## Composition Portfolio

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1 Space Dust (twelve-tone serialism)

### 1.1 Working Timeline

Draft	Date	Area explored / Changes made
1	October 2020	Came up with the twelve-tone matrix and motifs
2	January 2021	Worked on notations, linkage of ideas, momentum, new themes, distinctive.
		musical character
3	March 2021	
Final	May 2021	

### 1.2 Write-up on Space Dust

### 1.2.1 Compositional Approach

The piece **Space Dust** utilises the twelve-tone technique. It depicts the chaotic nature of space dust and also the birth of new stars though the chaotic processes. The emphasis on all twelve tones in a Twelve-tone Equal Temperament system being equal, with no superior pitch or a sense of home key allows the exploration of atonality in a systematic way.

### 1.2.2 Harmonic Structure and Motivic Development

The piece has two major parts, characterised by the choice of tone rows. The first part is in  $\frac{4}{4}$ , bass clarinet and oboe play in parallel fifths, followed by a piano solo. In the second part, the oboe and piano play dotted quaver motif, with syncopation in between them. At the same time, the bass clarinet emphasises the meter of § . The subsection in the first four bars ends with a resolution to an Ab major chord. A transitional motif in bar 5 uses uniformed semiquavers. The motive in bar 5 is constructed with lines that are three semitones apart, resulting in twelve diminished-seven chords. The following bars are very dissonant to depict the chaos.

### 1.2.3 Musical Effects

The effect of chaos is achieved through the use of poly-rhythms. One prime example can be found from bars 21 to 23, where the oboe plays twelve evenly spaced notes per bar, the piano four and the bass clarinet five. This creates a twelve against five against four poly-rhythm.

The effect of consonance is achieved at the later half of the composition, where all three instruments play the same tone row but at different pace. Since the tone row is mostly made of fifths, the delay actually creates many intervals of fifths between the different instruments, resulting in more consonant sounding chords. This signifies resolution and the end of chaotic space dust reaction, meaning the birth of a new star.

#### 1.2.4 Technique Explored

The prime form is crafted based on the pitches: D, G, E, A, B $\flat$ , E $\flat$ , C, F, A $\flat$ , D $\flat$ , F $\sharp$ , which formed the tone row  $\mathbf{P}_0$ . The tone row is used to generate the matrix below:

	$\mathbf{I}_0$	$\mathbf{I}_5$	$\mathbf{I}_2$	$\mathbf{I}_7$	$\mathbf{I}_8$	$\mathbf{I}_1$	$\mathbf{I}_{10}$	$\mathbf{I}_3$	$\mathbf{I}_6$	$\mathbf{I}_{11}$	$\mathbf{I}_4$	$\mathbf{I}_9$	
$\mathbf{P}_0$	D	G	E	A	Вβ	Εþ	C	F	Ab	Dþ	F#	В	$\mathbf{R}_0$
$\mathbf{P}_7$	A	D	В	Е	F	Вβ	G	С	Εþ	Αþ	$\mathrm{D}\flat$	F#	$\mathbf{R}_7$
$\mathbf{P}_{10}$	C	F	D	G	Aþ	$\mathrm{D}\flat$	Вþ	Eþ	F#	В	Е	A	${f R}_{10}$
$\mathbf{P}_5$	G	С	A	D	Εþ	Ab	F	В♭	Dþ	F#	В	Е	$\mathbf{R}_5$
$\mathbf{P}_4$	F#	В	Ab	Dþ	D	G	E	A	С	F	Вþ	Eþ	$\mathbf{R}_4$
$\mathbf{P}_{11}$	Dþ	F#	Eþ	Αþ	A	D	В	E	G	С	F	Вþ	$\mathbf{R}_{11}$
$\mathbf{P}_2$	Е	A	$\mathrm{F}\sharp$	В	С	F	D	G	Вβ	Eþ	Aþ	Dβ	$\mathbf{R}_2$
$\mathbf{P}_9$	В	Е	$\mathrm{D}\flat$	F#	G	C	A	D	F	Вβ	Eþ	Αþ	$\mathbf{R}_9$
$\mathbf{P}_6$	Αþ	Dþ	Вβ	Eþ	E	A	$\mathrm{F}\sharp$	В	D	G	$\mathbf{C}$	F	$\mathbf{R}_6$
$\mathbf{P}_1$	Eþ	Αþ	F	Вþ	В	E	$\mathrm{D}\flat$	F#	A	D	G	C	$\mathbf{R}_1$
$\mathbf{P}_8$	Вþ	Εþ	С	F	F♯	В	Αþ	Dþ	Е	A	D	G	$\mathbf{R}_8$
$\mathbf{P}_3$	F	Вþ	G	C	Dþ	F#	Еþ	Αb	В	Е	A	D	$\mathbf{R}_3$
	$\mathbf{RI}_0$	$\mathbf{RI}_5$	$\mathbf{RI}_2$	$\mathbf{RI}_7$	$\mathbf{RI}_8$	$\mathbf{RI}_1$	$\mathbf{RI}_{10}$	$\mathbf{RI}_3$	$\mathbf{RI}_6$	$\mathbf{RI}_{11}$	$\mathbf{RI}_4$	$\mathbf{RI}_9$	

