

Ganymede's Heavenly Descent
by Jason Yust, published in *Music Analysis*, 2019

“The topography of the keys, a descent from A \flat to F, is utterly inconvenient. Ganymede presumably does not *descend* into the heavens”
—Suzannah Clark (2011a, 111)

Schubert's song 'Ganymed' has long fascinated music analysts and historians of various stripes, because, in addition to being a deeply compelling work of art, it serves as the perfect sounding board for some of our most prominent institutional concerns. For music theorists, the primary problem raised by the piece is its challenge to the theory of monotonicity as the source of tonal unity, since its progressive tonal plan makes it hard to identify a single referential tonal centre. For historians, the allure of 'Ganymed' is in its rich layers of intertextuality between music and poem. What has gone unremarked in discussions of the song, however, is a quotation of one of Beethoven's best known and most important works, the Op. 53 ('Waldstein') Piano Sonata, that appears midway through. Schubert's placement of this quotation offers unique insight into his attitude towards the elder composer, a singularly important aspect of his biography.

This article analyzes 'Ganymed' both as a window into Schubert as a composer and thinker and as the springboard for a reflection on theories of harmony and tonal structure. Its centrepiece is a spatial theory of tonal harmony described in part 2. This is essential to resolving ontological problems surrounding the analysis of large scale structure described in part 1, which come to the fore in dealing with progressive tonal plans, and for providing hermeneutic access to latent metaphors of the tonal system necessary to contextualizing the Beethoven quote in the song's rich network of text-music relationships, as described in parts 3–4.

The many tonal analyses that have been offered, and their different ways of addressing this problem, therefore serve as an excellent case study in the ontology of tonal structure. In revisiting these analyses in part 1 of this article I argue that we have inherited from Heinrich Schenker a flawed premise in the formation of the concept of tonal structure, which suppresses the role of keys as the objects of long-range tonal structure. The spatial theory of part 2 then provides an alternative to Schenker-like reductional methods and rationalizes paradoxes of tonal structure relevant to Schubert's harmonic techniques.

The text of 'Ganymed', with its irreverent mix of classical and modern and its unconventional irregularly metered free verse, is highly distinctive of its author, Goethe, the most revered writer and poet in the German-speaking literary pantheon of Schubert's time. One can safely assume then, that Schubert felt a special responsibility in sensitively setting this poem, and was satisfied with the result, since he included it in his set of three songs (Op. 19) dedicated to Goethe. Previous analysts (such as Kramer 1995, 1998), building on a thread that came to dominate Schubert studies in the 1990s, have focused on the role of sexuality in the song. While sexualized language is certainly present in the text, and faithfully set by Schubert, I would argue that a narrative extolling the power and beauty of music is more fundamental to Schubert's setting. The Beethoven quotation is key to interpreting this narrative. Through it Schubert unites two cultural heroes, Beethoven and Goethe. But, more impressively, the 'Waldstein' reference is intricately woven into the harmonic fabric of the entire song, as shown in part 4 below. This adds a further interpretive layer that helps us

appreciate the spatial metaphors implicit in the harmony and the ultimate logic behind the song's progressive tonal plan.

(1) 'Ganymed' and the Ontology of Tonal Structure

Music theorists have frequently revisited 'Ganymed' because of its unusual tonal plan. A survey of analyses illustrates the extent to which Schenker dominates the analysis of harmony on the large scale: they array themselves neatly along a continuum from purely Schenkerian (Jackson), variously updated or modestly modified Schenkerian (Damschroder, Krebs) to 'freely' Schenkerian (Kramer) and non-Schenkerian (Clark). Even Clark (2002; 2011a, 111–145), however, though not adopting any of his principal theoretical premises, places her analysis very strongly in dialog with Schenker and adopts superficially Schenkerian analytical paraphernalia such as voice-leading graphs. It is therefore essential to probe the theoretical premises associated with Schenker particularly in evaluating the reception of 'Ganymed', a song that so clearly demands an accounting for large-scale tonal design and has elicited such a wide variety of perspectives on the purposes and practice of Schenkerian analysis.

In considering the basis for any analytical approach, we must inquire not only into its theoretical premises but also the methodological premises. Theorists are typically more interested in the former, but one's position on any theoretical premise is often largely shaped and determined by the methodological premises used to define it. For instance, much of the interest in 'Ganymed' has focused on the Schenkerian theoretical premise of monotonicity. Only the most firmly Schenkerian of the analyses of Ganymed (Jackson 2006) actually adheres to this doctrine. Krebs (1981) analyses the song primarily for the purpose of constructing theoretical alternatives to monotonic analysis, and Damschroder (2010, 135–141), though his theory is grounded firmly in Schenkerian ideas, radically deviates from the monotonic premise in his analysis. In order to put a premise of monotonicity on trial, however, one must erect an edifice of methodology to pin down what exactly is at stake. Here, theoretical arguments may become Schenkerian even in spite of themselves. The Schenkerian claim that 'Ganymed' is in one key amounts to a claim that the $A\flat$ major harmony of bar 1 bears some kind of relationship to the F major harmony of bar 116, and that relationship exists within some tonal framework (i.e., as $\flat III-I$, for Jackson 2006 or $III^{\sharp}-(I)-II$ for Steinbron 2011). Krebs, Kramer, Clark, and Damschroder all demur on the second premise, offering alternate ways of relating harmonies that does not involve drawing a tonal framework around them.

Nonetheless, strong methodological premises can be unpacked from the Schenkerian idea of tonal structure generally. It seeks to establish long-range connections, and asserts that voice leading is the substance of harmonic connections. This is the first, explicit, claim in what might be called the Schenkerian syllogism: Long-range harmonic structure is based on voice-leading relationships. The second premise is implicit: Voice leading is a relationship between chords. The conclusion of the syllogism, then, is that tonal structure consists of long-range connections between local objects, chords, dictating the kind of reductional

analysis associated with Schenker. Some additional theorizing of the concept of voice leading in the next section will help us challenge the implicit premise, and hence this conclusion.¹

Most analysts that have tackled ‘Ganymed’—with the exception of Jackson (2002)—have resisted drawing too strong of a structural link between the beginning and end of the song, Krebs (1981) by analyzing the work in two keys, Steinbron (2011) with a related ‘polyfocal’ method, Kramer (1995, 1998) and Damschroder (2010, 135–141) by similarly separating the piece into two tonal contexts. Clark (2011a, 125–138) homes in on the basic problem with her observations on another two-key setting of Goethe’s text by Reichardt. The final key of Reichardt’s song (B \flat major) clearly emerges as the result of a local V \rightarrow bVI progression in the key that begins the piece (D major) and occurring at the dramatic turning point in the text. The existence of a local tonal context for this relationship makes a structural explanation of the tonal plan as I \rightarrow bVI rather convincing. In Schubert’s setting, on the other hand, there is no specific passage that embraces the two framing harmonies (A \flat major and F major) in a single tonal context. Claiming a structural relationship between these harmonies in this situation does not violate an explicit tenet of any theory of musical structure (Schenker’s or Schenker-derived). Rather, it strains musical plausibility. Why? Clearly, even though Schenker-derived theories treat structure as a matter of long-range connections between local events, the surrounding tonal contexts, presumably ‘reduced out’ at the structural level in question, still lurk behind the analytical decision making. If the initial A \flat harmony could be structurally linked to another that actually appeared in its immediate context as bIII of F major (or minor), then the idea of describing the entire piece as an auxiliary progression in F major (e.g., bIII–IV–V–I) might seem to have some connection to an actual experience in hearing or performing the piece. As it is, such accounts seem to have no such connection.

Must we resort to describing the tonal plan as one of fantasia-like arbitrariness, then? Clearly, an alternative to a chord-based structural explanation is needed. The analysts that reject an overarching tonal structure for the piece make various attempts to provide such an explanation, but most of these explanations are quite general, to the point where any number of ending keys might satisfy them. The theory of harmony offered in the next section relies heavily on spatial metaphor, and shows that the tonal plan of ‘Ganymed’ evokes a paradox of tonal space, while also referencing the tonal plan of ‘Waldstein’, thereby simultaneously paying homage to Beethoven while challenging the underlying ethics of his art.

Part of what is problematic about the conclusion of the Schenkerian syllogism is that it undercuts the traditional notion of keys as the objects of long-range structure. The devaluation of the traditional concept of key as a fiction or illusory concept, in fact, is a major project of Schenkerian theory, as best reflected in Carl Schachter’s (1987) writing on the topic. This project goes hand-in-glove with the Schenkerian syllogism: the main purpose of the concept of key is that it controls harmonic design over longer spans of time, but if chords are the objects of voice leading, then they take over this function and keys become a vestige of an old, no longer serviceable, theoretical machine.²

¹ A similar point is made in Yust 2017.

² In Yust 2018 I argue that keys are necessary to substantiate large-scale analyses of tonal structure without relying on formal cues.

