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Anyone who has taught minor scales realizes it is more complicated than teaching major scales, and students invariably have more difficulty with them. I offer an approach using several versions of “Old King Cole” and “Greensleeves” to demonstrate the inherent richness of minor keys, and the concomitant generation of the resulting three minor scale forms (natural minor, harmonic minor, and melodic minor).

This approach helps to clear up a common misconception among many students—that there are three minor keys for every pitch (e.g., a key of G natural minor, a key of G harmonic minor, and a key of G melodic minor), and demonstrates instead that a minor key includes nine discrete pitches (or seven diatonic pitches, with two chromatic alternatives). This lays the groundwork for establishing that scales are a byproduct of musical practice, and not the reverse. This further leads to an understanding of how and when those diatonic or chromatic alternative notes are used in context, and why minor keys contain both a minor and a major v/V chord, something that often perplexes students.

I have used this approach in a music-major course and in a non-music-major course, comprising remedial music majors with weak backgrounds, potential music majors, music minors, and students taking the course as a general-education elective. It can thus be modified by instructors to accommodate students with either weaker or stronger backgrounds.

I approach minor scales in the same way I approach modal and major scales; for the sake of brevity, I enumerate the relevant principles below:

1. All diatonic modes/scales contain one (and only one) of each of the seven individual pitches/letter names, presented in a stepwise arrangement.
2. All diatonic modes/scales are pitch inventories of the notes belonging to a given mode/key.
3. All diatonic modes/scales contain two diatonic half steps and five whole steps.
4. Every diatonic mode/scale has a unique arrangement of whole and half steps, giving each its unique character and sound.

5. Only two modes possess a leading tone: Ionian and Lydian.[1] Aeolian has a subtonic note, a whole step below tonic.
6. All modes/scales can be transposed, as long as the half- and whole-step arrangement remains constant.

I introduce minor scales with the Aeolian scale on A, reviewing where the half steps are, and explaining that Aeolian comes to be called the natural form of the minor scale, from which we draw our minor key signatures. I also play one or two Aeolian pieces, and have students construct Aeolian/Natural minor scales on all pitches.[2]

To introduce harmonic minor scales, I project and play an Ionian/major scale, followed by its I-IV-V-I progression, focusing on how the leading tone (which I place in the soprano) pushes up to tonic. I then project and play an Aeolian scale, followed by its i-iv-v-i progression, with its subtonic note in the soprano, so students can hear the difference. The Aeolian progression, while lovely, lacks the urgency of the leading tone pushing to a final tonic.[3] To contextualize this, I project and play "Old King Cole" in its Aeolian form, with its subtonic G♮ (shown in Example 1).

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[1] This concept is crucial for major and minor keys.

[2] Several simple Aeolian examples are "All the Pretty Little Horses," "Heigh Ho Anybody Home," "Black is the Color of My True Love's Hair," "March of the Kings" (used by Bizet in his *L'Arlésienne* Suite No. 2), "Have You Seen the Ghost of John," "Who Killed Cock Robyn," and "Oh Come, Oh Come Emmanuel." Another resource is Robert Ottman and Nancy Rogers, *Music for Sight Singing*, 8th ed (Boston: Prentice Hall, 2011), 358-75.

[3] As early as the 13th century, musicians were writing about this difference, and determining that one needed to provide an accidental in order to create a leading tone for a strong cadence (known as the clausula vera) on the *finalis*, or tonic. On the leading tone, see Margaret Bent and Alexander Silbiger, "Musica ficta," Part 4, "Rules for inflection and adjustment" (*Grove Music Online*, 2001), accessed 18 Apr. 2019, http://www.oxfordmusiconline.com.umasslowell.idm.oclc.org/grovemusic/view/10.1093/gmo/9781561592630.001.0001/omo-9781561592630-e-0000019406. On clausula vera, see David Neumeyer, "On the clausula vera (3-1 or 6-8)," *Ascending Cadence Gestures in Tonal Music*, https://ascendingcadencegestures.blogspot.com/2016/04/on-clausula-vera-3-1-or-6-8.html

I next project and play the song substituting G♯ for G♮ in mm. 7 and 15; students readily agree the G♯ leading tone provides a stronger push to tonic (shown in Example 2). For mm. 9-11, I demonstrate that either G♮ or G♯ may be used; those measures are not phrase endings, so the use of G♯ is optional. Thus, both G♮ and G♯ coexist in this melody, and even though G♯ is not in the key signature, it is an essential pitch.

Having established previously that a diatonic scale must contain just one of every letter name, we must create a new scale form, called the *harmonic* form, to accommodate G♯. To explain this nomenclature, I harmonize mm. 7 and 15 with an E minor v chord (shown in Example 3), then an E major V chord (shown in Example 4), so students can hear the difference. Thus, it is for harmonic reasons this scale form acquired its name. [4]

To explain the melodic form of the scale, I project and play “Greensleeves” in its Aeolian version (shown in Example 5).