1.3 Final Version

# Space Dust

twelve-tone technique Gordon Chan Bass Clarinet Piano Ob. B. Cl. Pno. Ob. B. Cl. Pno.











1.4 Draft 1

1.5 Draft 2

1.6 Draft 3

2 Infree (tone clusters)

### 2.1 Working Timeline

Draft	Date	Area explored / Changes made		
1	27 <sup>th</sup> January, 2021	Planned characteristic rhythmic motifs and musical progression.		
2	21 <sup>st</sup> March, 2021	Enhanced the foreground/background contrast.		
		Worked on the musical direction and building of momentum.		
		Eliminated the doubling of parts.		
3	2 <sup>nd</sup> May, 2021	Rewrote instrumental parts, considering practicality,		
		harmonic counterpoints and texture.		
		Reworked notations for ease for reading.		
Final	1 <sup>st</sup> September, 2021	Reworked on the usage of clusters, with 'tonality'.		
		Varied the musical materials, avoiding exact continuous sequences.		
		Reworked on the pedal markings such that they make sense.		

### 2.2 Write-up on Infree

### 2.2.1 Introduction

The title of **Infree** describes the state of not being able to be free. In this case, it describes the notes and voices in the piece being somewhat 'entangled' with another. It also refers to the effect of tone clusters being concentrated chunks rather than dispersed. Certain dynamic changes and rhythmic figures are used to support the character of the work.

### 2.2.2 Harmony

In the introductory motif, a E minor tonality is suggested by the flute and violin. That somewhat stable tonality then gave way at bar 2 when the tone clusters are introduced.

There are to main types of tone clusters, the major type and minor type. The major type is where the interval between the notes are all major seconds, while minor type made up of minor seconds. Their are also cluster that do not belong to any types but counted as bitonal. The following bar are tone clusters made up of major seconds, followed by a handover of melody to the piano at bar 3, where the piano play increasingly dissonant chords that are eventually made up of minor seconds.

The piano plays this dissonant passage in triplets from bar 3 to bar 5 until it descends to the massive clusters at the beginning of bar 6. At bar 6, the motif is accompanied by the piano playing powerful bass clusters, which have more of a percussive effect than harmonic colour.

From bar 13 to 16, the piano plays whole-tone clusters. There are four chords, and they are transpositions of on another.

### **2.2.3** Motifs

At bar 6, the woodwinds and strings play a modified version of the opening motif, changed in a way that the motif is made of clusters built in major seconds. At bars 10 to 12, the piano plays a descending motif, where all the chords are made of two notes that are a major seventh apart. While the rest plays a three bar motif that is constructed by a minim, followed by a quaver that is displaced a quavers backwards each bar. The dynamics in these three bars resembles waves—whenever the piano plays forte, the rest plays softly and vice versa.

