CHAPTER TWENTY-ONE

Altered Non-Harmonic Tones

A non-harmonic tone which has a spelling foreign to the diatonic scale, and which does not disturb the root relations with surrounding chords, is called an altered non-harmonic tone.

Such altered tones can be derived from the modes of the major scale. The following table shows each mode of the major scale, generated from the same tone, and the resulting chromatic alterations:

<table>
<thead>
<tr>
<th>MODE</th>
<th>SPELLING</th>
<th>ALTERATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>Ionian</td>
<td>C D E F G A B</td>
<td></td>
</tr>
<tr>
<td>Dorian</td>
<td>C D E♭ F G A B♭</td>
<td>2♭</td>
</tr>
<tr>
<td>Phrygian</td>
<td>C D♭ E♭ F G A♭ B♭</td>
<td>4♭</td>
</tr>
<tr>
<td>Lydian</td>
<td>C D E F♯ G A B</td>
<td>1♯</td>
</tr>
<tr>
<td>Mixolydian</td>
<td>C D E F G A B♭</td>
<td>1♭</td>
</tr>
<tr>
<td>Aeolian</td>
<td>C D E♭ F G A♭ B♭</td>
<td>3♭</td>
</tr>
<tr>
<td>Locrian</td>
<td>C D♭ E♭ F G♭ A♭ B♭</td>
<td>5♭</td>
</tr>
</tbody>
</table>

In comparing the modes with the major scale (Ionian), one finds that modes with the fewest alterations are the Lydian, with a raised-four, and the Mixolydian, with a lowered-seven. These are the most common chromatic alterations in major keys, in music of the 17th and 18th centuries.

Other alterations are less frequent, and include the lowered-six, lowered-second, and the lowered-third in a major key. In minor keys, the raised-four is the most common chromatic alteration. The raised-three (at the final cadence) is less common, and the lowered-two is rare.

BACH'S USAGE

More than one hundred altered non-harmonic tones appear in the 371 chorales. Most of the alterations occur in major keys. Three types of altered non-harmonic tones appear in a major keys: lowered-seven, raised-four, and lowered-three. In minor keys, Bach used only the raised-four.

Altered non-harmonic tones are introduced and resolved most often diatonically, usually as passing tones, and infrequently as lower neighboring tones. They never appear as suspensions, escape tones, or appoggiaturas.
Modes of the C Major Scale

Ionian

Dorian

Phrygian

Lydian

Mixolydian

Aeolian

Locrian
CHAPTER TWENTY-TWO

Altered Chords: Introduction

An altered chord includes one or more tones that have been raised or lowered, and are not in the key. An altered chord may or may not retain the function of the basic diatonic chord from which it was derived, depending on the resulting chord quality.

When accidentals are repeated, and the alteration lasts throughout the phrase, this is indicative of a modulation.

When the altered chord retains root relationships with surrounding chords, and the chords progress normally within classifications, a modulation has not occurred.

BORROWED CHORDS

Some chromatic alterations result in chords that normally appear in the parallel key (minor or major). These chords are examples of borrowed chords.

For example, a “flat six” submediant (♭VI) in a major key is borrowed from the parallel minor.

Borrowed chords retain the same harmonic functions as the chords they replace. The phrase, above, ends with a deceptive cadence, and the final chord is a borrowed submediant (V – ♭VI).

Use of borrowed chords is also known as modal interchange, and chords can be borrowed from any modes, not only the parallel major and minor.
SECONDARY DOMINANT

A chord can be strengthened when it is preceded by a chord with a dominant relation (major triad or major-minor seventh, with the root a fifth above).

A chromatic alteration resulting in a dominant seventh quality (major-minor) is known as a **secondary dominant**.

The secondary dominant is structured to resolve to a chord that is not tonic. The chord of resolution is temporarily “tonicized”.

For example, in a major key, when ii\(^7\) is altered to form a major-minor seventh, the resulting chord functions as a dominant of the V\(^7\) chord, or V\(^7\)/V (five seven of five).

\[ \text{\includegraphics[width=0.5\textwidth]{secondary_dominant.png}} \]

SECONDARY LEADING TONE

A chromatic alteration resulting in a diminished triad or seventh chord can function as a **secondary leading tone**. In a major key, modal interchange is often employed to form a fully diminished seventh chord (diminished-diminished seventh).

\[ \text{\includegraphics[width=0.5\textwidth]{secondary_leading_tone.png}} \]
CHAPTER TWENTY-THREE

Altered Chords in Minor

The natural and raised six and seven scale degrees of the minor key are part of the diatonic minor system. In Bach's music, the only chromatic alterations found in minor which produce altered chords are the lowered-two and raised-four scale degrees. The raised-four is used in combination with the raised-six (ascending melodic minor).