I then substitute a G♯ leading tone in mm. 7 and 15, similar to what I did in Old King Cole (omitting the F♮s for now), and students agree this creates a more satisfactory movement to the final tonic (shown in Example 6).

However, reinserting the F♮s creates an augmented 2nd with the G♯s in mm. 7 and 15 (shown in Example 7).

When I play this version students perceive a large, unpleasant distance between the G♯ and F♮. Raising F♮ to F♯ fixes that problem, providing a smooth and more pleasing melodic line (as shown in Example 8).

And, as before, in order to accommodate this F♯ when it appears next to the G♯, we must create yet another scale form, called the *melodic* form, since it is for melodic considerations that

[4] I introduce triads immediately following intervals, so at this point in the course we have identified the four triads types by root and quality (EM and em, for example), and I have explained briefly how triads harmonize a melody. However, we would not yet have talked about diatonic chords in keys, or harmonic function.

we include an F♯. I also project and play the Dorian version of "Greensleeves," with F♯ appearing next to both G♯ and G♮ (shown in Example 9). [5]

Thus, while a major key contains seven pitches, a minor key contains nine integral pitches, or seven diatonic pitches, with two chromatic alternatives not in the key signature. Those two chromatic alternatives are found in the parallel major key, so we may think of them as being borrowed from that scale; hence, the ascending tetrachords of each scale are identical.

At this point it is instructive to return to "Old King Cole" to re-examine the use of F♮ in light of what we observed with "Greensleeves." While both F♮ and G♯ appear in the melody, they never appear next to each other; accordingly, F♮ never needs to be raised to F♯.

It is important to point out to students that the traditional way of notating a melodic minor scale in both the ascending and descending forms provides the complete inventory of nine notes that belong to any minor key.[6] "Greensleeves" contains all nine notes (with its inclusion of F♮, F♯, G♮, G♯), and provides a model for how each of these notes is typically used in context, with raised notes generally used when ascending towards tonic, and lowered (natural) notes generally used when descending from tonic. Thus the construction of the ascending and descending versions of the melodic minor scale. It is also important to point out to students that these are not

[5] This F♯ is diatonic in the Dorian mode, which Rameau, in his *Treatise on Harmony*, initially considered to be the model for minor. He later chooses Aeolian. See, for example, Joel Lester's *Compositional Theory in the Eighteenth Century* (Cambridge, MA: Harvard University Press, 1992), 59.

[6] With more advanced students, I prefer to notate minor scales with all nine pitches included in a single ascending composite form. Several versions may be seen in Paula Telesco, "Rethinking the Teaching of Minor Scales and Keys," *Journal of Music Theory Pedagogy,* vol. 15 (2001): 69–90; Robert Gauldin's *Harmonic Practice in Tonal Music* (New York: W. W. Norton, 1997), 31, Example 11; or Bruce Benward's more concise notation, that has appeared in his text since its earliest editions. See for example, Bruce Benward and Gary White, *Music in Theory and Practice*, vol. 1, 6th ed. (New York: McGraw Hill, 1997), 39, Figure 2.18. I have included these examples in the Appendix.

"rules," merely statistical norms—the F♯ can be used when descending as well (as shown in Example 9, mm. 9 and 13).

Further, when harmonized, "Greensleeves" demonstrates how both an E minor and E major chord (v and V) can co-exist in a single minor key (shown in Example 10), providing a solid foundation for the later introduction of diatonic triads in minor keys and helping to obviate the typically thorny issue of explaining the inclusion of both those chords in a minor key: this is a perfect example to return to when that topic arises.[7]

Finally, a fun and instructive example is Gounod's "Funeral March for a Marionette," used as the theme song for the TV show, "Alfred Hitchcock Presents" (shown in Example 11). This short excerpt provides an example of each type of usage discussed above. And the beauty of this passage is that what may initially strike students as contradictory to what they have learned can be fairly quickly understood as a slightly more sophisticated instance of the same basic principles. The leading tone is used when ascending to tonic in mm. 2, 4, 10, 12, and 15, while the lowered 6th and 7th are used descending in mm. 6 and 13. However, in mm. 1, 3, 9, and 11, the raised 7th and 6th descend, seemingly contravening our basic principles. But this is precisely the same situation as in mm. 7 and 15 of "Greensleeves" — the overall motion is from the leading tone to tonic, with $\hat{6}$ simply decorating $\hat{7}$ as a neighboring tone. In m. 8, the leading tone is used next to the lowered 6th, creating an augmented 2nd. It is of great value to ask students why Gounod may have done this (and why Alfred Hitchcock used this for his TV show). While we may not have a definitive answer, we can speculate that this augmented second was used for a special effect— to project the idea of a Funeral March, or a scary TV show.[8]

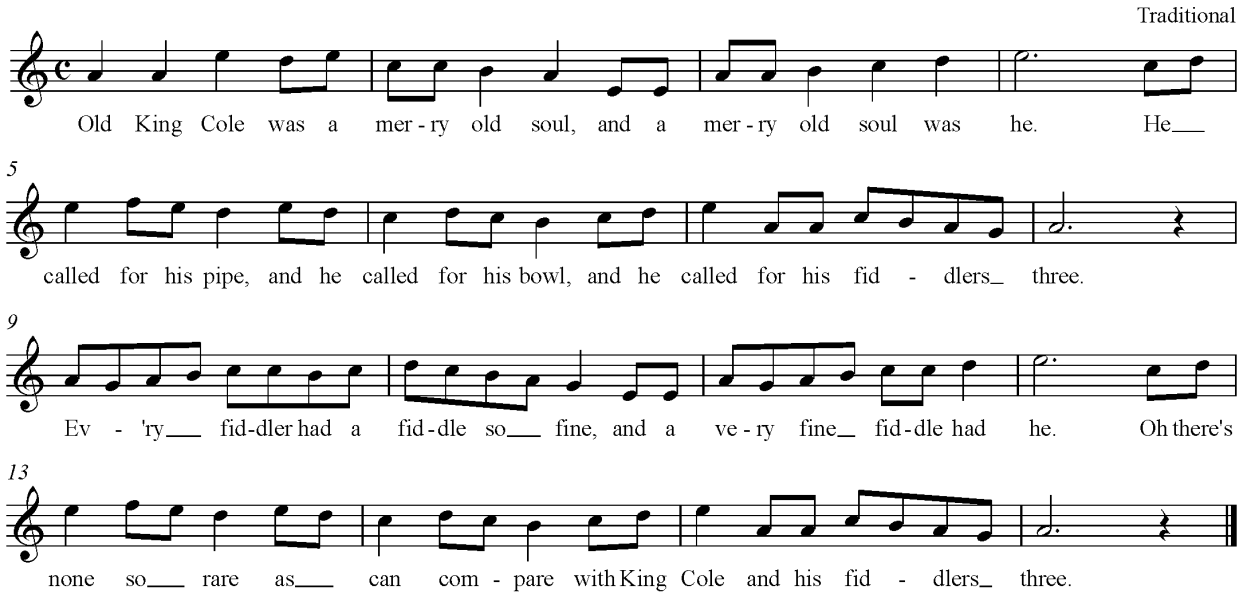
In conclusion: These simple pieces demonstrate how minor keys all contain nine pitches, which composers use regularly within a single composition, without any sort of adherence to one scale form or another. It is important to bear in mind that these scale forms have always been

[7] Measures 4 and 12 can also contain a G♯ in the melody and thus be harmonized with a major V chord. But the object here is to demonstrate how both chords can be used. Moreover, many versions of "Greensleeves" use the G♮ rather than the G♯ in those measures.

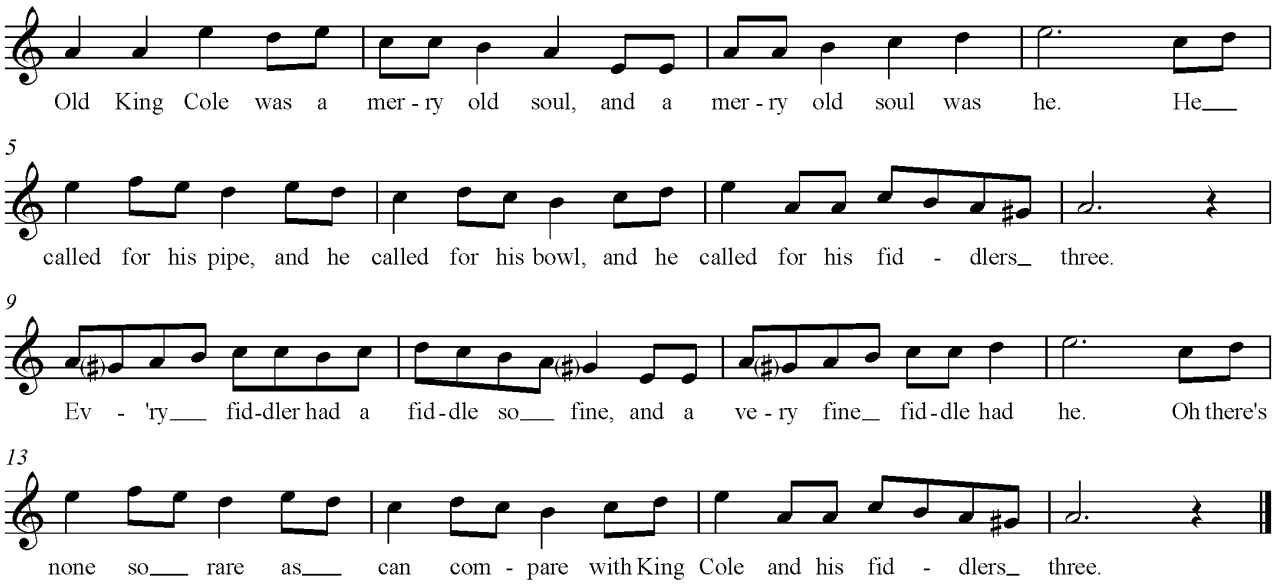
[8] There is just one true chromatic note in this excerpt: the E♭ in m. 14, part of the arpeggiation of a Neapolitan chord. But that is another topic for another day.

important for performers to practice, as they are likely to encounter these typical melodic patterns when performing common-practice music. Thus, it remains necessary to isolate, identify, and be fluent with the terminology and composition of these scale forms, while still recognizing that they are the result of musical practice, and not the generator.

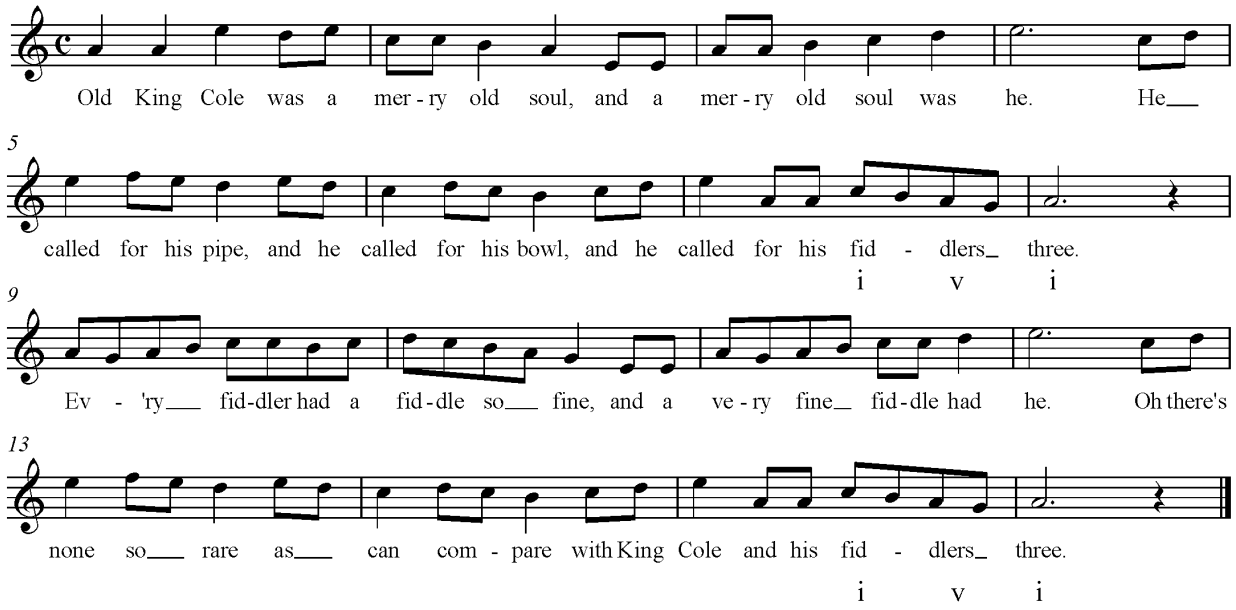
Example 1: “Old King Cole,” Aeolian version



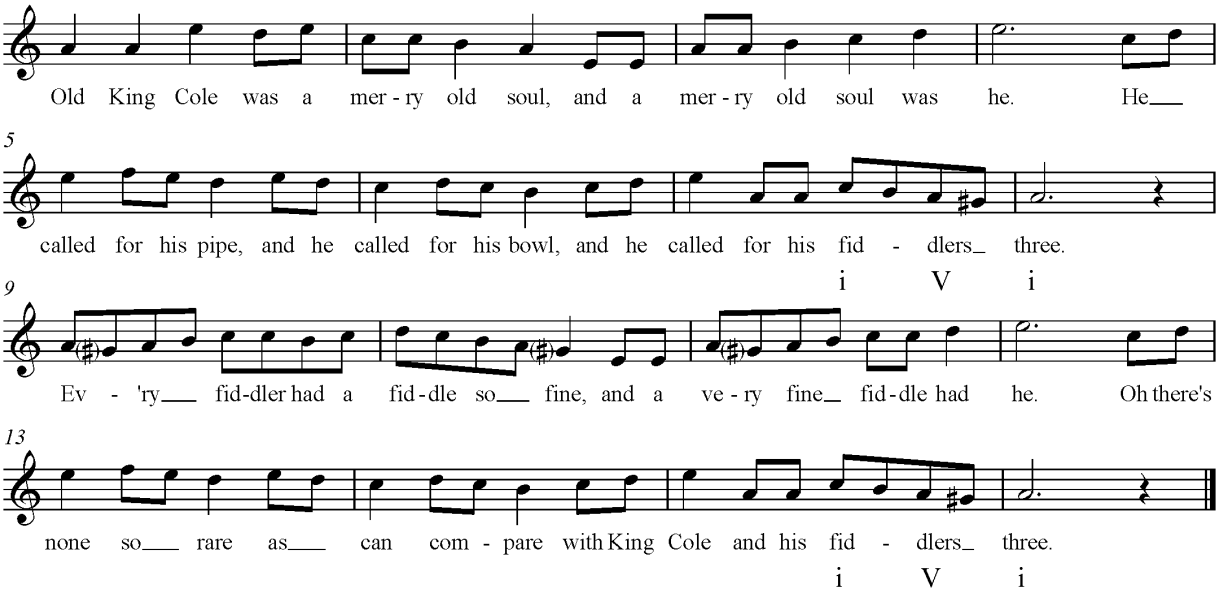
Example 2: “Old King Cole,” with G♯ leading tone



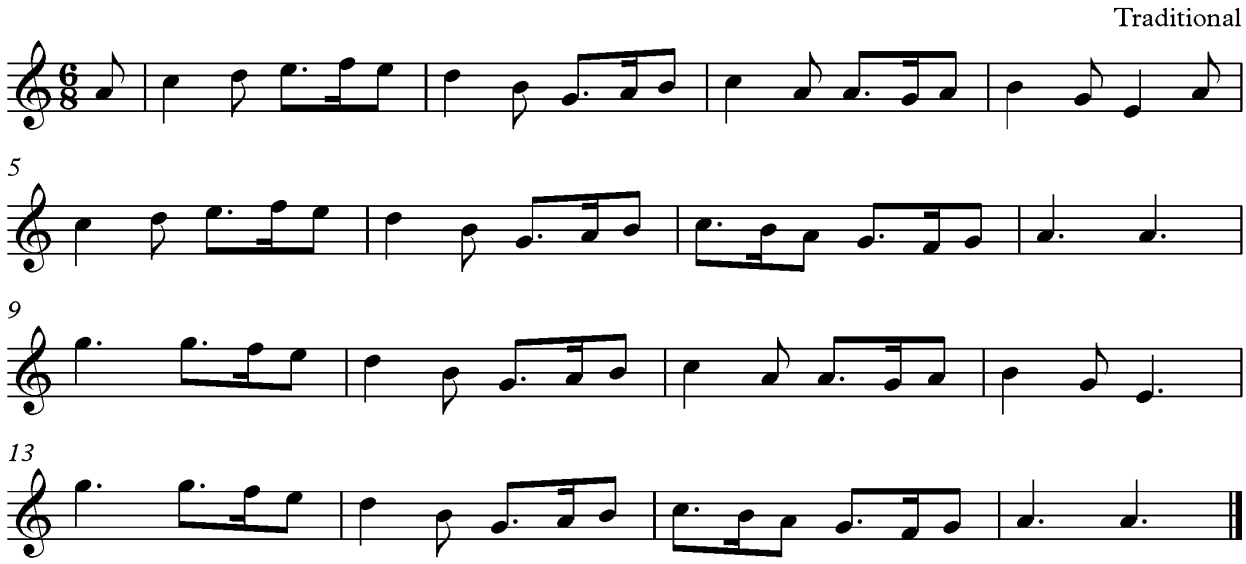
Example 3: “Old King Cole,” harmonized with minor v chord, mm. 7, 15



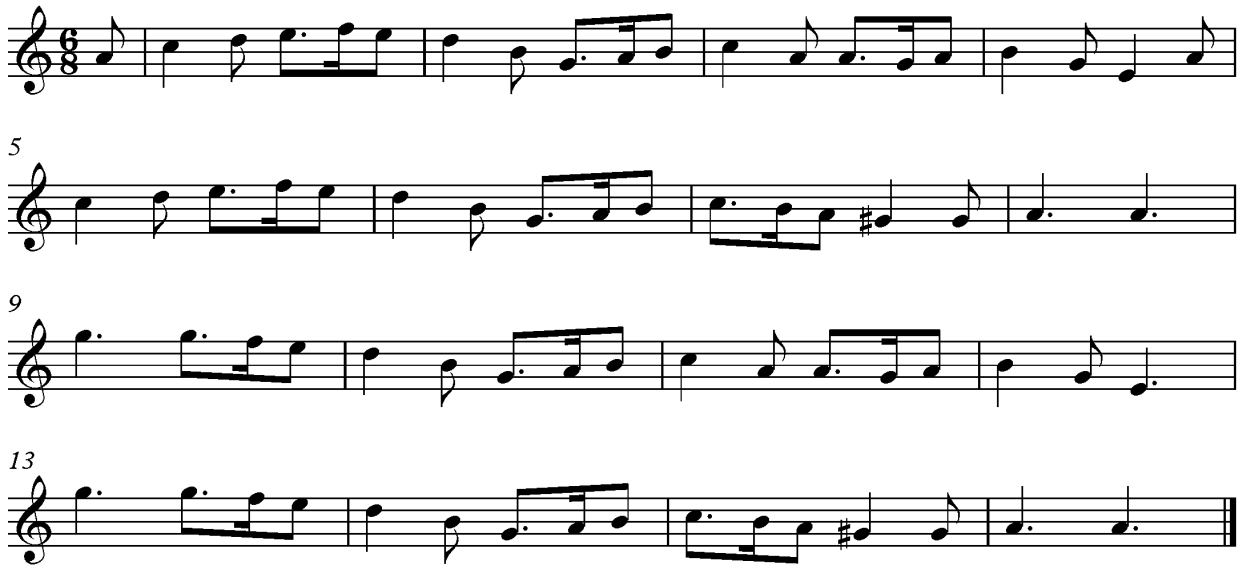
Example 4: “Old King Cole,” harmonized with major V chord, mm. 7, 15



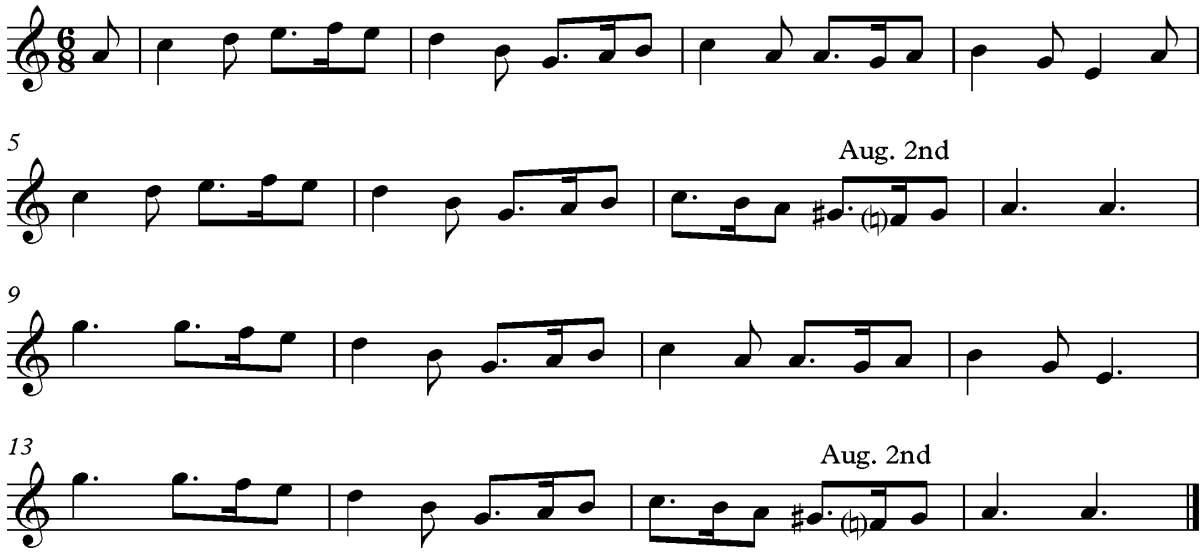
Example 5: “Greensleeves,” Aeolian version



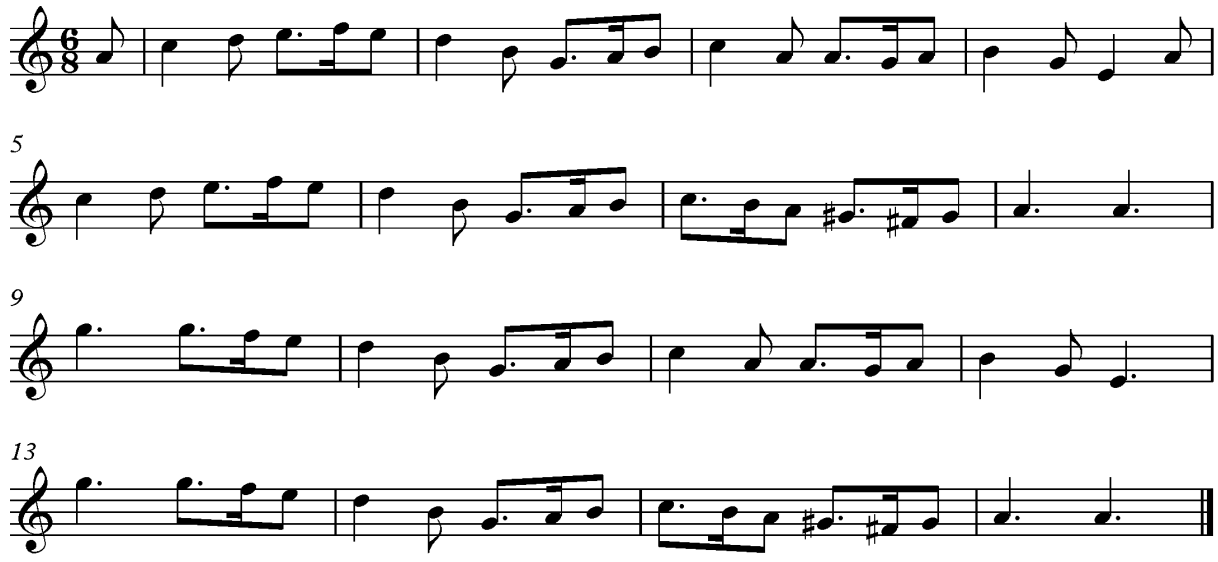
Example 6: “Greensleeves,” with G♯ leading tone at cadences (omitting F♮s in mm. 7 and 15)



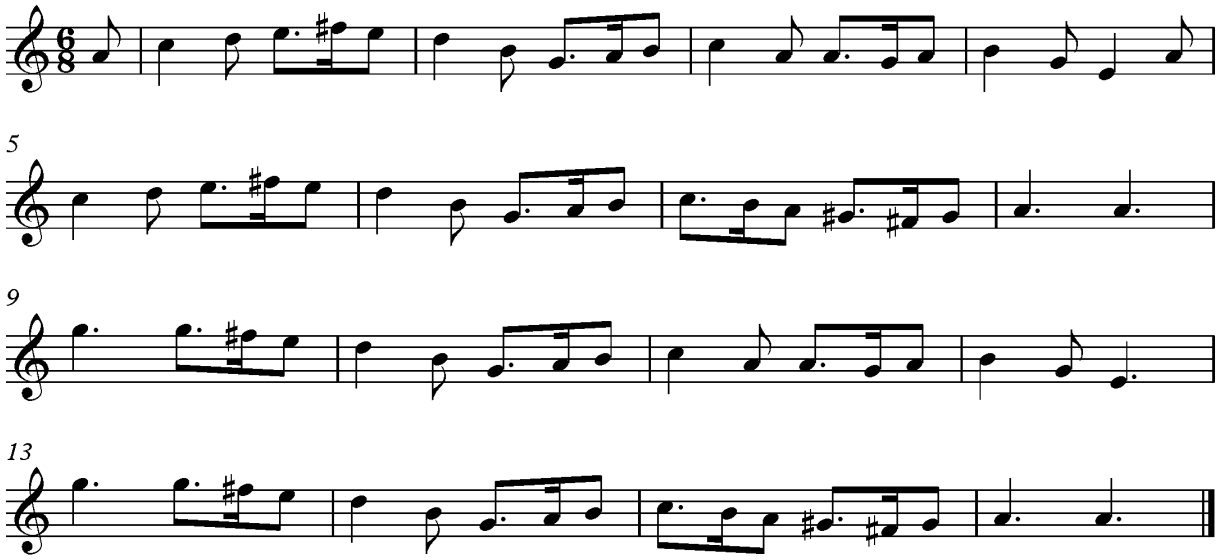
Example 7: “Greensleeves,” with G♯ leading tone and F♮s in mm. 7 and 15



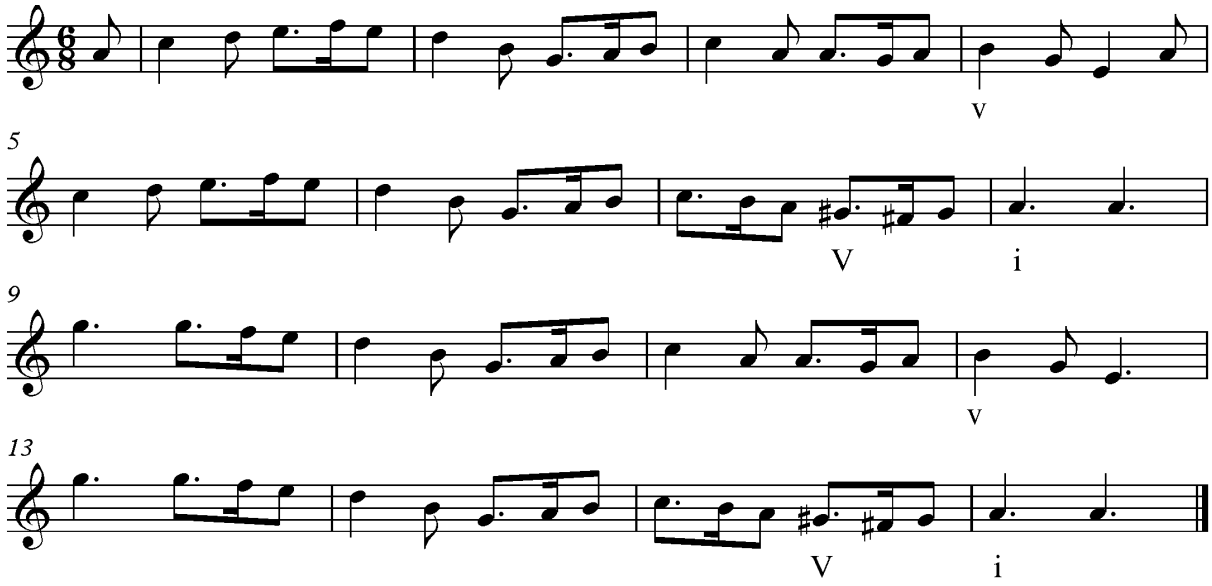
Example 8: “Greensleeves,” with G♯ leading tones and F♯s in mm. 7 and 15



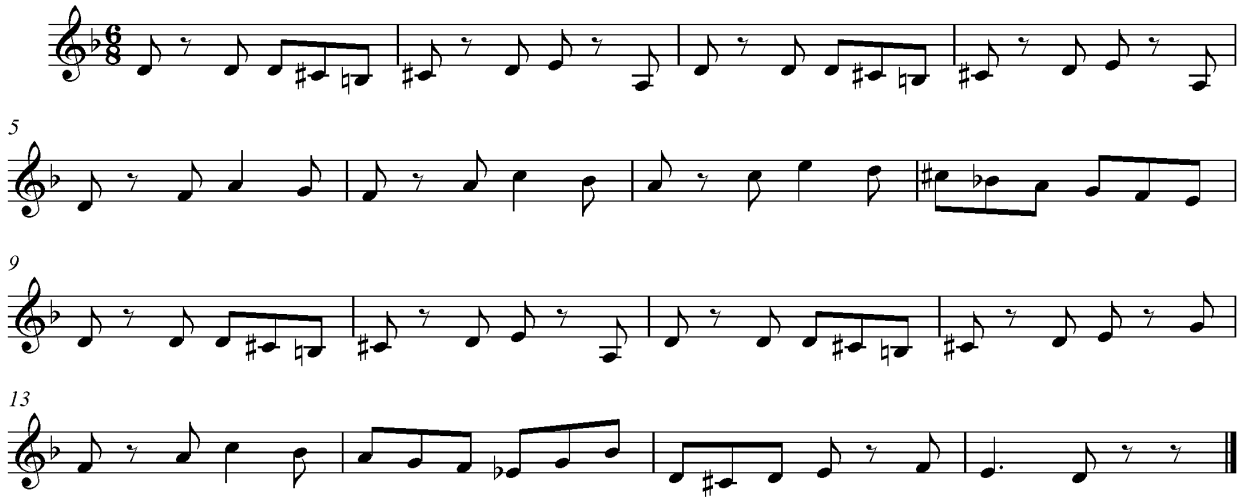
Example 9: “Greensleeves,” Dorian version, with G♯ leading tones and all F♯s



Example 10: Greensleeves, with minor v and major V harmonizations

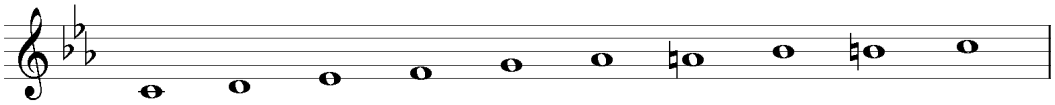


Example 11: Charles Gounod, “Funeral March for a Marionette”

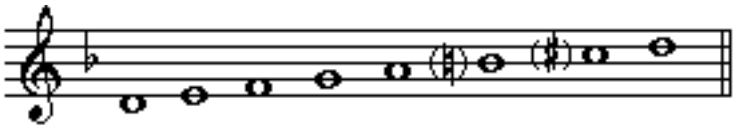


Appendix 1: Composite Minor Scales

1. Composite Scale with Variable 6th and 7th Scale Degrees



2. Benward’s Composite Scale



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