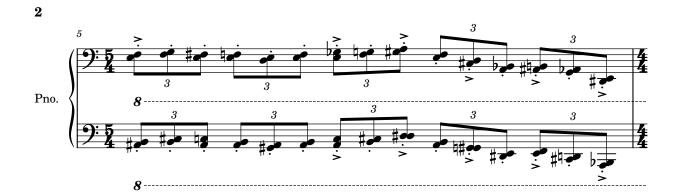
In the following four bars, the piano supports the triplet motif in the other instruments. That motif is made up of chord of minor seconds which oscillates up and down for three sets of triplets and then goes downwards for the first two bars, just descending triplets at the third bar, and descending triplets

that are grouped in two at the forth.

2.3 Final Version

## Infree

Gordon Chan Flute ‡ο mp Clarinet mpViolin Violoncello mpGrand Piano Fl. Cl. #<u>#</u> Vln. Vc.  $\boldsymbol{p}$ Pno.

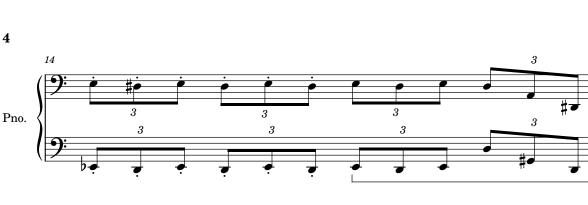


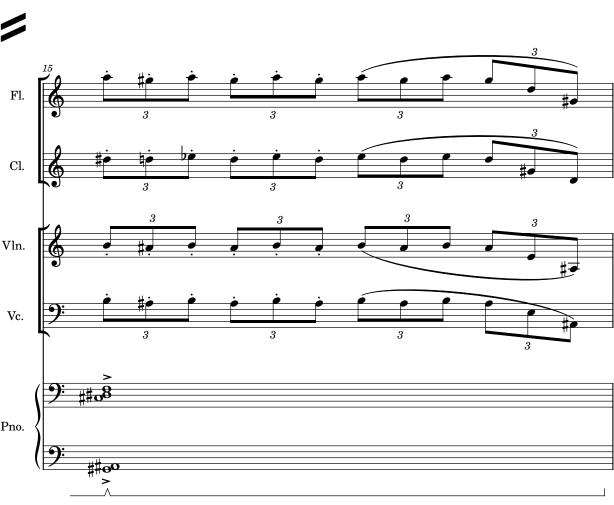


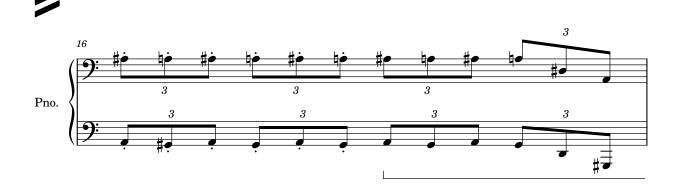










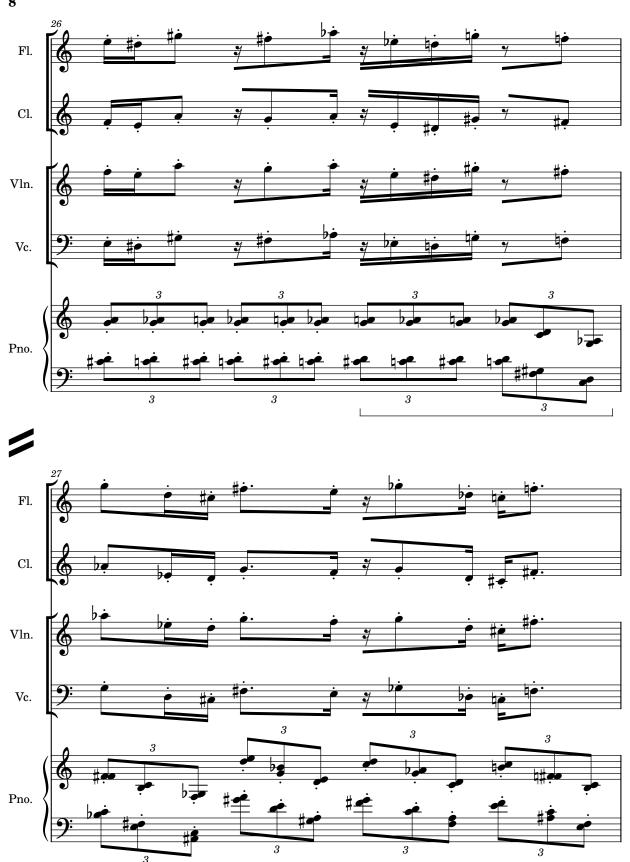




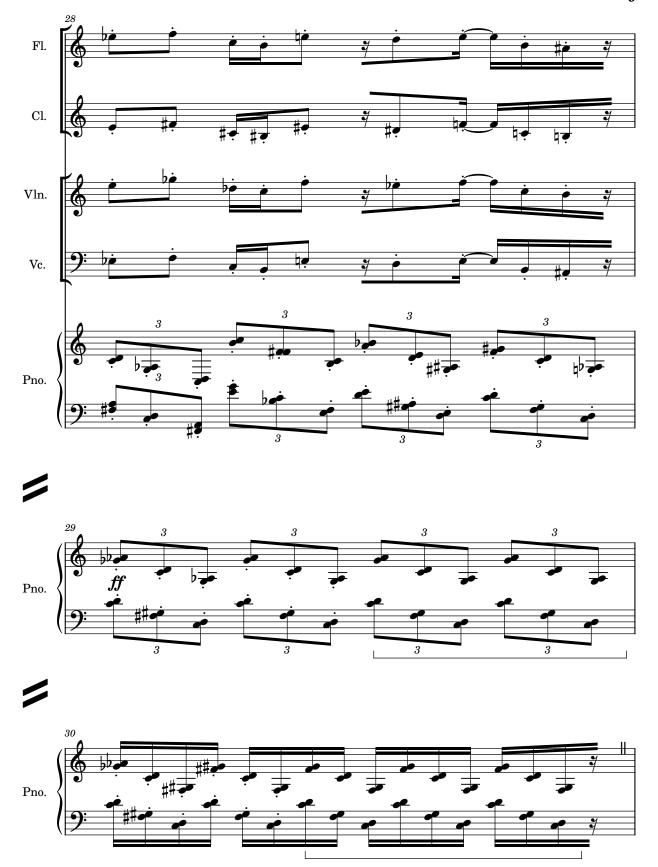




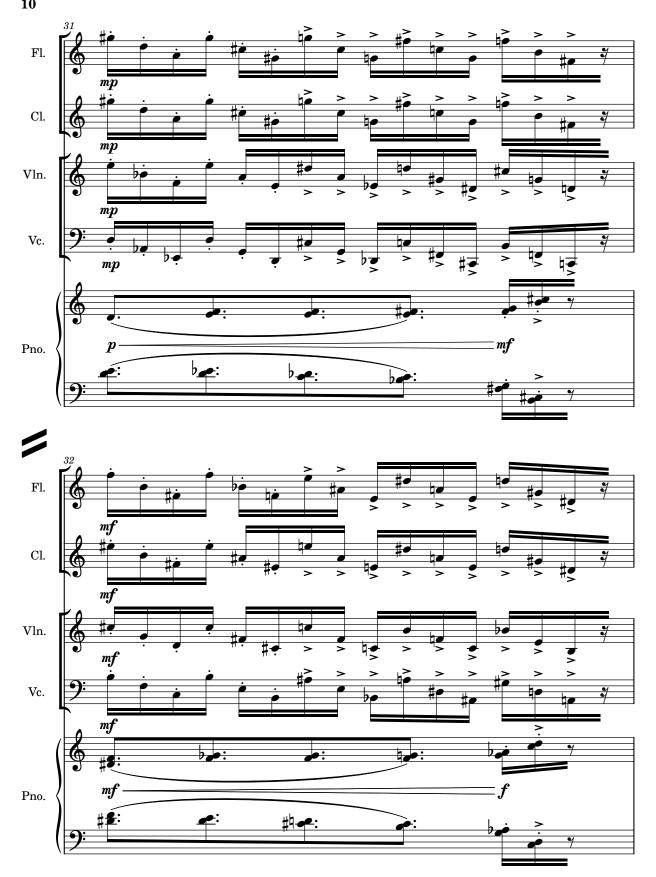


















2.4 Draft 1

3 Wonky Steps (rhythmic counterpoint)

### 3.1 Working Timeline

Draft	Date	Area explored / Changes made
1	26 <sup>th</sup> February, 2021	Explored with descending fifth motive, metric displacement, canon.
2	2 <sup>nd</sup> May, 2021	Greater extent of rhythmic counterpoint.
		Explored with sense of shifting of space and time.
		Improved musical direction, notions,
		imitations between clarinet and piano.
3	14 <sup>th</sup> July, 2021	Worked on harmonic progressions, sense of tempo increase.
Final	$31^{st}$ Ang, 2021	Worked on sense of suspense before resolution.
		Improved harmonic direction and harmonic support.
		Improved counterpoint, sense of arrival, notations.