As a methodological principle, the use of chords as the objects of tonal structure characterizes not only standard Schenkerian analysis but also the more diverse reductional approaches that analysts like Damschroder, Krebs, Kramer, and Clark have applied to large-scale harmonic analysis in ‘Ganymed’. The reason for this is not any attachment to Schenkerian dogma *per se* (certainly one could not say this of Kramer and Clark), but because Schenkerian analysis has provided the only clear model for long-range harmonic analysis and without it one runs the danger of having no way to explain Schubert’s tonal plan and thereby defaulting to the idea that it lacks any specific logic, and amounts to vague ‘tonal wandering’. (This is especially evident in Clark’s [2011a, 111–112] ridicule for such interpretations.)

Consider, however, that according to the Schenkerian syllogism, we cannot even make the simple claim that the song begins in A \flat major and ends in F major—at least not if ‘A \flat major’ and ‘F major’ are understood in the conventional sense as keys. When we speak of the song beginning in A \flat major, we mean not just a chord in bar 1 but all of bars 1–18 and all of the harmonies contained therein, and similarly for ending in F major. As keys, A \flat major and F major are conventionally related by some combination of the circle of fifths distance and parallel and/or relative mode relationships, rather than triadic voice leading. The theory developed below will help us question the hidden premise of the Schenkerian syllogism, that voice leading is only a relationship between chords, and thereby reject the conclusion and the idea that keys are illusory. While some theorists (e.g., Cohn and Dempster [1992]) have occasionally expressed dissatisfaction with the idea that tonal structure consists of long-range connections between local objects (chords) such critiques are unlikely to stick as long as they fail to replace the ontological support of large-scale tonal analysis, the powerful idea that voice leading is the basis of tonal structure. Rather than challenge this premise, however, I propose that we expand the concept of voice leading. The barrier to this is the difficulty of envisioning a theoretically consistent way to mix such diverse species of harmonic object as triads, seventh chords, and keys under a single relational principle (voice leading). A goal of the Fourier phase space described below is to overcome this barrier, while the geometric aspect of the theory opens a hermeneutic door to important features of Schubert’s music as it relates to Goethe’s text, which relies fundamentally upon spatial metaphors of ascent and descent.

(2) Tonal space

This section proposes a general theory of tonal meaning—i.e., a theory that can explain how tonal contexts impart meaning to individual tones—that also serves a theoretical alternative to reductional analysis. Central to the theory is what I will call ‘tonal space’, which has been developed in previous work as a *Fourier phase space* (Amiot 2013, 2016, Yust 2015b, 2016, 2017). The specific spatial significations the theory thereby imparts to harmonic materials are essential to the interpretation of Goethe and commentary on Beethoven imputed to Schubert in the analysis of ‘Ganymed’ that follows in the next two sections of the article.

Rather than reproduce the mathematical derivations of this space already thoroughly described in these existing publications, I will offer here a briefer explanation of two parameters upon which the space is based, diatonicity and triadicity, via basic musical considerations relating to scalar and diatonic voice leading. My primary purpose in doing so is to show how tonal space helps us address some of the concerns about analyzing Schubert raised above. Relationships in tonal space directly reflect spatial metaphors of ascent and

descent that are common coin of human music perception. The directness and intersubjectivity of these metaphors are essential for applying them to the interpretation of Schubert's music. Tonal space also allows us to re-conceptualize the ontology of scale, chord, voice leading, and structural level in a way that resolves some of the problems of applying reductional analysis to a piece like 'Ganymed'.

As a motivation for defining diatonicity and to underscore its importance to musical meaning in Schubert's music, consider the magical modulation that occurs at the crux of 'Ganymed'. The passage in Figure 1(a) begins with the initial quotation of the 'Waldstein' motive, in the right hand in bar 60.³ This motive, which derives from the distinctive motive of Beethoven's main theme (Fig. 1b), further discussed in section 4 below, continues to sound for eight bars. The text of these eight bars comes towards the end of the second long stanza of Goethe's poem and invokes the nightingale's song. The final, transformative, lines of the stanza "Ich komm'! ich komme! / Ach, wohin? Wohin?" contain the modulation, prepared by a mode change to E minor. In bar 71, C major is reinterpreted as a tonic (ultimately it will be understood as a dominant) just at the moment that it arrives via a deceptive progression in E. As Schubert extends a C pedal for four bars with a I–vii^{o7}–I progression (and melodic descent) over it, the key of E minor—and hence also the scale-degree sense of C as $\hat{6}$ —instantly evaporates. The effect is marvelous and stunning, but not entirely unique to this song. He used exactly this technique (to go from A minor to F major) two years earlier, in another Goethe setting, 'Meeresstille' (D.216). In that song the weirdly half-tonicized F major represents the eeriness of a sea that is terrifying in its utter stillness.⁴

Figure 2 gives a reduced harmonic progression for the whole passage, with the upper staff showing the essential melodic line outlined by the singer, which has a clear linear direction supported by strong voice-leading implications in the harmony. Annotations below the staff point out some essential chromatic relationships of the passage, the E to E# that spurs the initial melodic ascent and G# to Gb, the principal element of the modal shift. The progression that directly follows the change to C major includes enharmonic variants of these two semitones, F–E and Ab–G (in fact, the diminished seventh chord here is enharmonic with the earlier vii^{o7}/ii in E major). Such enharmonic changes are a familiar element of this musical style, but they are typically explained as a simple orthographic phenomenon, underestimating the importance of the tonal sensations associated with the different spellings. We have a strong feeling of the E# and G# pulling upward, away from the E and G, and a similarly strong feeling of the F and Ab pulling downward toward the E and

³ To my knowledge, this quotation has not been mentioned in print before. Head 2002 also invokes the influence of Beethoven in his discussion of the song in a review of Kramer 1998, but looks instead to Beethoven's *Fantasia* op. 77 as a source for its progressive tonal plan, not mentioning Schubert's more overt reference to the Waldstein.

⁴ It is particularly fascinating how this method emerges as a solution to the harmonic problems of the song between the two settings that Schubert composed just a day apart in 1815. F major is a central feature of the tonal plan in both versions, but in the first Schubert arrives there via a much more conventional modulatory progression and cadence. The sense of uncertainty in the tonal status of F major in the second setting is much a more effective evocation of the scene described by Goethe. On the poem and these two settings, see Lambert 2009.

G. The upward-pulling feeling is a general property of leading tones, which E# and G# each represent in bars 61 and 63 respectively, while the downward sensation is a general property of $\hat{4}$ and the minor-key $\hat{6}$, such as F and Ab in bar 72. In other words, the properties are associated with extreme positions on the circle of fifths, sharpward and flatward.

(a)

60 $\hat{1}$ ————— $\hat{1}$
 Ruft drein die Nach- ti- gal lie- bend nach mir aus dem

64 Ne- bel- thal. Mode shift

68 Mode shift Deceptive progression
 Ich komm! Ich kom- me! Ach! Wo- hin, wo-

73 hin? Hin- auf strebt's, hin- auf! Hin- auf strebt's hin- auf!

C maj.: I F maj.: V⁷ ————— I

(b)

5 B: I $\frac{V^6}{C:IV^6}$ iv⁶

Figure 1: (a) ‘Ganymed’, bars 60–78, (b) Beethoven, Piano Sonata Op. 53, bars 1–8

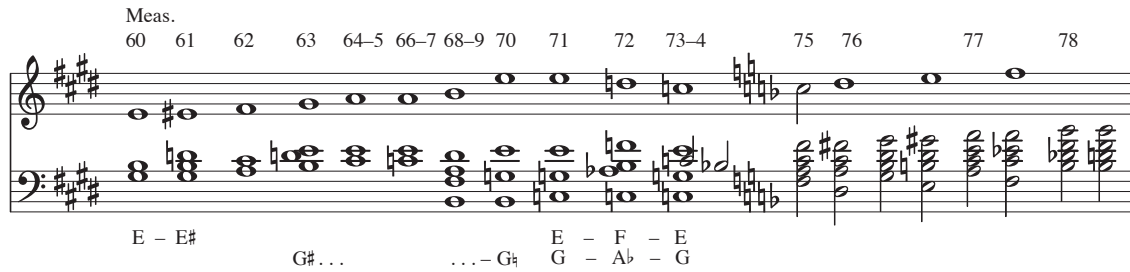


Figure 2: Harmonic reduction of bars 60–78 of ‘Ganymed’

Of course, since the circle of fifths is a *circle*, an extreme position can only be measured with respect to some reference point. In the example from ‘Ganymed’, the reference points are C major and E major. Figure 3 shows how we can locate reference points for these by taking *balances*, where the *balance* of a set is the average position of all its pitch classes. Because pitch-class space is circular, however, we need to use *circular averages*. This method is illustrated for a C major triad in Figure 3. Each pitch class corresponds to a unit-length vector with a different direction (Fig. 3a–b). A circular average is where a sum of such vectors crosses the unit circle, as in Figure 3c. Figure 4 spells all the pitch classes by taking shortest distances around the circle from C major and E major. Among the notes that change orientation are F/E# and G#/Ab, on the sharp side of E major, but on the flat side of C major.

