3.2: Heptatonic Scales- The Major Scale, The Three Forms of the Minor Scale

Skills to Develop

- The Major scale and its attributes.
- The Minor scale and its attributes.
- Relative and Parallel Major/Minor.
- Scale degree nomenclature.
- The evolution of Minor scales: the three forms of the Minor scale

Any initial discussion of scales inevitably centers around these two seven-tone scales employed in the composition of Common Practice music.

The Major Scale

The most common scale pattern used is the Major Scale. It is an arrangement of whole and half steps as follows:

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

Note that half steps occur between scale degrees 3–4 and 7–8. This is shown in pitches and the keyboard in Figure 3.2 "Major Scale, Keyboard and Pitches".
This arrangement of whole steps and half steps is maintained for any major scale on any given starting pitch. Accidentals are used to modify pitches in order to retain this same arrangement of whole and half steps. Compare the samples below to the keyboard diagram. Observe the placement of whole and half steps on the keyboard that maintain the proper ordering.

An alternate view of major scale construction is an examination of its constituent tetrachords (from the Greek: “four tones”). Observe that the arrangement of whole and half steps in the first tetrachord are identical to that of the second tetrachord. Both tetrachords are W-W-H separated by a whole step.

So, two mnemonics are suitable for remembering Major scale construction:

2. Identical tetrachords (W-W-H) separated by a whole step.

The keyboard diagram is another essential tool for familiarization and recognition of major scales. The visual reinforcement of whole step and half step placement will hasten the learning process.

The individual scale steps have specific labels. These terms have come into general use, having their origins in early
18th-century theory French composer and theorist Jean Phillipe Rameau employs versions of these terms in his seminal work *Traité de l'harmonie* (1728). Our current usage of these terms is adapted from this work. Figure 3.4 "Scale-step Labels" shows the major scale and its accompanying scale step labels.

### Scale-Step Labels

![Scale-step Labels](image)

**Figure 3.4 Scale-step Labels**

1. The first degree of any scale is called the **Tonic** pitch. This is the pitch that asserts itself over all the others in the collection, the pitch that our ear naturally seeks as being the strongest. These terms will be affiliated with chords in keys as well.
2. The next strongest pitch is the fifth scale degree, the **Dominant**. It is considered to be the “polar opposite” of **Tonic**: whereas **Tonic** represents stability and sense of conclusion, **Dominant** represents instability and a sense of tension.
3. The third scale degree lies halfway between these and so is labeled the **Mediant**.
4. **Dominant** is five scale-steps up from **Tonic**. Five steps below **Tonic** is the fourth scale degree, labeled **Subdominant**.
5. Since the **Mediant** lies three steps up from **Tonic**, three steps down is labeled **Submediant** (the sixth scale degree).
6. The second scale degree is labeled **Supertonic**.
7. Lastly, the most powerful melodic motion we respond to is the ascending half step, from scale degree seven to the octave. Our ear is compelled to resolve this **Leading Tone**.

![Scale-steps in Order of Importance](image)

**Figure 3.5 Scale-steps in Order of Importance**

### The Minor Scale

The other heptatonic scale used in Common Practice music is called the Minor Scale. It is arranged as follows:

```
1 2 3 4 5 6 7 8
W H W W H W W
```

![Minor Scale](image)
Audio 4

The Minor Scale

(click to see video)

For this example, the pitches are identical to the Major scale example above, re-arranged from scale degree six. Figure 3.7 “Minor Scales on a; on c; Major Scale on C” shows the same Minor scale pattern, but constructed from the same starting pitch. Both are then compared to the Major scale.

Figure 3.7 Minor Scales on a; on c; Major Scale on C

As with major scales, minor scales use accidentals to retain the same "shape" when starting on differing pitches.

Figure 3.8 Other Examples of Minor Scales

Audio 5

Other Minor Scales

(click to see video)

The previous examples demonstrate particular relationships between Major and Minor scales:

1. Major and Minor scales that have the same pitch content but different starting pitches are said to be relative to one another, for example C major and a minor.

2. Major and Minor scales that have differing pitch content but the same starting pitch are said to be parallel to one another, for example C major and c minor.

In order to discover the Relative Major/Minor relationship, follow this procedure:

1. To find the Relative Minor scale of any Major scale:
   1. Go to the sixth degree (Submediant) of the Major scale.
   2. Re-order the scale content from that pitch.
   3. Think “Major to Minor: up to 6.”

2. To find the Relative Major scale from any Minor scale:
   1. Go to the third degree (Mediant) of the Minor scale.
   2. Re-order the scale content from that pitch.
3. Think **Minor to Major: up to 3.**

We do not recommend the "three up or three down" method that is sometimes employed. This leads to confusion on the part of the student. Inevitably, the student will go down the wrong specific pitch distance, or will confuse which relationship is which direction.

In order to discover the Parallel Major/Minor relationship, simply construct major or minor from the same starting pitch.

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### Relative and Parallel Major/Minor

*Relative* and *Parallel Major/Minor* will extend to our discussion of keys in Chapter 4 "Key Sense, Key Signatures, and The Cycle of Fifths". When labeling scales it is customary to use upper case letter names for major and lower case letter names for minor. When hand-drawn, a dash is placed above the letter c only. This should not be used for other lower case letters. These relations commute from each form to the other: one speaks of Major and its *relative* Minor, or Minor and its *relative* Major. The same is true for the *parallel* relationship.

![Figure 3.9 Relative and Parallel Scales: Major to Minor and Minor to Major](image)

**Audio 6**

Relative and Parallel Scales

(click to see video)

Just as the Major scale has labels for its constituent scale-steps, these labels are also used for Minor scales. There is one notable exception: since the distance between scale degree seven and the octave is a whole step, it does not possess the same sensation of required resolution as its major counterpart (the *Leading Tone*). Therefore it is labeled *Subtonic*.