## 3.2 Write-up on Wonky Steps

#### 3.2.1 Compositional Approach

The piece, **Wonky Steps**, explores the use of rhythmic counterpoint to create a sense of instability in the music, in addition to metric displacements and poly-rhythms.

#### 3.2.2 Structure and Motive Development

Overall, the work is structured in four sections as such:

Section	Bars	Main Musical Features
A	1-11	falling fifth motive and cyclic bass line
В	12-16	counterpoint between bass and piano; running notes in clarinet
С	17-26	piano rhythm with increasing intensity; reprise of opening motive
A'	27-35	canon in all parts; derived from the retrograded opening motive

The piece opens with a series of falling fifths in both the piano and the double bass. After that, the double bass plays a bass line based on the melody in the clarinet part. This rhythm of the clarinet melody is constantly imitated by the piano throughout bars 5 to 10. A bar of transition is used to change the rhythmic character at bar 12, to link to a new section. The upper melody in bar 12 played by the clarinet is first played by the piano at bar 11 to foreshadow the new rhythmic motif.

The main theme in section B is taken by the double bass, in a poly-rhythmic fashion, against the piano part. This theme is based on the same rhythmic idea introduced a bar before. This theme is set against a new seven-beat rhythm that emphasises all the even quavers of a bar while right hand plays three quavers in unison with the double bass at the end of each bar. The three quavers at the end emphasises the interaction between the piano and double bass parts. The clarinet then plays a rising Hijaz scale from G4 all the way up to E6, at bar 15.

The third section spans from bars 17 to 26. In this section, the double bass repeats yet another rhythm while outlining the chordal qualities of the bars. The main effect created in this section however comes from the piano part. The piano plays an ever increasingly intense rhythm as the music progresses. In particular, in the first bar of the section, the rhythm consists of two crochets and two dotted quavers. In the second bar, it changes to three triplets and two dotted quavers. This pattern continues until on the fourth bar, there are five quintuplets and two dotted quavers. The frequency of note heard increases, building up to the climax. As a result, a sense of increasing excitement is created as the space between

each note decreases as the music progresses. In the subsequent part, the three instruments are playing in unison to an irregular rhythmic pattern to resolve to an  $F\sharp$  major chord. Every note other than the last three notes in this section are accented so that the rhythmic qualities of this motive can be projected clearly. The rhythm used here consists of two groups of four quadruplets and two groups of four regular quavers. It is also worthy to note that these groups are arranged with non-retrogradable rhythm.

The forth and final section starts from bar 25 until the end of the work. Canon is used in this section. It consists of a series of rising fifth motif with the rhythm derived from retrograding the opening motif. The canon resolves to a quasi-major chord.