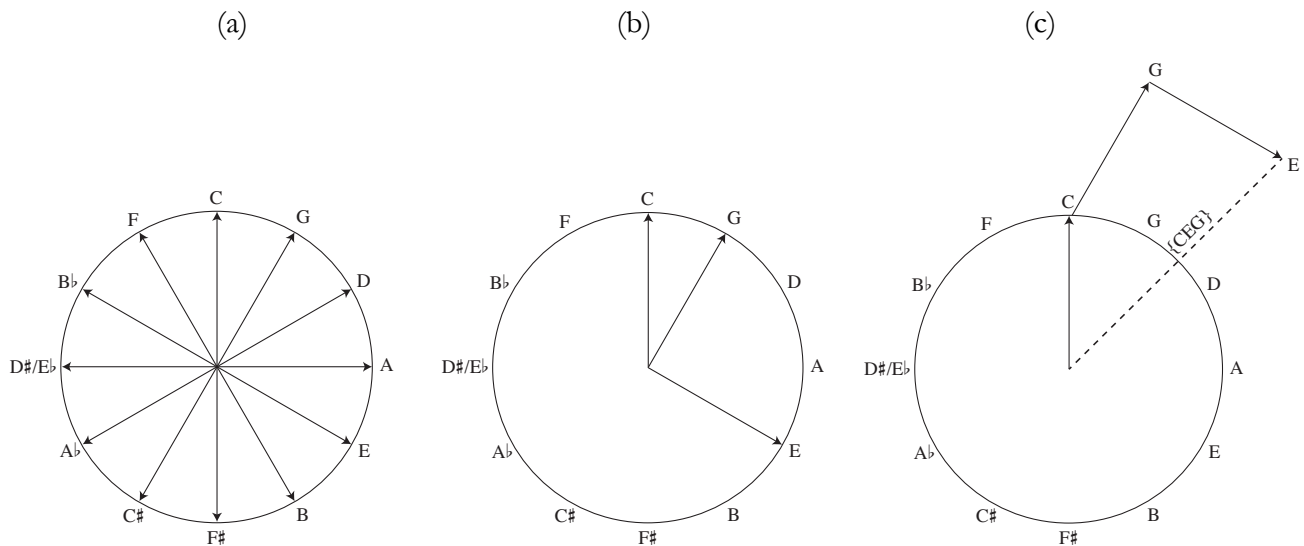


Figure 3: Derivation of the circle-of-fifths position for a C major triad through circular averaging

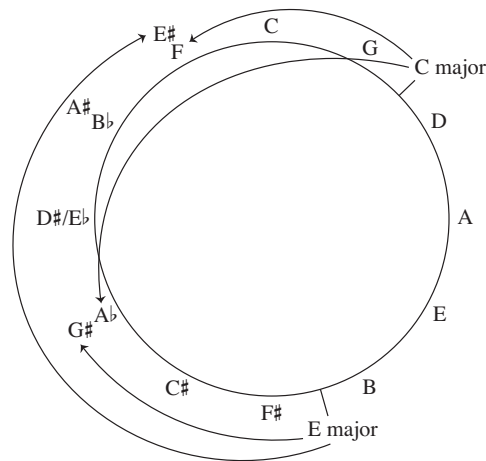


Figure 4: Positions of C major and E major triads on the circle of fifths, and the spellings implied by shortest distance from these points

This is a sufficient description of how enharmonicism works, but not quite an explanation, since we have taken the circle of fifths for granted. A number of music theorists have shown in different ways how the circle of fifths derives from special properties of the diatonic scale, and may be understood as a map of voice leading between diatonic scales.⁵ ‘Voice leading’ between scales is inflection, moving individual notes by small amounts through the addition or removal of accidentals to get from one scalar collection to another. Moving clockwise around the circle of fifths corresponds to ascending voice leading and anticlockwise to descending. This characterization is important to our analysis of ‘Ganymed’ because it means that *the sense of directionality to sharpness and flatness is inherited from the directional sense of pitch itself*. Moving sharpward is an *upward* motion because it involves upward inflections. Similarly the circularity of the sharpness/flatness dimension derives from the circularity of pitch class. The procedure of averaging positions on the circle of fifths allows us to extend reasoning about inflection between scales to other kinds of collections, such as triads. For instance, going from an E major to a C major triad is flatward because going from scales that contain E major (such as 3# or 4# diatonic) to ones that contain C major will involve four flatward inflections on average.⁶ In other words, the flatward inflectional voice leading, $G\sharp \rightarrow G\flat$, that occurs between E major and C major triads implies a moderately large shift of underlying collection.

Motion around the circle of fifths is therefore a kind of voice leading, distinct from triadic voice leading, but that can be applied either to triads or to scales. In both cases, the motion is reflected in changes of accidental (chromatic semitones), and larger shifts have more such changes, relative to the size of the collections being related. We can similarly characterize *triadic voice leading* and apply it to harmonic objects varying in the number of notes. Consider the basic progression of triads in C major given in Figure 5a. Each voice moves within a range of 1–3 semitones returning to its starting position, and each note in the

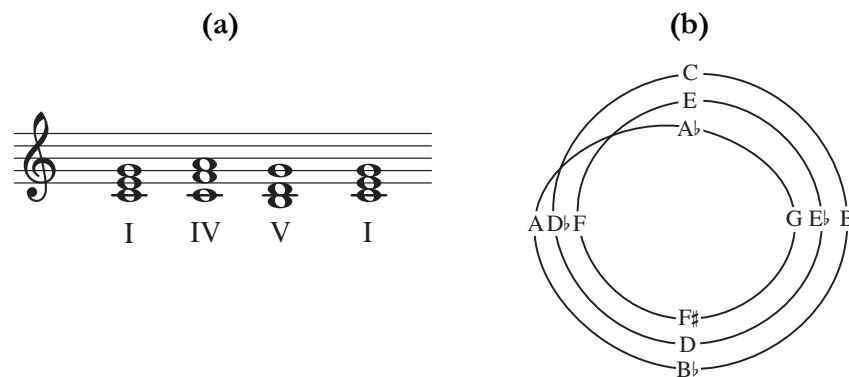
⁵ Clough and Douthett (1991), Hook (2008), Tymoczko (2004, 2013), Yust (2013, 2015a)

⁶ These points are developed more systematically in Yust 2015b, 2016. Taking circular averages is equivalent to finding the phase of the 5th component of the discrete Fourier transform, or Ph_5 .

scale falls within a region approximately centred on one of the notes of the tonic triad. Within each region, some notes—those that belong to the subdominant triad—are high, and some—those belonging to the dominant—are low. In other words, notes may be understood to be high or low relative to a *triadic position*. This is another spatial metaphor, one distinct from the sharpness/flatness metaphor, but similarly inherited from the basic spatial metaphor of pitch height.

We can define triadic positions with circular averages as we did for circle-of-fifths positions. Here, the basic space is created by wrapping the pitch-class circle like a rubber band three times around the unit circle instead of just once, as illustrated in Figure 5b, so that a single turn of the circle covers a third of an octave, the average size of a triadic interval.⁷ Major and minor triads do not divide the octave perfectly evenly, so their notes do not line up exactly in triadic space, but they are close. The centre of triadic space, or *triadic position*, defined by a consonant triad like C major, then, like circle-of-fifths position, can be located through circular averaging as in Figure 5c. Oriented from this triadic position, the other notes of the C major scale (or, indeed, any pitch classes) are defined as high or low, in accordance with their positions in the basic voice-leading paradigm of Figure 5a, as shown in Figure 5d.

As with diatonic positions, triadic positions are inherently directional, and this sense of direction essentially reflects a *functional* distinction, subdominant versus dominant, or authentic versus plagal. Notes with a subdominant quality are high with respect the diatonic context, like F and A relative to C major, and those with a dominant quality are low, like B relative to C major. Or, alternately, we could say that plagal motion (from the subdominant direction) is triadically downward and authentic motion (from the dominant direction) is triadically upward. Note that any pitch class or pitch-class set has a position in the space, regardless of its size, and can be described as functionally related to some context. The note A is on the subdominant side of C major, as are chords like D minor, D \flat major, or D^{o7}, or even scales, such as F major or D harmonic minor. Harmonic objects can have triadic positions regardless of whether they themselves are triads—e.g., a seventh chord understood in its capacity as a triad with a variable note, or a single note understood through the functions of the triads it might be a part of.



⁷ The circle of fifths can be generated by the same procedure, wrapping the pitch-class circle *five* times around the unit circle.

