THESIS

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For the Degree of

MASTER OF MUSIC

By

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Psalm 23 is a sacred work in four movements, written for women's chorus (SSAA), a tenor solo and a chamber ensemble consisting of flute, oboe, trumpet, percussion, timpani, and string quartet. It is designed to be performed as a portion of a church service or in concert.

The text, Psalm 23 from the Bible is sung in Chinese, and the verses of the Psalm are arranged as follows:

| Movement | Verses | General musical characteristics |
| :---: | :---: | :---: |
| 1 | 1 | pastoral |
| 2 | $2-3$ | peaceful |
| 3 | $4-5$ | agitated |
| 4 | 6 | majestic |

The form, tonal structure and harmony of each movement are influenced by the characteristics of an original synthetic scale.

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Psalm 23 is a sacred work in four movements written for tenor solo with women's chorus (SSAA) and a small instrumental ensemble consisting of flute, oboe, trumpet (C), timpani, percussion, and string quartet. The form, tonal structure and harmony of each movement are based on an original synthetic scale designed by the composer. Each of the movements employs a different compositional technique and approach, which are explained in chapter two.

The textures in this work employ monophony, homophony and polyphony.

## Chapter 1

## The Synthetic Scale <br> Construction

The scale used in this piece is based on a pentachord. (see figure 1)


Fig. 1 -- The pentachord

The interval succession is half-step, whole step, whole step and half-step. The intervals of this pentachord match the first five notes of the Locrian mode. (see figure 2)


Fig. 2 -- The first five notes of the Locrian mode

The entire synthetic scale is constructed by building another pentachord from the last note of the pentachord. Hence, the last note of the first pentachord becomes the first note of the second pentachord. (see figure 3)

first pentachord

Fig. 3 -- The synthetic scale

Characteristics
The scale is structured to resemble a compound palindrome. The structure of the pentachord also is a palindrome. The intervallic relationships of the scale-steps are the same when read from left to right and right to left. (half-step, whole step, whole step and half-step) (see figure 4)


Fig. 4 -- The pentachord resembles a palindrome

In figure $4, \mathrm{~B}^{\mathrm{b}}$ becomes the mid-point of the palindrome. This mid-point is important to the tonal structure of this work. This is discussed in chapter two.

The entire scale, consisting of two pentachords, is a compound palindrome because it combines three palindromes
together. (see figure 5)


Fig. 5 -- The entire scale is a compound palindrome

In figure 5, C\# is the mid-point of the scale. This mid-point is very important because it is the overlap-point of two pentachords and the interval from this point to either end of the scale is a triton which is the most prominent interval in this work.

The scale can assume the characteristics of two more familiar scale patterns by the elimination of certain pitches. If the scale is built on $G$, for example, a whole tone scale will result by eliminating $G$ and $C \#$. (see figure 6)



Fig. 6 -- A whole tone scale based on A-flat

Such manipulation of the scale is used widely in the fourth movement, which is discussed in chapter two. If $A^{b}, C^{\#}, E$ and $\mathrm{F}^{\#}$ are eliminated, an incomplete pentatonic scale results (see figure 7) This idea is used in the second movement and is discussed in chapter two.


Fig. 7 -- An incomplete pentatonic scale on $G$

The overall structure and design
The form and tonality of each movement is based on the palindromic structure of the scale, for example, the form of the first movement which consist of three sections $A, B$ and retrograde A. (see figure 8)
A B RA. (retrograde A.)

Fig. 8 -- The form of movement $I$ is a palindrome

The tonal design of this movement shares the same idea. The G scale is used in both the $A$ section and the Retrograde $A$ section, and the same scale, with emphasis on $C^{\#}$, is used in the $B$ section. (see figure 9)


Fig. 9 -- The palindromic tonal structure of movement I

The structure of the second movement also includes palindromic features. The tonal design, for example, is a palindrome. This movement begins in $E$ then moves to $\mathrm{B}^{\mathrm{b}}$, and concludes in E. Although the overall form is not a palindrome, the form of the central section is. The B section is derived from a four measure idea (mm 17-21) and a linking passage (mm 21-24). The idea begins in $B^{b}$ and is followed by a fivemeasure linking passage, and its return a half-step higher (B母).