#### 3.2.3 Rhythmic Technique Explored

Rhythmic counterpoint is explored throughout the work. For example, from bar 3 to bar 11 as the double bass plays a two-bar rhythmic cycle, with rhythmic interactions between the bass line and the upper voices. A similar approach is used from bar 13 to 20, where the bass plays repeated poly-rhythmic motives while piano and clarinet playing other higher voices.

Other techniques are also explored, such as a metric displacement in the piano's motif from bar 5 to bar 8 where semiquavers rests are constantly being added each time as the motif repeated, and a non-retrogradable rhythm from bar 21 to 22.

3.3 Final Version

# Wonky Steps

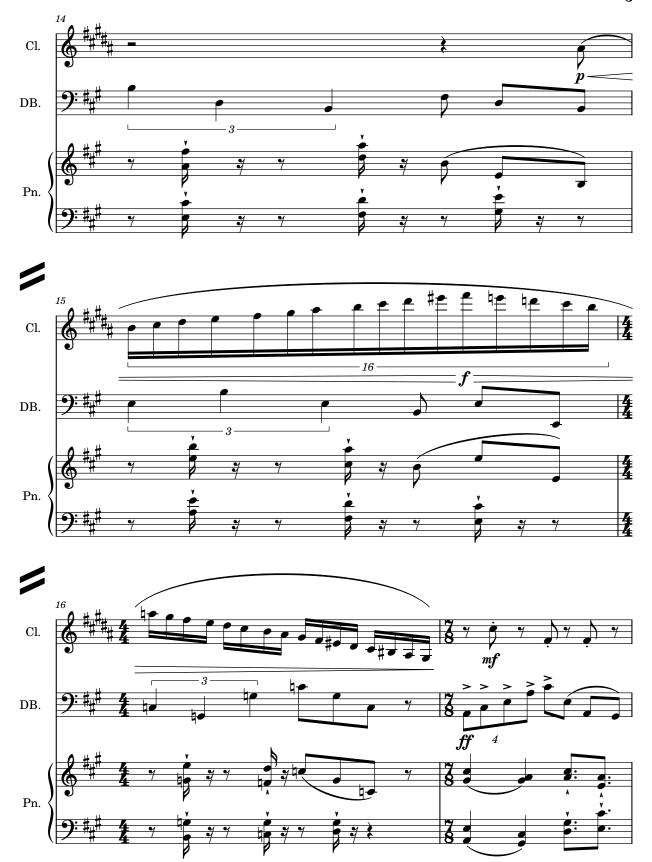
# Rhythmic Counterpoint

Gordon Chan







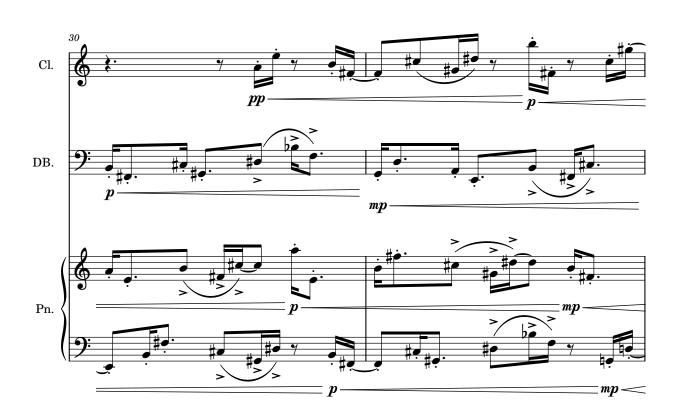


4 DB. DB. DB.













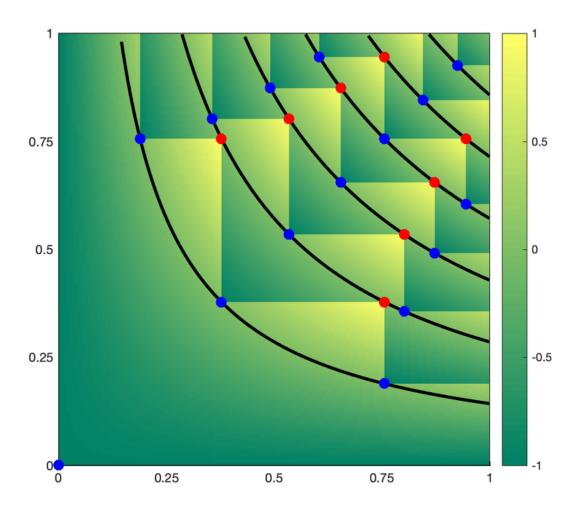


3.4 Draft 1

3.5 Draft 2

3.6 Draft 3

## 4 Axiomatic Approximation (for Clarinet Quintet)



### 4.1 Working Timeline

Draft	Date Area explored / Changes made	
1	October 2020	came up with the three sections
2	January 2021	improved transition between sections
3	March 2021	add interruptions in places where it may seem repetitive
Final	May 2021	fixed notations, overall presentation and improved ending

#### 4.2 Write-up on Axiomatic Approximation

The title of Axiomatic Approximation comes from the fundamental axioms in mathematics and the usual idea of approximation in science. There are three main sections in the work. The first section is a strange waltz in  $\S$ . The second section is a waltz in  $\S$ . The third section is a swing beat in  $\S$ . The orchestration of the work is that of a clarinet quintet, however, unlike the classical instrumentation where there are two violins and no double bass, I have reduced one violin in exchange of a double bass, as I feel this there should be a higher presence of lower register sounds in my work. It is worthy to note that, the tempos of each section are adjusted in such a way that the pulse is constant throughout the whole piece. In particular, the pulse is maintained at 69 B.P.M..

The first section of the work portray a light-hearted feel. Starting with cascading pizzicato, the five-beat feel is established at the start of the section. The pizzicato of the strings may often also be associated with a sense of cuteness, which sets the mood for the whole section. This section is referred to as 'strange waltz' because five beat is one beat less than the multiple of three, six. In terms of harmony and key centres, they are rather unstable to suit the atmosphere. For