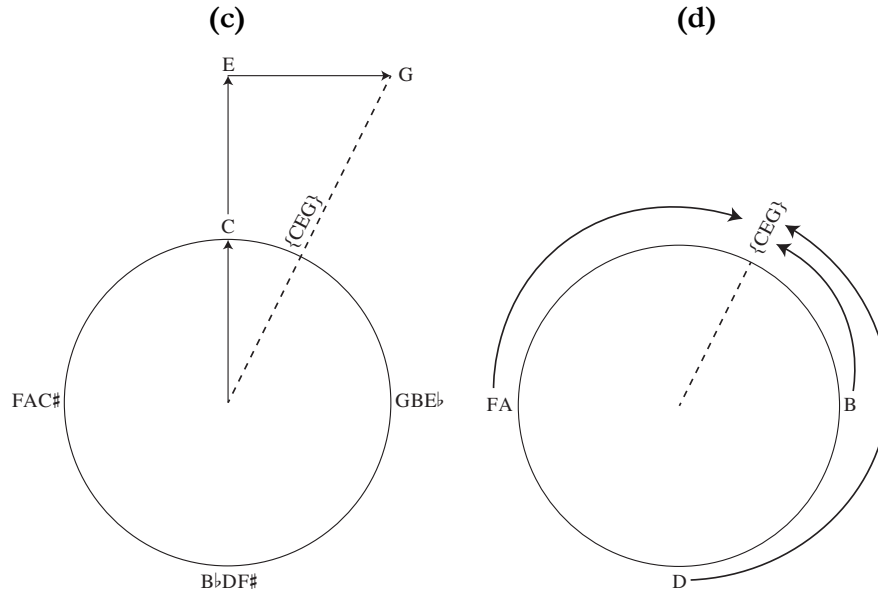


Figure 5: (a) Three functions balanced around C major (b) Triadic space as defined by wrapping pitch-class space three times, (c) The triadic position of C major, derived by circular averaging, (d) Relation of notes in the C major scale to the C major triad.

Figure 6 shows the position of common chords from E major and E minor on the triadic circle, showing that the concept of triadic position effectively divides chords by function, with chords of subdominant type to the left (anticlockwise) of tonics, and those of dominant type to the right (clockwise). Clockwise is therefore triadically *downward* or plagal, and anticlockwise is triadically *upwards*, or authentic. (This is the reverse of the circle of fifths, in which clockwise is upward—sharpward—for technical reasons that need not detain us here.)⁸ Harrison (1994) similarly associates subdominant and dominant function, and authentic and plagal motion, with characteristic kinds of ascending and descending voice-leading motions, what he calls the discharge of functional agents.⁹

The chords representing typical functional harmony in a key, as can be seen in Figure 6, are oriented around a stable triadic centre, and do not move far with modal shift. The key change, E major/minor to C major, in the passage from ‘Ganymed’ described above, is also triadically stable in a way that contrasts with its diatonic status, as a momentous shift on the circle of fifths. Figure 7 plots tonic, dominant, and subdominant functions in E major, E minor, C major, and F major, the four keys implied in the passage. The functions of C major

⁸ The triadic circle is closely related to Douthett and Steinbach’s (1998) ‘cube dance’, based on triadic voice leading and discussed in this capacity by Cohn (2011) and Tymoczko (2011). Moving clockwise between adjacent major, minor, or augmented triads in the triadic space corresponds to a voice leading that descends by one semitone overall. The major and minor triads group in hexatonic regions between the augmented triads, arranged around the circle in the same pattern as cube dance.

⁹ The duality of major and minor, on the other hand, is reflected in the diatonic dimension. Harrison strongly associates these two dualities. Tonal space presents them as similar in form and derivation, but also inherently independent and separable.

line up with those of E major, but the change to F major involves a more significant re-orientation, in which subdominant is redefined as tonic and a new region of the triadic space is adopted for the new subdominant, B \flat major. The keys C major, E major, and E minor (as well as A \flat major) are a triadically stable reference point because they belong to a single hexatonic cycle, as defined by Cohn (1996; 2011, ch. 2). A concept of function based on relationships in triadic space is therefore similar to the one presented by Cohn (2011, 169–75).

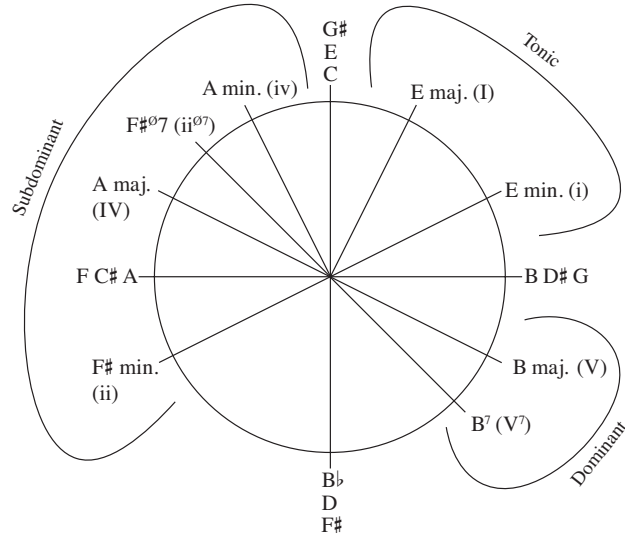


Figure 6: Some common functions the key of E on the triadic circle

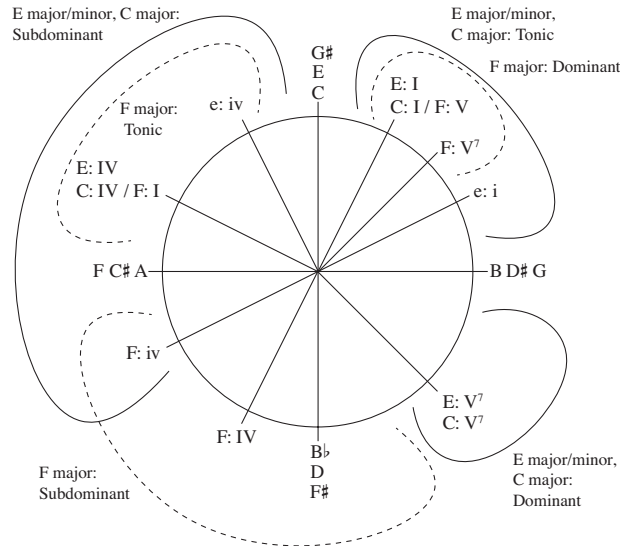


Figure 7: Functions of E major/minor and C major (grouped by solid arcs) and F major (dashed arcs) on the triadic circle

The passage may thus be understood as breaking a large change of tonal referential framework into two stages, the first making a chromatic shift in a stable triadic framework, and the second making a shift of triadic reference in a stable diatonic framework. The second of these is, of course, a highly conventional sort of tonal move, whereas the first is more distinctively Schubertian. The first move signifies Ganymede's spiritual transfiguration; that is, Schubert associates the chromatic dimension with *Geist*. Given that association, which one could apply effectively across Schubert's oeuvre, his increased recourse to distant tonal relations correlates with the increased attention to interior life in Romantic literature. Like the increased focus on the psychological dimension, and greater range of psychological activity, in the texts Schubert set, Schubert's music displays a greater tonal range in the more covert diatonic dimensions, and relies less on the more overt shifts of triadic position. In particular, where a poet like Goethe favors narratives driven by psychological development rather than externalized action, Schubert places more structural weight on diatonic shifts that lack the kind of functional/triadic re-orientations essential to structural modulations in the Classical style.¹⁰ Beethoven may be identified as a composer who introduced this non-functional dimension into tonal harmony in a thoroughgoing way, but also as a composer who resists allowing non-functional harmonic motion to usurp the traditional structural role of functional motion. In that way, 'Ganymed' crystalizes an aspect of Schubert's musical language both indebted to and transgressive of Beethoven's legacy, hence making it all the more logical that he would make an explicit allusion to Beethoven's music central to the song.

While the E major-to-C major modulation represents this kind of spiritual transformation, and therefore the true turning point of the tonal narrative, the shift from C major to F major occurs at the externalization of that shift, when the confusion engendered by the diatonic transformation ("Wohin? Wohin?") gives way to a firm assertion of directional certainty: "Hinauf stebt's! Hinauf!" ("Striving upwards! Upwards!"). The progression that follows, in bars 75–78 (shown in reduction in Figure 2) represents this directional metaphor literally. Figure 8 shows how the progression, a familiar sort of chromaticized ascending sequence or *Monte* schema, moves in triadic space. It circles unremittingly upwards, starting from the tonic, circling the entire space once, and continuing past the starting point to end above, on the subdominant. The literal voice leading, especially in the vocal part itself, reflects the ascent. The progression connotes the kind of directional certainty expressed in the text—*upwards* is the direction!—in contrast to the sense of confusion which follows the diatonic—spiritual—transformation, which is actually *downwards* (flatwards).

¹⁰ Note that, in this account, dimensionality replaces the 'double syntax' of Cohn's (2011, ch. 9) explanation of 19th-century harmonic practice. While Cohn's *Tonnetz* is two-dimensional, and therefore essentially like the tonal space illustrated below, it obscures the dimensionality of the space by skewing the basic toroidal axes.

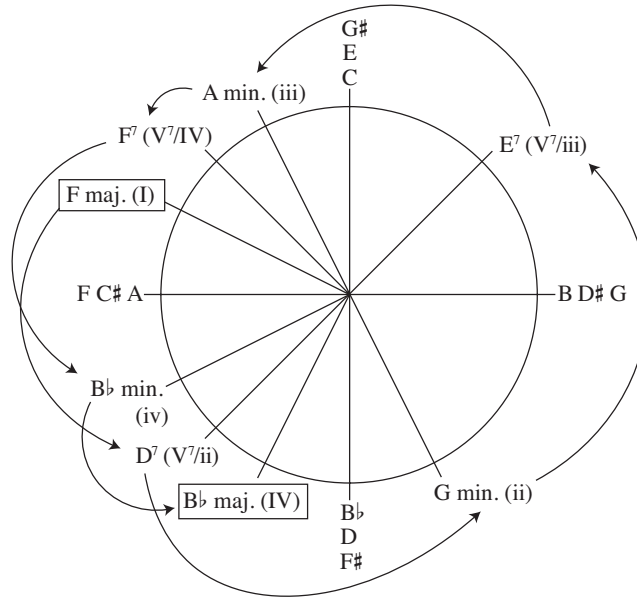


Figure 8: The *Monte* progression in bars 75–78 (see Fig. 5) on the triadic circle

Each of these two distinct and independent dimensions of tonal activity thus encodes directional metaphor in a different way, resulting into a mapping onto multi-dimensional spatial metaphors that may also be reflected in a text, an opportune place of hermeneutic convergence. To map the two kinds of relationship, diatonic and triadic, between tonal objects efficiently, we can combine them into a two-dimensional *tonal space*, as in Figure 9, with triadic position on the x -axis and diatonic position on the y -axis. The space is *toroidal*, meaning it is cyclic in both dimensions. In other words, the left edge is the same as the right edge and the upper edge is the same as the lower one. The layout of triads and pitch-classes in the resulting tonal space reflects familiar tonal networks with long histories in music theory, such as the *Tonnetz*, the Schoenberg–Weber chart of regions, or the Krumhansl–Kessler space.¹¹ Any pitch-class set may be located in the space, including, e.g., scales or dyads, so it unites theories such as these which, while they produce superficially similar arrangements of keys, were initially based on different kinds of harmonic objects (triads in the case of the *Tonnetz*, scales in Weber’s chart, and probability distributions for Krumhansl and Kessler).

¹¹ While Krumhansl and Kessler (1982) derive their space from empirical probe-tone data rather than basic theoretical principles, Krumhansl (1990) observes that the result is essentially as the space derived here from purely theoretical premises of triadicity and diatonicity.

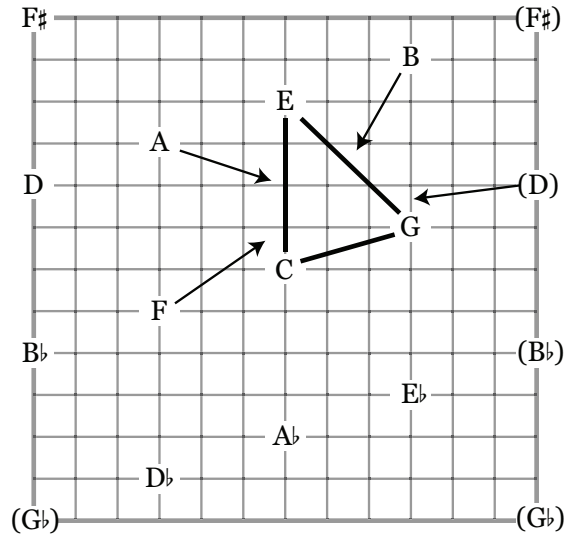


Figure 9: Tonal space oriented around C major

Tonal space offers an alternative to the implicit premise of the Schenkerian syllogism described in part 1, the assertion that voice leading is only a relationship between chords. First, it distinguishes two kinds of voice leading, diatonic and triadic, and allows that both types may be significant features of any harmonic relationship. Second, any kinds of basic harmonic objects, single notes, triads, seventh chords, or scales, may relate through *both* types of voice leading, either to an object of the same type or one of a different type. None of these objects are exactly equivalent to the traditional concept of key, but one important observation about this space is that the position of triads is always very close to the positions of the scales for which those triads may serve as tonics in the major-minor system. Diatonic scales are halfway between the tonics of the major-scale tonic and the natural-minor tonic, and harmonic minor exactly coincides with its tonic minor. Another aspect of spatial thinking that has emerged from the discussion above is that spatial relationships may be understood in at least two ways: as the relation of some object to a context, or as a motion from one object to another. The latter kind of relation is specifically temporal, and corresponds to the kind of relationships that make up a typical Schenkerian or neo-Riemannian analysis. Relationships of objects to context are highlighted by comments above about the *orientation* of tonal space, and relate to another important conceptual element of the concept of key: a key is a context. Or, more accurately, a key is a movable context: it may act as the centre from which other, more local, objects, are oriented, and it also, within a larger frame of reference, may relate temporally to other keys. Hence, the idea of temporal level implicit in the concept of key is well represented by spatial concepts of orientation and motion. And since all relations in tonal space (temporal and otherwise) may be understood as kinds of voice-leading relationships, this approach preserves the motivating Schenkerian idea of voice leading as the basic substance of tonal structure.

The need to orient tonal space is particularly pressing because of its toroidal topology. Any two objects may, in principle, relate in opposite ways in either dimension any note or chord that appears to be flatward from another may be respelled to be sharpward. Two chords connected by ascending triadic voice leading can be connected also by, perhaps less parsimonious, descending triadic voice leading. This cyclic aspect of each dimension of

tonal space creates potential paradoxes when it confronts the inherently linear nature of the directional metaphors it embeds. One pitch class is not absolutely above or below any other. The sense of above and below is dependent upon orientation, as reflected in the different possible paths one can use to connect two points. Each of these paths have opposite affective meanings.¹²

Consider, for example, pitch classes $E\flat$ and F in Figure 10. From $E\flat$ we can get to F by the same distance to the left or right. Given a context centred on $A\flat$ major or F minor, we would be inclined to connect them to the left, as a kind of simple neighbouring motion in which F is above $E\flat$. (Motion to the right is always triadically descending, to the left ascending.) In this kind of simple relationship, we can say that the notes are in the same *triadic orbit*. However, a context centred on $B\flat$ tends to connect them to the right, relating them to different triad members so that $E\flat$ is understood as high, a displacement of the third of $B\flat$, relative to F , its fifth. In this context the notes are in different triadic orbits ($E\flat$ in the orbit of D and F in an orbit with G). Similarly, a context of A minor encourages relating these two notes through the more distant vertical interval of an augmented sixth, with $E\flat$ (= $D\sharp$) to the sharp side (upward) or F rather than on the flat side (downward). The enharmonic distinction is conceptually familiar. The triadic distinction is less often made explicit, but is thoroughly woven into the foundations of Schenkerian analysis (in concepts like neighbouring, passing, arpeggiating) as well as traditional harmonic analysis more generally.

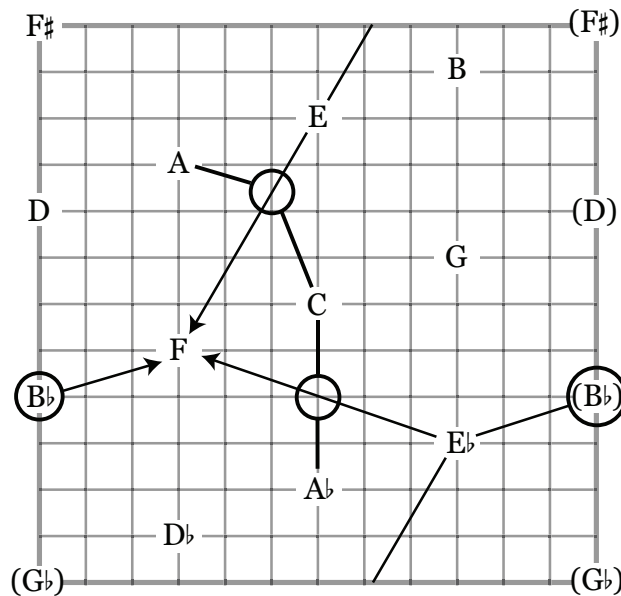


Figure 10: Three distinct paths (intervals) relating $E\flat/D\sharp$ to F

¹² This point is discussed more extensively in Yust 2015b, 150–158.