Two retrograde versions of these four measures in $B$ and in $B^{b}$ are used to conclude this section. The linking passage returns as a transition to the next section. The whole section is a compound palindrome. (see figure 10)


Fig. 10 -- The $B$ section of movement II is a palindrome

The form of the third movement employs the same idea as the first movement. The form is $A B$ Retrograde $A$ and the key areas are $C^{\#}$, $G$ and $C^{\#}$.

Finally, the fugal four th movement, is built on a palindrome-subject: (see figure 11)


Fig. 11 -- The fourth movement is based on a palindromesubject

The pitches in the first half of the subject are from the first theme of the first movement. The rhythm is changed to fit the words. The pitches in the second half of the subject are the mirror image of the first half in a different rhythm. The pitches of the whole subject form a palindrome with $\mathrm{D}^{\mathrm{b}}$ being the mid-point.

The tonal design of the fugue is also a palindrome. The introduction and the exposition are in the key of $G$, the middle entrance of the subject is in $C^{\#}$, and the final section returns to $G$.

Chapter 2

Compositional Techniques and Approaches Building-Block Technique

One of the major compositional devices employed in this work is the building-block technique. It is best demonstrated in the third movement where blocks of musical ideas are manipulated or re-arranged. Four basic blocks, A (m 7-12), $B(m 14-18), C(m 13)$, and $D(m 26-28)$ are used to develop the whole movement. The following chart (figure 12)
illustrates the procedure:


Fig. 12 -- The building-block techniques used in movement III

Three blocks are put in different order, sometimes transposed up a half-step as in $m$ 45-50, and $m 51-54$, and sometimes overlaped with one another as in m 51-54 and m 55-69.

The same technique is used in the $B$ section of the second movement. This section is based on Block A (m 17-20) and Block B (m 20-24). The main thematic idea is Block A, while Block B serves as transitional material. In this section, Block A is transposed and retrograded. (see figure 13)


Fig. 13 -- The building block used in the $B$ section of movement II

## Scale Manipulation

The synthetic scale used in this work is manipulated in different ways to create the illusion of other scales. For example, an E scale is used in the beginning of the second movement. By emphasizing and omitting certain notess of the scale, the tenor line in measure 14 suggests a pentatonic sound: (see figure 14)


Fig. 14 --- The tenor line in movement II suggests a pentatonic scale

The same technique is used in measures 17-19. The tenor line sounds like more in a pentatonic scale than in $B^{b}$ scale: (see figure 15)


Fig. 15 -- The tenor line of movement II suggests a pentatonic scale

The scale is also manipulated to give the illusion of whole-tone scales. For example, the tenor line from measures 6-7 of the second movement outlines a whole-tone scale: (see figure 16)


Fig. 16 -.- The tenor line in movement II suggests a whole-tone scale

The last movement also features the same illusion. The instrumental episode after the first entrance of the subject (m 36 on) implies the sound of the whole-tone scale. The main idea of this sequential passage outlines an ascending whole-tone scale: (see figure 17)


Fig. 17 -- The sequential material in movement IV outlines an ascending whole-tone scale

## Tritone Usage

The tritone is the most important interval in this work. It predominates melodically and harmonically and also has structured influences.

Most of the chords that are used in this work include the tritone. For, instance, the string pizzicato in the beginning of the first movement is a tritone chord. (see figure 18)


Fig. 18 -- The tritone chord used in the first movement

The chord in $m 51$ of the same movement illustrates another tritone chord. (see figure 19)


Fig. 19 -- The tritone chord in movement I

It is melodically evident in most of the lines. Tritone leap, and the outlining of this interval are the common melodic features, for example, the violin part of the third movement in measures 17-19. (see figure 20)


Fig. 20 -- The tritone-feature of the violin line in movement III

The tonal design of each of the movements also reflects a tritone relationship. All of the movements are structured in three sections, and the forms of the first and third movements are designed as palindromes. In all cases, the scales that are used in the middle sections have the tritone relationship with the scales that are used in the other two sections. The overall design is as follows:

| Movement | I |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Form | A | B | Retrograde | e $A$ |  |
| Scales | G | $\mathrm{C}^{\#}$ | G |  |  |
| Movement |  | II |  |  |  |
| Form | A | B | A. |  |  |
| Scales | E | $B^{\text {b }}$ | E |  |  |
| Movement |  | II |  |  |  |
| Form | A | B | Retro. A |  |  |
| Scales | $C^{\#}$ | G | ${ }_{\mathrm{C}}{ }^{\text {\# }}$ |  |  |
| Movement |  |  | IV |  |  |
| Form | Fugal | Exp | osition | Mid-Entrance | Final |
| Scales |  | G |  | $C^{\#}$ | G |

## Textural Contrast

Two different techniques are employed in this work to create a rich textural content. Besides the basic textures such as monophony, homophony, and polyphony, combinations of any of these two are used to produce layers of contrasting texture as seen in the middle entrance of the fugue (m 25-30). The polyphonic texture of the chorus is used to counteract with the homophonic instrumental accompaniment. (see figure 21)



Fig. 21 -- Textural contrast used in movement IV

Another technique is the use of sharply contrasting textures to create a wide variety of textural interest. The last movement is structured as a fugue with textural emphasis. The textural analysis below (figure 22) illustrates this technique.

| Textures | Measures |
| :--- | ---: |
| Contrapuntal | $1-22$ |
| Homophonic (16th notes) | $23-25$ |
| Contrapuntal against homophonic | $25-30$ |
| Parallel chord (8th notes) | $30-36$ |
| Thin contrapuntal | $36-46$ |
| Parallel chords (quarter and half notes) | $47-53$ |
| Close-stretto against homophonic | $54-59$ |
| Unison against contrapuntal | $60-61$ |
| Homophonic | $62-72$ |

Fig. 22 -- The textural analysis of movement IV

Soloist and Chorus Treatment
A tenor soloist is used to represent King David, the poet of the Psalm who reflected his feeling about God as a shepherd. He participates in all movements, with and without the chorus. The second movement features him as soloist with the instrumental accompaniment.

A women's chorus is used to create a contrast to the male soloist. In the third movement (m 26-29), for example, the tenor solo sings over a women's chorus which is treated

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as the background. (see figure 23)
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Fig. 23 -- A women's chorus is used to create a contrast to the male soloist in movement III

The women's chorus, for example in the first movement (m 12-17) is treated as a part of the instrumental ensemble. (see figure 24)


Fig. 24 -- The women's chorus is treated as an instrument in movement I

It is also treated as an accompaniment in measures 42-45 of the same movement. (see figure 25)


Fig. 25 -- The women's chorus is treated as an accompaniment in movement I

Finally, a variety of extended vocal techniques are employed in the third movement, namely, tongue clicking, tongue rolling, singing on "ee", "ah" and "moh", and vocal clusters are employed in the third movement. These effects, for example from measures 70-72 create sharp textural contrast to the instrumental parts. (see figure 26)


Fig. 26 -- Extended vocal texhniques are used in movement III to create textural contrast

## APPENDIX

## The English translation of Psalm 23

PSALM 23
A. Psalm of David

1. The Lord is my shepherd, I shall not want.
2. He makes me lie down in green pastures; He leads me beside quiet waters.
3. He restores my soul; He guides me in the paths of righteousness for His name's sake.
4. Even though I walk through the valley of the shadow of death, I fear no evil; for thou art with me; Thy rod and Thy staff, they comfort me.
5. Thou dost prepare a table before me in the presence of my enemies; Thou hast anointed my head with oil; my cup overflows.
6. Surely goodness and loving kindness will follow me all the days of my life, and I will dwell in the house of the Lord for ever.
(New American Standard)

## PSALM 23

by

PSALM 23

A Sacred Song for Tenor Solo, Women's Chorus and Instrumental Ensemble

VOICE<br>Tenor Solo<br>Women's Chorus (SSAA)

INSTRUMENTAL ENSEMBLE

Flute
Oboe
Trumpet in $C$
Percussion
2 Triangles
Bell Tree
2 Woodblocks
Jawbone
Cymbals (crash)
Tam Tam
Snare Drum
Bass Drum
Glockenspiel
Vibraphone
Timpani (4)
String Quartet

## Vocal Instructions for Movement III



Tongue-clicking on an approximate pitch
ror Tongue-rolling on any pitch between the given range

N2T Making the sound of "ee" on any pitch between the given range

へ Making the sound of "Ah" on any pitch between the given range
mam Making the sound of "Moh" on any pitch between the given range
$\uparrow$ The highest possible pitch
$\downarrow$ The lowest possible pitch

PSALM XXII

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