instance, the piece starts in the key of F major. However, in bar 11, it is quickly changed to the key of  $F\sharp$  major. The modulation here utilises the melody as a pivot, as the melody moves down chromatically from C to Bb. After that, the same theme is played in Bb with clarinet rhythmic embellishments. The original theme is played once again by the clarinet and higher strings in a tutti fashion. The same modulation is repeated from the key of  $F\sharp$  major to the key of G major. An interruption, however, changes in key abruptly to F major at bar 30 for two bars, and at 32 abruptly to  $F\sharp$  major. This  $G\to F\to F\sharp$  movement is inspired by chromatic enclosure where the target key is  $F\sharp$  but before reaching the target, the keys a semitone around the target key is first played. At rehearsal mark C, a chord progression of  $bVII\to biii\to VI\to ii\to V\to I$  then take the key from  $F\sharp$  to G. Between the transition of section one and section two, there is chromatic movements in the strings to modulate from  $F\sharp$  major to D minor.

This second section is a waltz in compound time. It begins with a opening melody that outlines the overall tonal centre of the whole section. This opening portion span ten bars, establishing the key of D minor. Then, the cello and double bass plays in parallel fifths an ostinato pattern that highlights heavily on the compound meter feel. It also reinforce the harmony. After the background of the theme has been well introduced into the music, the clarinet starts play the main melody of this section, accompanied by violin and viola. The pizzicato played by the upper strings outline the meter and suggest a harmonic progression which agrees with the melody played by the clarinet. After the whole melody is played once, the melody is then taken over by the upper strings, with lower strings playing long bass notes instead of downbeat quavers. With the melody reiterated once more, the clarinet plays flourishes on top of the original melody in the form of virtuosic fast scales. These scales are D Hijaz Kar ascending and D Locrian descending. An interruption soon follows as the melody is cut off by an abrupt entry of the cello ostinato pattern. This interruption is responded by the other instruments gradually until rehearsal mark F where the clarinet, upper strings and lower strings are each playing phrases that have separate lengths that converge bar 78. The following two bars, outlining  $F\sharp$ , D, B and G in the bass, act as a cushion to get everyone ready for rehearsal mark G, which leads to the end of the waltz.

The last section is a transition leading into a fast swung passage and frenzy. The transition is opened by the double bass playing the note G and the clarinet imitating the melody from the previous section, followed by a characteristic arpeggio that land on the note G, the same note that the double bass is playing, just four octaves higher. After that, the violin, viola and cello play fragments of four quavers that take reference to the first four notes of motif from the swung section. The frequency of the appearance of fragments increases until there is a sudden chromatic, octave displacing four-note motif played by the clarinet, which is then passed to the other instruments. Then, the five chord of C is played tutti, signifying the entrance of the swung section. In the swung, section, there are a few prominent motifs, they are 'CABBAGE', 'BEEF' and 'EGG'. These motifs are introduced in a quasi-fugue fashion, with episodes at rehearsal mark I. Also, 'EGG's are played as their separate own episodes. This swung passage leads to the last portion as a frenzy state, where all of the voices goes into frantic playings, preparing for the end of the work.

4.3 Draft 1

4.4 Draft 2

4.5 Draft 3

4.6 Final Version

# **Axiomatic Approximation**

Gordon Chan























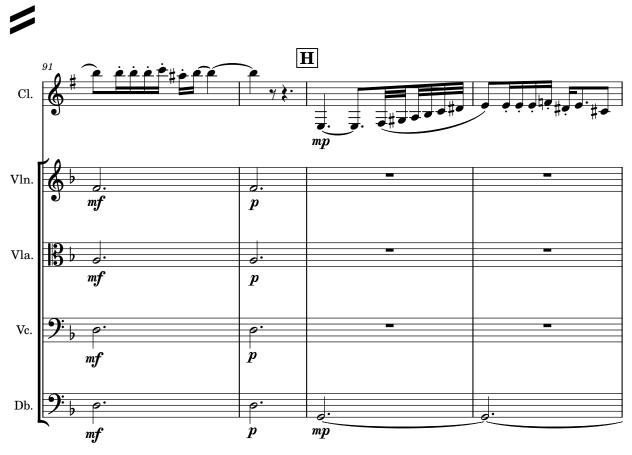


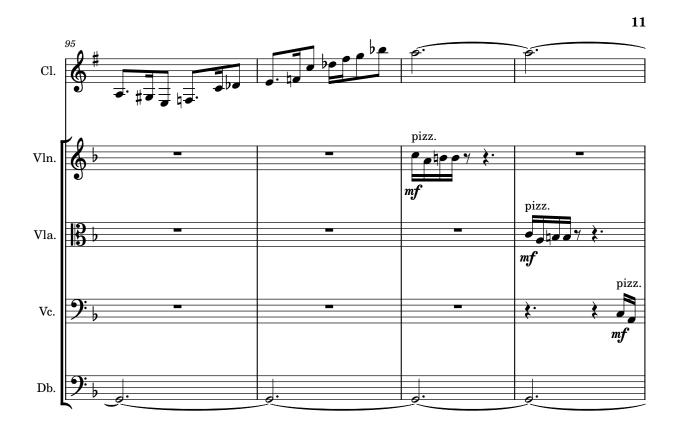






















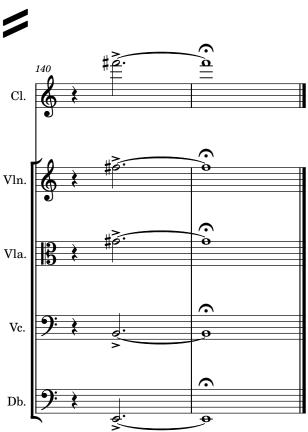












### 5 Acknowledgement

These are the people whose presence is crucial to the completion of this composition portfolio:

- Ms Yick, my composition music teacher, who follow closely on my composition progress and taught me composition techniques;
- ullet my uncle, who gives me emotional support;
- my aunt, who gives me excellent tips in navigating through junior college life.

### 6 Epilogue

Moral integration