### Scale-Step Labels for Minor

![Figure 3.10 Minor Scale-Step Labels](image)

Earlier, the *Leading Tone* was described as the most powerful melodic step that we respond to in terms of demanding resolution. This half step between scale degrees seven and eight is not present in the naturally occurring Minor scale. Beginning with its antecedents in early music, the minor sonority was routinely altered to address this perceived flaw.
Harmonic Minor

Composers chromatically raised the seventh scale degree in minor as a matter of routine in order to provide a more powerful melodic resolution. Additionally, this alteration affected the accompanying harmonies, engendering a more powerful harmonic resolution as well.

This led to an additional, altered form of the minor scale. The original diatonic form of the minor scale is called Natural (or Pure) Minor. Because of its implied harmonic consequence, the altered version (raised 7, or +7) is called the Harmonic Form of the Minor scale, or simply Harmonic Minor.

![Figure 3.11 Natural and Harmonic Minor](image)

Audio 7

Natural and Harmonic Minor Scales

(click to see video)

The component scale steps for Harmonic minor are:

```
1 2 3 4 5 6 7 8
W H W W H (1 + 1/2) H
```

Observe several properties:

1. The seventh scale degree is raised in this form of minor. Depending upon the starting pitch and the scale, this may use an accidental in the form of either a sharp sign or a natural sign.
2. There are three instances of half steps in this form: 2–3, 5–6, and now +7–8.
3. Because of the alteration the distance between 6 and 7 has been expanded to form a “step and a half.” This was considered to be a melodic “flaw.” While inherent and necessary to the form, it was considered to be “un-singable” and in need of correction in performance practice.

![Figure 3.12 Other Examples of Harmonic Minor Scales](image)
Melodic Minor

This perceived *melodic* flaw in Harmonic minor, the “step and a half” between scale degrees 6 and 7, was subject to routine alteration as well. In order to eliminate this awkward gap, composers routinely raised the sixth scale degree as well as the seventh. Since this was done to correct the perceived melodic flaw, a third form of the minor scale came to be recognized, called the Melodic Form of the Minor scale, or simply Melodic Minor.

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Audio 9

Natural, Harmonic, and Melodic Minor Scales

(click to see video)

The component scale steps for Melodic minor are:

```
1   2   3   4   5   6   7   8
W  H  W  W  W  W  W  H
```

Observe several properties:

1. Both the sixth and seventh scale degrees have been raised. Depending upon the starting pitch and the scale, this uses accidentals in the form of sharp signs, natural signs, or a combination of the two.
2. The second tetrachord of this scale is identical to the second tetrachord of the Major scale.
3. It is customary to revert to the Natural minor form when descending. This must be shown using the appropriate accidentals. In some melodic minor scales double sharp signs must be used to alter sixth and seventh scale degrees. When reverting back to Natural minor, a Natural sign followed by a sharp sign is used, not merely a sharp alone.

**Figure 3.14** Other Examples of Melodic Minor Scales

Audio 10

Other Melodic Minor Scales

(click to see video)

Before continuing several very important points must be made:

1. Minor is considered to be only one entity. It is not appropriate to speak of “three separate minor scales,” as if they are inherently different species.
2. Although one entity, minor has three distinct forms, Natural, Harmonic, and Melodic. These forms evolved to accommodate musical and compositional needs over the evolutionary history of Western music.
3. The three forms have distinct properties:
   1. Natural (or Pure) Minor has no Leading Tone. This was considered to be an inherent weakness or flaw.
   2. Harmonic Minor seeks to correct this weakness by raising the seventh scale degree, artificially creating a Leading Tone. This in turn generates a melodic flaw in the gap between scale degrees 6 and 7.
   3. This melodic flaw was corrected by raising the sixth scale degree (in the presence of the raised seventh scale degree). Since this yields a second tetrachord equivalent to its Major scale counterpart, this process is undone in its descending form by reverting to Natural Minor.
4. Lastly, Harmonic minor is the expected, normal form of Minor used by composers in practical composition.

Composers seemed to require the motion from the Leading Tone to the Tonic. Just as much, they seemed to favor the naturally occurring sixth scale degree, the Submediant, “falling” to the Dominant. In the study of music theory, expect to see, expect to hear, and expect to use the Harmonic form of Minor. The unique properties of the other forms are used sparingly and are subject to conditions for their use.

In summary, major and minor scales form the fundamental source sets, and therefore the basis of the compositional language in Common Practice music. All the great music of the recognized master composers employed these same constructs as the basic elements of their compositional language.
Conclusion

The student should understand:

- Taxonomy and nomenclature for scale steps and scale components.
- The Major Scale and its attributes.
- The Minor Scale, its three forms and their attributes.
- Relative Major/Minor, Parallel Major/Minor

Exercise 1:

1. In your **Scale Thesaurus**:
   2. Use half notes, ascending only. Use appropriate stem direction.
   3. Label each scale step by scale degree number and mark the half steps.

2. In your **Scale Thesaurus**:
   1. Construct Natural Minor scales on a, e, d, b, g.
   2. Use half notes, ascending only. Use appropriate stem direction.
   3. Label each scale step by scale degree number and mark the half steps.

3. In your **Scale Thesaurus**:
   1. Construct the Harmonic and Melodic Minor forms for each Natural Minor scale in Exercise 2.
   2. Harmonic Minor, ascending only; Melodic Minor, ascending and descending.
   3. Make sure to use the appropriate accidentals and mark the half steps.