and original. I am particularly interested in what occurs when these traditions sit alongside one other — sometimes in harmony, sometimes in tension.

This space — a creative territory formed by cultural interplay and sonic memory — is where my music finds its emotional resonance. It is a space not bound by tradition or linear development, but by openness — a field in which contrasting histories, sounds, and gestures can coexist, interact, and transform. It is a space that expands in multiple directions, across time, culture, and memory. Rather than being confined to a single trajectory, it allows for movement in many dimensions at once — where difference does not seek resolution, but resonance. In this space, music becomes a living environment: layered, relational, and unpredictable — where repetition, too, is no longer fixed or formulaic, but a vehicle for emergence and emotional depth.

Like the resonance of the gong, the infinity dots of Kusama's painting, the recurrence of Bach's music, and the final A-flat note in *Montage*, evoking a sense of infinity, this journey continues to unfold, resonating endlessly. As I look forward, this continuous note guides me, its memory persisting to shape new narratives, further defining my musical identity as I explore new territories in the realms of composition.

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