Altered Supertonic - V/V and V⁷/V (secondary dominant)

Jesu, meine Freude

1) Usually appears in first inversion, with the altered tone in the bass.
2) The altered tone is never doubled.
3) The altered tone can be introduced in three ways: chromatic inflection; step-wise, usually from above; and by leap.
4) The altered tone ascends a half-step to the dominant.
**Altered Subdominant - vii°⁷/V** (secondary leading tone seventh)

1) Usually appears in root position, with the altered tone in the bass.
2) The altered tone is never doubled.
3) The altered tone can be introduced in three ways: chromatic inflection, step-wise, usually from above; and by leap of a diminished fifth, most often in the bass.
4) The altered tone ascends a half-step to the dominant. It rarely descends chromatically to the subdominant.
5) This chord may follow i, ii°, iv, and occasionally VI.
Altered Subdominant - vii°/V (secondary leading tone triad)

Was mein Gott will, das g’scheh'

1) Usually appears in second inversion and is derived from the tonic.
2) Usually appears on the second half of a beat.
3) The bass voice leaps to the dominant.
4) Often included in a half cadence, preceding the dominant.

Neapolitan-sixth Chord

The chord built on the lowered-second, found in first inversion, is commonly called the Neapolitan-sixth chord (N6). The Neapolitan chord is usually found in first inversion with the bass note doubled.

Ach Gott, von Himmel sieh’ darein

The Neapolitan-sixth chord (N) can be resolved to any of the following chords:

<table>
<thead>
<tr>
<th>Frequent</th>
<th>Less Frequent</th>
</tr>
</thead>
<tbody>
<tr>
<td>vii°7 second inversion</td>
<td>V second inversion</td>
</tr>
<tr>
<td>iv</td>
<td>i first inversion</td>
</tr>
</tbody>
</table>
| vii°/V       | }
CHAPTER TWENTY-FOUR

Altered Chords in Major

The most-frequent altered chords in major are $V^7/V$ and $V^7/IV$.

$V^7/V$

1) Usually appears in first inversion, with the altered tone in the bass.
2) The altered tone is never doubled.
3) The altered tone can be introduced in three ways: chromatic inflection, step-wise, usually from above; and by leap of a diminished fifth.
4) The altered tone ascends a half-step to the dominant.

$V^7/IV$

1) Usually appears in root position, and sometime in first inversion.
2) The lowered seventh is usually approached from above by a whole step.
3) The lowered seventh descends a half-step to the submediant.
Other frequently-used altered chords.

\[
\begin{align*}
\text{V} / \text{VI} & \quad \text{V}^7 / \text{VI} \\
\text{V} & \quad \text{V}^7 \\
\text{vii}^\circ / \text{ii} & \quad \text{vii}^\circ / \text{ii} \\
\text{vii}^\circ / \text{V} & \quad \text{vii}^\circ / \text{V}
\end{align*}
\]
CHAPTER TWENTY-FIVE

Augmented-Sixth Chords

Thus far in this study of altered chords, the structure has been composed of major and minor thirds. Under certain circumstances raising or lowering scale steps produces chords containing a diminished third or its inversion, an augmented sixth.

The chords of the augmented sixth are found in major and minor keys, but are more frequent in minor.

There are three commonly-used chord structures containing the augmented sixth:

- **Italian Sixth**
- **French Sixth**
- **German Sixth**

The augmented sixth interval resolves outward to an octave, which is usually the dominant of the key.

- **Italian Sixth**
- **French Sixth**

The German Sixth is often followed by a second-inversion tonic chord, before resolving to the dominant. This is necessary for avoiding parallel fifths, because the German Sixth chord contains a perfect fifth.
CHAPTER TWENTY-SIX

Modulation to Foreign Keys

Although modulation has been used in some of the examples in previous chapters of this book, it has been confined to the system of closely related keys.

Closely Related Keys

1) tonic of the new key is a diatonic triad in the original key
2) only one accidental difference in key signatures

Foreign Keys

1) tonic of the new key is not a diatonic triad of the original key
2) two or more accidentals difference in key signatures

Foreign Modulation

Harmonic movement to a foreign key is known as a foreign modulation.

Ach Gott und Herr, wie gross und schwer

\[
\begin{align*}
\text{B}^\flat &: \quad I \quad \text{vii}^\circ \quad I \quad V \quad V \quad V^7/IV \\
\text{A}^\flat &: \quad V^7/IV \quad V^7 \quad I
\end{align*}
\]

The example above begins in key from B\(^\flat\) major and modulates to A\(^\flat\) major. This is a foreign modulation because the A\(^\flat\) major triad is not a diatonic triad in the key of B\(^\flat\) major. Additionally, B\(^\flat\) major has two flats, while A\(^\flat\) major has four flats.
Modulation by Change of Mode

With the acceptance of equal temperament during the 18th century, composers gradually expanded the use of foreign modulation. Although every interval relationship between tonics might be possible, one outstanding relationship between tonics began to appear: change of mode.

The following diagram shows a system of closely-related keys to C major, and another system of closely-related keys in the parallel minor (c minor).

The two systems of closely-related keys appear foreign to one another, however, in the case of each key, the dominant chord is the same as in the parallel key. The following diagram illustrates this concept: