Octatonic-Triadic Cycles and Amy Beach's "Autumn Song"[1]

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Today, I would like to explore some properties of triadic transformations from a new angle. I this, I am following up on the project that has been carried out for the past 25 years by Richard Cohn, beginning with his "Maximally Smooth Cycles" article in 1996, and continuing on through his 2012 book *Audacious Euphony*. That project is one of re-examining and synthesizing the early findings of Neo-Riemannian theory (a title that I note adorns our session, but that Cohn and some other scholars have explicitly disavowed) and recasting the theory's objects not as operations that one might perform on triads, or labels that one might place on certain triadic relationships, but instead as ways of describing certain patterns of behavior within subsets of triadic space. In this more recent guise of Neo-Riemannian theory, the label "hexatonic cycle," to take one prominent example, does a significant amount of conceptual work: it describes a larger set of triadic properties and musical behaviors than would a more granular focus on individual P or L transformations, or compounds thereof. In that spirit, I propose to name another important triadic cycle, and to focus on some of its characteristic behaviors—particularly the interactions between chromatic voice-leading syntax and diatonic tonality, and the structural and expressive effects that follow. To that end, I will look at one central example, flanked by two others which will aid in interpretation.

Amy Beach's "Autumn Song" (1904) presents a seemingly simple narrative: as the world turns colder and the nights grow longer, the singer laments the passing of summer. As images of autumn's beauty accrue, however—fields of goldenrod murmuring, wild grapes growing plump—the singer's outlook brightens considerably. In the final stanza, which rephrases the first in a more positive valence, they reassure themselves that spring will come again. A purely textual précis, however, might leave us wondering: what instigates this very sudden transformation in attitude,

and how does it come about? What happens, in other words, in the middle of the song? The poem itself leaves very little room for such a change in perspective; its transitions between affective states are somewhat abrupt, and consequently the music has a great deal of work to do in portraying this emotional revolution.

It does so through the framework of a conventional tonal trajectory: the singer mourns the end of summer with a descending lament in F minor, while the hopeful ending arrives in the parallel F major. The relative major, A♭, forms an important waystation in between. As an extension of the poem's ABA structure, "Autumn Song's" musical setting reflects a format that Victoria Malawey has identified as being highly characteristic of Beach's song style: a heavily modified repetition that pushes the song beyond what we might categorize as ABA (or ABA') form, so that the final third of the song departs into new musical territory.[2] Beach's musical setting, in other words, reflects the change in outlook far more than it does the poem's mostly repetitive structure. It is this contrast in the level of detail between the expressively transformed musical trajectory, and the clear—although relatively underdetermined—plan of the text, that I am interested in today.

Figure 1 offers a very simple sketch of "Autumn Song's" overall harmonic outline, annotated with transformational labels. The first strophe is entirely in F minor, as the singer describes the shortening days and the wilting of summer flowers. The descending stepwise melody suggests a lament. Let's listen to the first verse, and we'll hear the very quick transition into the relative major for the second verse, before stopping to discuss it. [PLAY EXAMPLE]

The second strophe, set as a contrasting B section, moves to the relative major, A♭. This is a very standard modulation from i to III. From there, however, the song takes a circuitous path before returning to the tonic. The arrival of A♭ major in m. 13 leads to two more tonicizations, as "Autumn

Song" moves fluidly to A♭ minor in m. 19, and C♭ major in m. 23. That C♭ major—which stands a tritone away from the song's tonic—will prove to be the harmonic turning point of the song, for it signals Beach's return to a more traditional model of harmony. Let's listen quickly, though we will examine the passage in greater detail in the second half of this paper. Keep an eye—or an ear—on the C♭: in m. 24, it is enharmonically reinterpreted as B♮, becoming the bass note in $V^{6/5}$ of V. The cycle of ascending minor thirds comes swiftly to a halt, as G resolves to C, and then quickly back to the song's F minor tonic. [PLAY EXAMPLE 2]

To fully understand the significance of this passage, we first need to take stock of where we are from a harmonic perspective. As shown in Figure 2, "Autumn Song's" modulatory scheme traces the first half of a circuit of triads that I will call the *octatonic-triadic cycle*.[3] Drawing their pitch classes from one of the three forms of the octatonic scale, these cycles use the Relative and Parallel transformations (R and P for short) to move between harmonies via parsimonious voice-leading. Octatonic-triadic cycles operate in much the same way, *mutatis mutandis*, as the more famous "Hexatonic cycles" identified by Richard Cohn, which are built on the transformations P and L. I would like to refer to these cycles by name (rather than simply as "RP cycles") in order to make the argument that they follow certain patterns of behavior, and that they form a coherent space for chromatic voice leading in much the same way as the hexatonic cycles that Cohn has so thoroughly explored.[4]

Second, I refer to octatonic-triadic cycles with this hyphenated label in order to distinguish them from the "octatonic cycles" of seventh chords, which move through the spaces represented in Douthett & Steinbach's "Cube Dance" and Cohn's "Boretz spider." Both the hexatonic and octatonic-triadic cycles outline equal divisions of the octave: hexatonic cycles feature root motion

by four half-steps, while octatonic cycles feature root motion by three half-steps, resulting in an eight-chord cycle rather than the more famous six-chord cycle. Just like their hexatonic counterparts, octatonic-triadic cycles can take advantage of their parsimonious voice-leading to move smoothly across great harmonic distances, pulling the listener unwittingly into new tonal regions. *Unlike* hexatonic cycles, however, they are rarely carried through to their completion. Instead, they often come to a halt around their halfway point, in order to give way to other forms of musical organization. That is the property on which I will primarily focus today.

"Autumn Song" is a very clear, and as we will see, hermeneutically suggestive example of this behavior. In the case of the half-cycle that structures "Autumn Song," parsimonious transformations are used to move to a distant key, intensifying the musical narrative—the singer's mourning for summer—up to the point of sudden reversal near the end of the song. The octatonic-triadic cycle stops just short of the cycle's precise halfway point—a moment that is again best explained by reference to the analogous structure within the hexatonic cycle.

As we look at Figure 3, you will probably recall that Hexatonic cycles are each drawn from overlapping collections of six pitch classes, and their constituent triads often have pcs in common. For each triad in a hexatonic cycle, there is only one other triad with which it has no tones in common: the *hexatonic pole*, represented by the transformation H, and freighted both historically and theoretically with strong associations of uncanniness.[5] Each triad in an octatonic-triadic cycle, however, has such a non-overlapping relationship with *three* other triads in its cycle: one directly opposed *octatonic pole*, and two *near octatonic poles*, which surround the true pole on either side. These near-poles exist because each triad needs only to select three pitches from a pool of eight, leaving more chords in the cycle with which they share no common tones. I'll note as well that we ought to call these "octatonic triadic poles"; just as the "octatonic cycle" already refers to groups

of seventh chords, Adrian Childs has identified non-overlapping polar relationships that he calls "octatonic poles."[6]

The structure of the octatonic-triadic cycle gives these polar relationships several interesting properties. First of all, they involve an even number of triadic transformations: it takes four stations to get around to the octatonic pole, rather than three stations to the hexatonic. Since each of the canonical Neo-Riemannian operations exchanges a triad's mode, this means that octatonic-triadic poles are modally matched, unlike their hexatonic counterparts. Drawing on this property, Scott Murphy (2006, 2014) has explored these progressions in science fiction film soundtracks, calling them "major tritone progressions." [PLAY EXAMPLE: C major to F# major]

Another notable detail arises from the asymmetry of the PR-cycle's two constituent operations. Because the R transformation displaces two semitones rather than one, each of these poles lies a different voice-leading "distance," or a different amount of voice-leading "work" away from F minor.[7] C♭ minor, the true octatonic pole, lies six semitones of voice-leading away. I have not yet finished contemplating the mystery of how its root also lies six semitones away from the tonic, but I welcome speculation on that issue. C♭ major, the near pole reached in "Autumn Song" via RPR, lies five semitones away from F minor, while the other near pole, D major, is only four semitones away when reached by PRP, *and* has a different root interval. The existence of two unequal near-poles poses a challenge to the common practice of naming a compound transformation and understanding it as a single action. By analogy to Cohn's H transformation—which can be understood as *either* LPL or PLP—Miguel Ramirez has proposed an O transformation that would send a triad to its octatonic pole. He also proposes an nO transformation, but he does not formalize it in order to distinguish between the two very different near poles.[8] So while it is potentially useful to adopt the O transformation, the nO transformation leaves

undetermined the necessary root motion. If we wished to use it, we would need to specify whether we want the near-pole that lies four semitones of "work" away (that is, PRP), or the one that is five (RPR). Depending upon the mode in which you start, one of those triads will be a tritone away, and the other a minor third. I'll avoid going into such detail today, because we will generally be concerned with minor key works, and the "five semitone" near pole will be the much more significant one.[9]

Beach's "Autumn Song" serves as the perfect case study of the particular role that octatonic-triadic cycles often do play. In the second half of this presentation, I will explore this pivotal moment in Beach's "Autumn Song," as well as two musical antecedents which include very similar cycles: the A-flat minor funeral march from Beethoven's Twelfth Piano Sonata (Op. 26), and Franz Schubert's song "Der Jüngling und der Tod." In each case, we will see octatonic-triadic cycles that charge towards their octatonic poles, and then retreat or change direction somehow. Moments like these dramatize the interaction of conventionally tonal organization, with organization based on parsimonious semitonal voice leading.

Let's return first to "Autumn Song." I mentioned that the pivotal moment, tonally speaking, happens with an enharmonic reinterpretation that occurs in mm. 23 through 25. This reinterpretation is a remarkable coming together of linear and harmonic phenomena, as shown in Figure 4. The passage pictured here begins in A♭-, and quickly cadences in C♭ major by means of a cadential six-four (mm. 21-22). This is one of the octatonic near-poles; it stands in modal contrast to the song's F minor tonic, but perches precariously on the tritone above it. C♭ in m. 23 provides the bass note of a C♭+ triad; the vocalist sings the fifth, Gb, several octaves above, having just arrived on the stanza's final word by a large ascending leap. The bass note is then held into m. 24,

and enharmonically re-written as B♮. The rest of the notes change around that bass note: G♭ moves up a half-step to G♮, while E♭ moves down a half-step to D.[10] The transformation marked here, PL with a tilde (~), indicates what Frank Lehman calls a "fuzzy transformation," after Joseph Straus and David Lewin. Adding the tilde (~) and describing C♭+ → G+ as ~PL indicates that the triad G+ is a meaningful subset of the G dominant seventh chord in m. 24. C♭ in the bass, now re-interpreted as B, becomes the third in that first-inversion applied dominant. As a temporary leading tone, it resolves upward by step to C in m. 25. The C-based harmony this bass note anchors is initially ambiguous and delayed: its third is suspended (as F in m. 25) and then held through an elaborating augmented sixth chord, before resolving to E♮: the leading tone back to the home key, F minor. The cycle of triadic transformations that had been unfolding since the beginning of the song, and particularly since the second verse began in m. 13, is thus broken when a single pitch from one of those triads is reinterpreted to anchor V7 of V in m. 24. The moment dramatizes the tension between the triad as a voice-leading object following a repeated pattern of transformations, and as the bearer of tonal intentionality that can direct the ear towards a harmonic and formal goal. The music seems to require a few moments to recover from this transition; a wordless melisma, not present in the original poem, unfurls over four more measures of dominant prolongation (mm. 27–30). The third verse that follows, sung by a narrator who has now been transformed by the experience of the second verse's harmonic journey, ends very differently than the first, with a sunny, F major declaration of love.

Let's examine the harmonic trajectory of "Autumn Song" further, by viewing it through the lens of two additional examples. The first comes from the A♭ minor "funeral march" that forms the third movement of Ludwig van Beethoven's Piano Sonata No. 12 (op. 26, 1801). As shown in

Figure 5a, the march begins with an eight-measure period, in which the initial minor tonic moves to its relative major, C♭. The theme then restarts with a parallel transformation, to B minor in m. 9, and another modulating period carries B minor to D major. The arrival on D in m. 16 is slightly ambiguous: although the cadential 6/4 immediately before implies D major, the Ds that end the phrase ring out in hollow octaves. F natural then appears very quickly in the pickup to the next measure. But D minor never fully arrives; instead, m. 17 brings vii*7/Eb major, and the E♭ major that this fully diminished seventh chord decorates is the dominant that will bring back the A♭ minor tonic.

If we examine this movement on the octatonic-triadic cycle (Figure 5b), we see that once again, the harmony moves through the cycle from the minor tonic to the "five semitone" near-octatonic pole. One further Parallel transformation would bring it to the pole, but exactly as in "Autumn Song," the music pulls back. The tonal/triadic maneuver is the same in both cases: the tonic of the five semitone near pole avoids becoming the root of the octatonic pole, by turning instead into an applied leading tone. The rest of the near-polar triad then moves parsimoniously to an applied dominant of some sort, which is used to return to the original tonic. In Beach, this was $V^{6/5}$ of V, while in Beethoven, D evades the octatonic-polar D minor by instead becoming the root of vii*7 of V. In both works, one vocal and one instrumental, this retreat from the octatonic pole seems narratively significant. In Beach, it can be heard the moment when the singer is finally overcome by the beauty of autumn, and turns their outlook from despair towards hope. For Beethoven's march, subtitled "Funeral March on the Death of a Hero," Jeff Perry has suggested a narrative reading that finds the piece depicting someone in mourning for the nameless hero, and the music's tonal and affective shifts portraying alternating swells of grief and their temporary assuagements.[11] My identification of an octatonic-triadic cycle in the first two phrases does

nothing to trouble Perry's reading, until we arrive at measure 17. For Perry, D is co-opted against its will into the diminished seventh chord, "laden down with a humiliating, crushing burden."[12] While I agree with Perry that this D stands somewhat outside a prevailing diatonic order,[13] I would interpret it quite differently in dialogue with Beach's song, and with what we have seen so far of the octatonic-triadic cycle. The diminished 7th chord is not a crushing burden, but rather an avenue of escape. In both of these cases, the music steps right up to the true Octatonic pole, but then swerves back to the tonic, which provides solace and security.

What happens, though, when a piece of music *does* cross all the way to the Octatonic pole, or beyond? Franz Schubert's "Der Jüngling und der Tod," or roughly, "The Youth and Death," was published in 1817. The song exists in two versions, and we will discuss the first version, which has also been analyzed from a Neo-Riemannian perspective by Michael Siciliano. In this less-often heard original guise, the song is written for two voices, registrally separated and marked above the music as if in an operatic score: "The Youth" sings most of the song, while "Death" gets a couplet at the end.[14]

As is the case in our other two examples, the song begins in minor. It is difficult to miss the musical resemblance between the descending lament lines that begin "Der Jüngling" and "Autumn Song." "The sun is sinking," sings the youth. "O that I might depart with it, flee with its last ray: escape these nameless torments and journey far away to fairer worlds." It is a similar affective universe to Beach's "Autumn Song," albeit somewhat more dire. The difference between the two, however, is that Schubert's youth gets his wish, and Death comes to offer him rest.

In Siciliano's (2005, 97) reading (shown in **Figure 6a**) the octatonic-triadic cycle explains the coherence of the song's directional tonality. "Der Jüngling und der Tod" begins in C# minor, and ends in Bb major: three quarters of the way around the cycle. The feeling of secure resolution in a

different key, Siciliano argues, is because the voice-leading logic of the song is concerned with what he calls the "orientations" of its triads, and the positions of the voices therein. Moving three-quarters of the way through an octatonic-triadic cycle (from m. 1 to m. 31 in the diagram above) allows each voice to return to its original position within the triad: the top voice, which begins on C#, assumes the role of the fifth (B in E+) and the third (B and then Bb in G+ and G-) before again becoming the tonic of Bb+, and so forth.

I would like to think hermeneutically here, however, and propose another explanation for this particular octatonic-triad cycle, as shown in **Figure 6b**. As I noted, the character of Death ends the song with a chilling final couplet in response to the youth's plea: "In my arms, you will find cool, gentle rest. You call, I take pity on your suffering." Death's entrance coincides with the cycle's arrival on G minor—the octatonic pole. This arrival is marked by a notated key change, demonstrating the tonal distance from the home key—a property that will be found in nearly every octatonic-triadic cycle that progresses more than halfway through. Given the hermeneutic evidence from our other examples, we can hear this particular example through much the same interpretive lens as we might approach a hexatonic pole: because the youth does not turn away, and has no enharmonic "escape route," we hear an encounter with the Uncanny, as Death embraces the youth on the other side of the octatonic veil.

Pantriadic transformations are sometimes thought of as figurative shortcuts: ways of traversing a great diatonic distance in a short time, or with a minimum of voice-leading "work." Or, they are cast—in music from the nineteenth century to the present—as depicting wonder or mystery, or the terror of the uncanny. "Autumn Song," however, demonstrates that transformations might also meander, depicting the psychological interiority of the song's protagonist. If Henry Beach's poem

is almost too abrupt, too direct ("I'm sad that summer's over. Wait, now I'm happy again!"), then we might hear this sequence as Amy Beach's way of drawing the listener into a more complex and less quickly unfurling emotional word. Consider the song's representation on the *Tonnetz*, in Figure 7. By following a series of octatonic-triadic transformations along their cycle, the song figuratively "overshoots" its prototypical tonal waypoint, A♭ major, and goes several stations farther than it needs to. As it approaches the octatonic pole—the farthest point from tonic—the song must reverse course: an enharmonic reinterpretation is required to reassert diatonicism. Even after that central moment—the emotional apex on "high in purple rare"—the song does not arrive directly to its major key resolution; instead it returns to F minor. But following this trajectory on the *Tonnetz* indicates that in the sense of tonal space, we are nowhere near where we began. We could thus hear Beach's expressive use of an octatonic-triadic cycle as helping the music to fill in the gaps in the relatively straightforward text. Ironically, once the escape back from the near-octatonic pole occurs, there is almost a change in roles: the music becomes straightforward, ending on an almost cursory cadence reminiscent of a Classical recitative. The text, in turn, finally takes on ambiguity with its final line: "to thee I sing." To whom, though? A romantic love? Or the spring, or the singer's newly fond remembrance of autumn? The musical simplicity of the ending is enriched by the fact that the singer, though arriving at a place we might have predicted from the outset, has actually travelled a long way in both musical and emotional terms. And so have we, as listeners.

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[1] I am grateful to Charles J. Smith for discussions about octatonic spaces during my research, to Austin Nikirk for discussions of Amy Beach's songs on poems by her husband, and to an anonymous peer reviewer from another project for pointing out the chord progression in Beethoven's funeral march.

[2] Malawey (2014, Fig. 2) characterizes the song as "between ABA' and ABC."

[3] The three distinct PR cycles, which trace out the eight triads contained in one of the three formulations of the octatonic scale, have been discussed (though not always by this name) in Cohn (1997), Douthett & Steinbach (1998), Engebretsen & Broman (2007, 49), van den Toorn & McGinness (2012, 42–52), and Lehman (2014b); the latter two sources both present images of the "hyper-octatonic system," a diagram which seems to have originated in Ramirez (2009). That dissertation, along with Ramirez (2013), presents the most detailed treatment of octatonic cycles, using the music of Anton Bruckner as an example. Just as Cohn's hyper-hexatonic system unites the four hexatonic systems in a diamond-shaped space, Ramirez's hyper-octatonic system combines the three octatonic systems (see our Figure 17) in a triangular space.

[4] See Cohn (1996) and the more recent synthesis of hexatonic voice leading in Cohn (2012).

[5] See Cohn (2004), which demonstrates how a combination of voice-leading properties and common usages have led to the chord being associated with the phenomenon of the Uncanny.

[6] Ramirez's formulation of "octatonic pole" is not to be confused with Adrian Childs' (1998, 187) use of the same term to describe non-overlapping [0258] tetrachords. Richard Cohn (2012, 155) notes several historical antecedents for seventh-chord octatonic poles, including Sigfrid Karg-Elert's (1930) *Kollektivwechsel* ("collective exchange"), and Ernö Lendvai's (1988) work on Wagner's *Ring* cycle.

[7] The issue of defining voice-leading parsimony in light of the R transformation's two "units of voice-leading work" (to borrow Cohn's term) is not a new one; defining what is truly parsimonious occupied Cohn (1997), Douthett & Steinbach (1998, 243–244) and other Neo-Riemannian theorists in the 1990s, and the difficulty of reconciling this third canonical transformation with the other two is perhaps one reason why the PL cycle has become so much more strongly identified with Neo-Riemannian theory, and why R is so minimized in Cohn's (2012) "unified model of voice-leading space."

[8] See Ramirez (2009, 212–217).

[9] I believe Julian Hook's (2002, 57–60, 70–73) system of Uniform Triadic Transformations to be useful for clarifying how near poles work. Specifically, the UTT system would characterize Octatonic-triadic poles as <+, 6, 6>, that is: preserves the triad's mode, transposes a source major triad up by six semitones, and a source minor triad by 6 semitones. The two near poles vary based upon whether they are reached from an initial major or minor triad. The RPR ("five semitones of work") transformation that we are primarily interested in would be represented as <-, 3, 6>, and the PRP ("four semitones") would be <-, 6, 3>. I have yet to fully explore the implications of this, however.

[10] Drawing on Joseph Straus (1997, 267–273), Frank Lehman (2018, 93–94) defines a "fuzzy transformation" as a transformation in which one member is a triadic subset of a larger sonority. at the moment of enharmonic reinterpretation: a transformation in which one member is

a triadic subset of a larger sonority. The tilde (~) notation is adopted from Lehman; Straus, reading in turn from David Lewin (1982, 338–334) uses an asterisk to indicate imprecise transpositions or inversions of pc sets (i.e. *T_n). Lewin describes fuzzy transformations as sounding "T_n-ish" or "I_n-ish."

[11] Jeffrey Perry, "Beethoven and the Romantic Unique Subject: The Dialectic of Affect and Form in the "Marcia funebre sulla morte d'un eroe," op. 26, III." *Indiana Theory Review* 18/2 (1997): 47–73.

[12] Perry, "Beethoven and the Unique Romantic Subject," 51.

[13] One view of the funeral march that seeks to reinforce its sense of diatonic order is Heinrich Schenker's analysis in *Der Freie Satz*, which ignores the sharp-side enharmonic reinterpretations that begin in m. 9, and casts B minor as C♭ minor and D major as E𝄫. D$ itself does not appear in the bass until the dimished seventh chord in m. 17. For more on this analysis, as well as Schenker's account of the work in *Harmonielehre*, see Matthew Brown, Douglas Dempster, and Dave Headlam, "The ♯IV Hypothesis: Testing the Limits of Schenker's Theory of Tonality," *Music Theory Spectrum* 19/2 (1997): 166–167.

[14] Several scholars have analyzed Schubert's revisions: the revised version, which followed closely on the heels of the original, transposes "Death's" coda to a register that can be more easily covered by a single singer. The revisions also incorporate quotations from "Der Tod and Das Mädchen." Jackson (1991, 343–348, following Wolff 1982) analyzes the motivic connections between "Jüngling" and "Mädchen," while Steinbron (2011, 95–98) examines how material from the first version of "Jüngling" is repurposed in the second. While Steinbron draws attention to the tritone relationship contained within the song's harmony, he locates it differently: reading the opening bars as an off-tonic introduction in E major, he emphasizes Bb major at the end of the song, rather than the G minor that harmonizes Death's entrance.