The directional metaphors embodied in the sharp/flat and subdominant/dominant axes are conceptually prior to the visual representation, and derive from the basic and commonplace metaphor of pitch height. We conceive of sharpness as upward because a sharp is literally an upward change of pitch height applied to the underlying scale. Subdominants are similarly above in the sense of abstract triadic voice leading. The deep cognitive importance of such metaphors, that assign physical attributes to sound, has been explained well by Steve Larson, whose work has shown how such metaphors can explain melodic expectation and lie behind Schenkerian and other kinds of linear-reductive musical reasoning. (See Larson 2004 and Larson and VanHandel 2005.) This includes not only simple directional metaphor, but also metaphors of magnetic or gravitational force, implicit in the idea of triadic orbits. Musicians use similar kinds of words to describe how pitches relate to contexts, a metaphorical language captured in discussions of ‘scale-degree qualia’. (Huron 2008, 144–50; Rings 2011; Arthur 2016, 63–95)

(3) ‘Ganymed’ through tonal space

Using tonal space and attendant concepts, we may now consider the tonal plan of ‘Ganymed’ as a motion through a series of tonal contexts, in the form of a temporal succession of orientations to the tonal space, as shown in Figure 11. In the first two parts (‘Wie im morgenglanze’ and ‘Dass ich dich fassen möcht’) Schubert establishes two main keys (A \flat and C \flat) and modulates to the dominant of each. These dominant keys ultimately do not belong to the basic tonal path because they are immediately cancelled out by subsequent music, in the manner familiar from eighteenth-century binary forms. They instead give a conventional dominant-leaning coloration to the tonal areas in this part of the song. The next tonal area, E major, is a respelling of F \flat major, and balances the rightward motion of the initial tonal move (from A \flat to C \flat) with a leftward one. This resolution in the triadic dimension, however, is accompanied by a further flatward departure in the diatonic dimension. This is a common maneuver for Schubert,¹³ and he would normally proceed by approaching the home key or its dominant key *from above*, returning home, as it were, after touring the diatonic dimension of tonal space with an enharmonic cycle. The final tonal move, through C major to F major, which occurs at ‘Ach! Wohin? Hinauf, stebt’s hinauf!’ does continue downwards, but does not quite make it all the way home, and also overshoots in the subdominant direction.

¹³ Examples include the *Notturmo* for Piano Trio, analyzed in Yust 2013, the Menuetto of String Quartet no. 13 and the first movement of the Piano Sonata D.960, analyzed in Yust 2015b, and ‘Dass Heimweh’ and the two-piano Allegro in A minor (D.947) analyzed in Yust 2018, chs. 10 and 12.

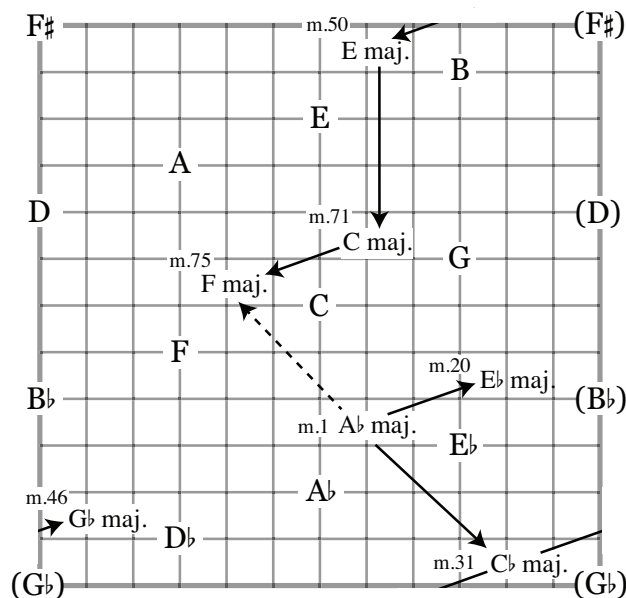


Figure 11: The succession of keys in ‘Ganymed’ in tonal space

The cyclic nature of tonal space is critical to interpreting Schubert’s tonal plans. In ‘Ganymed’, local chromatic shifts are always flatward, but the ending key, F major, is sharpward of the starting key, A \flat major. Damschroder (2010, 135–148) rejects this latter point, insisting that the final key is correctly spelled as G $\flat\flat$ major. However, if Schubert had returned to the original key (as he often does in such enharmonic tours) Damschroder would presumably have no problem identifying B $\flat\flat\flat$ major with A \flat major (see Damschroder 2006, 261–272; 2010, 48–52, 60–64). The geometric metaphor helps to reconcile the apparent paradox of enharmonicism: the *position* of F major and A \flat major is fixed, and the shortest path between them has F major to the sharp side of A \flat , but they can also be connected by less efficient paths. On a synoptic view of ‘Ganymed’, the path from A \flat major to F major is sharpward, whereas walking step-by-step through Schubert’s tonal plan, one tracks a longer flatward journey that relates the same points.

In such enharmonic tours, the specific point where the respelling occurs is like the international date line, essentially arbitrary. Cohn (1996) makes a similar point about enharmonic major-third cycles, and the idea of continuous spelling changes developed by Harrison (2002) in response matches the geometric explanation well.¹⁴ Enharmonic tours are less comfortably reconciled in Schenkerian analysis, where discrete enharmonic identities are essential at every level of harmonic activity. Samarotto’s (2006) analysis of a B \flat –G \flat /F \sharp –D–B \flat major-third cycle in Schubert’s ‘Der Hirt auf dem Felsen’ is an illustrative case: in the song, the cycle is smoothly and gracefully traversed. The analysis, however, requires the respelling to be a distinct event: a ‘magical relocation’. (212) For Samarotto, therefore, Schubert’s musical metaphor of distance is a distance between two enharmonic identities of a specific

¹⁴ Telesco 2002 discusses the history of the enharmonic tour, which she refers to as ‘retrospective enharmonicism’. See also Yust 2013 and 2018, Ch. 10.

note. The metaphor of distance could also be understood, however, as the distance of the *entire* harmonic journey, which occasions different enharmonic perspectives on all of the harmonies and tonal areas traversed. The cyclic harmonic journey then parallels the persistent metaphor of the song, the echoing of the shepherd's singing voice. The enharmonic tour that Samarotto discusses is prefigured by a terser one in the clarinet introduction (bars 19–31). Such preparatory enharmonic passages are a common device for Schubert,¹⁵ whose purpose in using such harmony seems to be to widen the listener's tonal perspective, offering a 360° view of the harmonic landscape. Schubert's third enharmonic tour of the song (bars 141–164), not covered in Samarotto's analysis, is even more impressively panoramic.

Enharmonicism is not only important in Schubert's tonal plan as a temporal succession of keys, but also in the way it serves as a series of contexts for melodic material. Other analysts have noted a number of melodic enharmonic resonances enabled by the far-ranging succession of keys. Clark (2002; 2011a, 141–142) points to the shifting meaning of the C–C♯/D♭ semitone. The semitone just below this, B/C♭–C is also a point of especially strong rhetorical emphasis. Kramer (1995, 230–231) discusses this enharmonic linkage between the outer sections of the song, depicting the C–C♭ / B–C progression poetically as one of 'a pair of long, long appoggiaturas, chromatic sighs or moans of desire and gratification that have no one perceptual location but diffuse themselves everywhere' (1998, 124). Figure 12(a) lists the succession of harmonic states that this semitone appears in through the song. Figure 12(b) shows these in tonal space, where the stability of each note is determined by its distance from the context and the qualia of unstable notes determined by their direction from the context. In many of the contexts (A♭, C, and E), the notes are triadically central but vary in diatonic status. In C♭ major they are both on the subdominant side, with C♭ central and C♯ an unstable secondary leading tone (diatonically above). In F major, they are both on the dominant side and C is central where B is an unstable secondary leading tone. In G♭ major neither are stable, and they are split such that C♭ is oriented from the left (as upper neighbour to $\hat{3}$) and C♯ from the right (as chromatic lower neighbour to $\hat{5}$).

In the initial tonal context of A♭ major, C is stable at the sharp side of the tonic chord. The B–C interval appears first as a chromatic semitone, C–C♭, in the shift to the parallel minor of bar 25. This accompanies the words "Sich an mein Herz drängt / Deiner ewigen Wärme / Heilig Gefühl." ("The holy feeling of your eternal warmth presses itself upon my heart.") with the C♭ clearly representing the feeling of warmth. This is a crucial moment in setting the tonal agenda of the piece, motivated by the first description of bodily connection between Ganymed and his natural environment (the warmth of the spring sunshine penetrating his breast).

(a)

¹⁵ As in the *Notturmo* for Piano Trio, discussed in Yust (2013)

Meas. 1 25 29 31 41 44 50 66 72 79/98 90/104
108/115



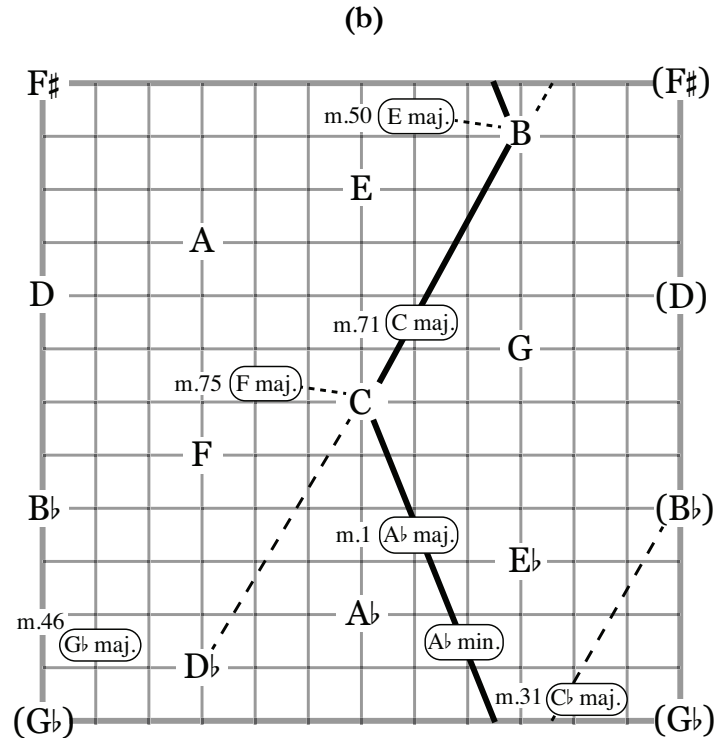


Figure 12: (a) The B–C semitone in different tonal contexts. Open noteheads highlight the common pitch-classes, while stems indicate contextual stability and slurs show shared triadic orbits. (b) These relationships in tonal space. Short-dashed lines show where the pitch-classes are central to a context, and long-dashed lines show the triadically split relationship that occurs in G♭ major.

The pitch-class C♭ is introduced as a stable element. Only in the initial key of A♭ do both pitch classes (B and C) serve as stable elements. As Ganymede longs from the embrace of Springtime, and we witness him lying in the grass achieving a fullness of corporeal experience of each element of his environment, the C♯ becomes a highly unstable element, an upwards-resolving leading tone. This happens first with the modulation to C♭ major where C♯ resolves upwards to D♭ in the next triadic orbit above in the long melisma on “unendliche [schöne!]” (“endless [beauty!]”), a moment that Clark (2002, 236–237; 2011a, 141–142) finds especially striking, shown in Figure 13. The key of G♭ major, which appears at the line “Und deine Blumen, dein Gras drängen sich an mein Herz” (“And your blooms, your grass, press upon my heart”) just before the key signature change, is the only context in which C♭ and C♯ are separated to the left and right of the tonal context. The C♭–B♭ resolution appears in the melody (“dein Blumen, dein Gras”) but the C♯ is consigned exclusively to another voice, the bass of the vii^{o7}/V predominant of bar 44—thus separated in register and instrumentation as well as, more abstractly, by triadic orbit.

Figure 13 shows a musical score for 'Ganymed' bars 27-31. The top staff is the vocal line, starting at bar 27, with lyrics 'un- end- liche Schö- ne!' and a melisma 'C - D \flat ' above it. The piano accompaniment is in the right hand, with dynamics 'f', 'cresc.', and 'p' indicated. The key signature is three flats (E-flat major/C minor).

Figure 13: ‘Ganymed’ bars 27–31

Pitch class B \natural /C \flat remains contextually stable for most of the middle part of the song, excepting the brief passage in G \flat major. First it is the tonic of C \flat major, then the fifth of E major. The sensuous experiences described throughout this part of the song involve especially touch (warmth, embrace, pressing against the grass and flowers, cool breezes) with a hint of the visual (the brightness of the morning), but the image reserved for last is an auditory one: the nightingale, whose song, in Schubert’s rendering, begins with a trilled B (see Fig. 14). The C \natural , though it plays a small but noticeable role in first establishing the E major tonal area in bar 49, is entirely absent for a considerable portion of this music. The nightingale’s song is the medium by which it is reintroduced, and after having disappeared from above (in the sense of sharpward), it now re-emerges from the flat side, the direction of parallel minors. This occurs in the mode shift of the piano interlude (bars 65–67) that prepares the crucial modulation, as noted above. This exact move (to a parallel minor) was the original source, in fact, of the C \flat , representing the warmth of the sun-soaked earth. After having entered the C \flat /B-centred state of corporeal experience, the C re-appears from a direction opposite the one to which it departed, adopting the sense of minor agent that previously belonged to C \flat upon its first appearance.

Figure 14 shows a musical score for the nightingale song from bars 56-7 of 'Ganymed' (piano right hand). It features a trill on a B note followed by a melodic line.

Figure 14: The nightingale song from bars 56–7 of ‘Ganymed’ (piano right hand)

At the moment where it first reappears, C has the sense of something triadically unstable in its tonal context, a $b\hat{6}$. But as the essential turning point of the drama approaches the pace of events quickens. Schubert reverses the triadic orientation of the B–C semitone to make C the stable element in a harmonically remarkable way at the dramatic crux of the song, “Ich komm?! Ich komme! / Ach! Wohin?”, discussed in the previous section and shown in Figure 1. The progression from an E minor $\frac{9}{4}$ chord to a root position C major

chord involves just a single semitonal voice leading in the bass, B–C, which is $\hat{5}$ – $\hat{6}$ in the key of E minor.¹⁶

The progression of tonal contexts, from A \flat major/minor to E minor, then C major, transform the enharmonic orientation of the B–C semitone from chromatic (C flatward to C \flat) to diatonic (C sharpward to B). The last move, to F major for the final section of the song, removes the pitch-class B from the basic scale, in place of B \flat . However, the B natural remains a prominent chromatic element of the melodic line, particularly at “Es schweben die Wolken / Abwärts” (the clouds are leaning downwards), and in the final cadence at “Alliebender Vater!” (All-loving Father!) shown in Figure 15. The B–C interval remains a diatonic semitone, but the instability, and therefore the upwards-yearning character, of B is enhanced by its chromatic status—its sharpward distance from the tonal context. The enharmonic transformation of this semitone is central to Schubert’s harmonic plan in the song (and similarly to semitone intervals in many of his works) because these chromatic qualia are so full of directly sensible meaning.¹⁷ In the A \flat context, the C \flat has a deep feeling of softness and tenderness, perfectly expressive of the idea that the warmth of the sun-soaked earth is also the warmth of love. In the F major context, the chromatic B has an irresistible upward pull that immediately produces a feeling of intense yearning, well suited for the representation of Ganymed’s powerful and upward-directed desire to be united with God through His creation. The brilliant feature of this sensuous text-painting is that the C \flat and B, the warmth of earthly love and the yearning for heavenly embrace, are one in the same pitch, and the B longs to return exactly to the place from which the C \flat departed, to C, though through an entirely different path. The song narrates the harmonic metamorphosis of this semitone, from one kind of interval to another, as a symbol for Ganymede’s metamorphosis from simple shepherd to celestial servant.

¹⁶ Schubert’s modulations can often be profitably understood in the way suggested here, as ways of recontextualizing a hermeneutically charged semitone, often as a chromatic semitone in one context and as a diatonic semitone in another. (See, for example, the analysis of the Trio from Schubert’s String Quintet, D.956 in Yust 2015b). These recontextualizations often involve $\flat 6$ and $\hat{7}$, since $\flat 6$ is the furthest flatward element of the basic major/minor system, and $\flat 7$ its furthest sharpward element. This, I propose, is the source of the pattern that Laitz (1992) identifies as Schubert’s ‘submediant complex’ and is evident in a number of his examples such as ‘Auf der Donau’ (D.553), ‘Die Liebe hat Gelogen’ (D.751), ‘Beim Winde’ (D.669), and ‘Am Fenster’ (D.878). In ‘Ganymed’, C is $\flat \hat{6}$ with respect to E major and B is $\hat{7}$ in C major, central keys of the tonal plan.

¹⁷ Compare the analysis of ‘Das Heimweh’ in Yust 2018, Ch. 10, and, for an instrumental example, the analysis of the Scherzo-Trio of the String Quintet in Yust 2015b, 158–165.

106

B - C

All- lie- bender Va- ter!

ff

p

Figure 15: ‘Ganymed’, bars 106–109

(4) Beethoven and Goethe

The reference to Beethoven that Schubert places midway through ‘Ganymed’ is a key to a deeper understanding of the song’s tonal plan and Schubert’s musical interpretation of Goethe’s text. I previously described the modulation in bars 70–71 as the dramatic crux of the song. It is the moment of transfiguration in the text, the moment where Ganymede’s spiritual ecstasy is externalized as a literal motion through space, engendering first a spatial confusion (“Wohin?”) and then a clear sense of direction (“Hinauf!”). It is similarly a crux of the tonal plan: the magical modulation from E major to C major is the moment in Figure 11 where the present tonal context is closer to the initial context (A \flat major) on the sharp side (above) rather than the flat side. What Schubert may have noticed about Goethe’s text is that he leads into the moment of transfiguration with a series of pieces of natural imagery (blossoms, cool grass, morning wind), the last of which is the nightingale song, a common symbol for the beauty of music. Hence Schubert, a composer undoubtedly fond of writing songs about the beauty and power of music, may have taken a special interest in this subtle implication in the poem, that it is ultimately nature’s music that is the agent of Ganymede’s transmigration.

The way that Schubert introduces the motive from Beethoven’s ‘Waldstein’ sonata, in bar 60 of the song, shown in Figure 1, is noteworthy. First, it does not seem to emerge naturally, but instead intrudes upon a different motivic process—the development of the arpeggiation motive into a birdsong figure (see Fig. 14)—to which it is musically unrelated (except that it might also be taken to signify the nightingale’s song). The characteristic rhythmic and contour features of the Waldstein motive have no precedent in the piece up to that point. Schubert, as many of his works amply demonstrate, was fully capable of writing great music with a high degree of motivic integration, the kind of style associated with Beethoven. The singular lack of motivic preparation for the Waldstein music therefore stands out, expressing the sense of Beethoven’s music as an intruder upon Ganymede’s idyllic landscape. That effect suggests an interpretation of the text where the crucial moment is one where birdsong suddenly begins to sound not like birdsong, but like Beethoven. Zeus’s conveyance of Ganymede to celestial realms is therefore a metaphor for the spiritual exultation produced by exquisite music. Schubert’s denotator for transcendently beautiful music, an iconic middle-period piano sonata of Beethoven’s, is a predictable choice,

considering his veneration of the elder composer.¹⁸ (Incidentally, the Waldstein motive does not actually resemble a real nightingale's song in any meaningful way. This is art imitating art, not nature.)

Schubert's use of the 'Waldstein' is also an isolated quotation. A closer look shows that aspects of Beethoven's piano sonata permeate the song, deepening the significance of Beethoven's music as an agent of transfiguration. Thus, much about the remarkable ending of this song, including the unusual tonal features that have interested analysts as well as the objectification of strophic form described in Kramer's (1995) interpretation, is done in the spiritual presence of a Beethoven piano sonata.

The other distinctive part of Beethoven's main theme, the driving quavers ascending in parallel thirds, is also present in 'Ganymed'. Schubert introduces them, in a notable shift of rhythmic feel underscoring the birdsong in bars 56–59 of 'Ganymed', to prepare the appearance of the Waldstein motive. But as a quotation, Schubert's melodic line comes most directly from the bars 20–21 of the 'Waldstein', in the transition, reproduced in Figure 16. Beethoven uses a dissolving consequent (i.e., a modulating recomposition of the main theme) for his transition, establishing a sense of motivic coherence typical of his sonatas. The chromatic alteration of the motive at this moment in the piano sonata is what secures the unusual subordinate key (III[#]) for which the piece is famous.¹⁹ It also participates in a larger stepwise ascent that begins with the sequence of the main theme first phrase, from bars 14–17 in C to bars 18–21 up a step in D minor. The progression in bars 20–21 construes the A minor chord from the sequence as predominant to go up another step to the dominant of the goal subordinate key of E major. Schubert's quotation in bars 60–64 of 'Ganymed' reproduces not only the motive itself, but also this characteristic chromaticized ascending progression, which is associated with it throughout the sonata (particularly in the development and coda). The second part of his quotation, bars 64–67, uses the other characteristic harmonic progression that is associated with the motive throughout Beethoven's sonata, the chromatic bass descent of the main theme (Fig. 1b). In particular, this chromatic descent produces a IV⁶–iv⁶ progression in bars 7–8 of the sonata, exactly the progression that Schubert uses in bars 64–67 to shift mode to prepare the crucial

¹⁸ Gibbs (2003) provides evidence that Schubert's idolization of Beethoven goes at least back to his student days, and Gingerich (2014) demonstrates that Schubert's late instrumental music was written heavily in the shadow, both artistically and professionally, of Beethoven's accomplishments in the genres of piano sonata, string quartet, and symphony. According to Gingerich's argument, Schubert should have been more comfortable taking on Beethoven as a peer through the medium of song, particularly at the relatively early date of 1817. Thus it is plausible, as I contend below, that 'Ganymed' serves not only as homage, but critique of Beethoven's legacy in instrumental music, made possible only within the formal context of song.

¹⁹ Beethoven used non-standard subordinate keys, particularly the submediant, mediant, and their parallel majors, in a number of works of this period, starting with the Op. 29 String Quintet of 1801. Op. 53, in 1803, is one of the earliest instances and is distinguished as the first to have a subordinate theme group entirely in the chromatic (major-mode) form of the mediant key through the main cadence. For a complete overview of Beethoven's non-standard subordinate keys, see Yust 2018, Ch. 12.

modulation. The same thing occurs, more suddenly, when the motive returns at the beginning of Beethoven’s development section (bars 91–92).

The image shows a musical score for Beethoven's Op. 53, transition, bars 20–23. It consists of three systems of music. The first system (bars 13–16) is marked *pp* and features a steady eighth-note accompaniment in the bass and a melodic line in the treble. The second system (bars 16–19) continues the piano introduction with similar textures. The third system (bars 20–23) shows a transition with a *cresc.* in the bass and a *p* dynamic in the treble. Chord symbols are provided below the bass staff: *e: iv⁶*, *It⁶*, and *V*.

Figure 16: Beethoven, Op. 53, transition, bars 20–23

Schubert draws not only from Beethoven’s main theme but also his use of the motive throughout the movement. The modal mixture of Beethoven’s main theme prefigures more extensive use of this technique in the development and, most significantly, to initiate the impressive coda, shown in Figure 17. The ascending stepwise treatment in bars 62–65 of ‘Ganymed’ also relates most explicitly to Beethoven’s coda, bars 248–258 and 266–275. In fact, Schubert’s distillation of elements of Beethoven’s piece demonstrate how the coda realizes latent elements of the material presented at the outset of the work—we might even view Schubert’s quotation as not only an homage but a sort of analysis of Beethoven’s sonata. Beethoven prompts the coda with a tonal disruption through the following procedure: (1) introduce an element of modal mixture, (2) repeat the retransitional ‘overshoot’ that led into the development, which changes the key from C major/minor to F major/minor, (3) reinterpret the result of a deceptive cadence as a new tonic. The entire process amounts to a change of key by ascending half-step. Schubert enacts this same procedure at the crucial formal threshold of ‘Ganymed’ in Figure 1(a), following the same steps but in a slightly different order: (1) Modal change (to E minor, “ich komme!”), (2) reinterpret the result of a deceptive motion (to C) as a new tonic, then (3) convert C major to a dominant, leading to the key of F major, a half step up. The key changes (from E to C and then F) turn out to be part of a more extended 5–6 pattern operating across the entire tonal plan.

(... Subordinate theme)
 Cadential

Sequential transposition to F

Mode shift to F minor

242

cresc. - - - *p* *cresc.* - - - *p* *cresc.* - - - *p*

Deceptive resolution: Coda

248

f *p*

253

f *sf* *sf* *sf* *sf* *ff*

5—6 5—6 5—6 5—6

Figure 17: Beethoven, Op. 53, coda, bars 242–256

The previous section noted the ascending sequence that directly follows the Waldstein-triggered transmigration (bars 74–78), which we now recognize as the 5–6 pattern adopted from Beethoven’s sonata. In fact, from this point onward in the song, this 5–6 pattern saturates the music, driving towards the song’s final apotheosis at “Mir! Mir! / In eurem Schoosse aufwärts! / Umfangend umfängen!” (which occurs twice, in bars 85–89 and intensified in bars 100–103). Similar patterns underpin the overall tonal plan of the song, which reinforces the sense of this final section (Kramer’s [1995] objectified strophic form) as apotheosis, the outward realization of a pattern latent in the preceding material, much as the appearance of Zeus externalizes the more figurative nature-love of Goethe’s first stanza.

Figure 18 shows how harmonic 5–6 patterns form the basis of the song’s modulatory plan at two levels. A pattern determining the succession of keys begins from the dominant of $A\flat$ ($E\flat$ – $B\flat$). Each element is related to the previous one by a single ascending diatonic semitone, first to $E\flat$ – $C\flat$ ($C\flat$ major), then to $F\flat$ – $C\flat = E$ – B (E major), then E – C (C major) and finally F – C (F major). The overall progression, impressively, amounts to a two-semitone ascent from $E\flat$ to F , and this, when reckoned from the initial tonic of $A\flat$, creates another, deeper, 5–6 progression that spans the entire piece, from $A\flat$ – $E\flat$ to A – F , where a chromatic alteration ($A\flat$ – $A\sharp$) occurs in coordination with the 5–6 move, precisely as happens in the more local ascending 5–6 sequences in the last part of the song, and in the ‘Waldstein’ transition and coda. The two patterns are shown in tonal space in Figure 18(b). They move in opposite diatonic directions, the more local pattern by ascending diatonic semitones (diatonically flatward), and the global pattern by ascending whole tone (diatonically sharpward), but ultimately meet up, give or take one enharmonic cycle, at the same place at F major. Triadically both patterns ascend, and in so doing what begin as tonic ($A\flat$ – $E\flat$) and dominant ($E\flat$ – $B\flat$) fifths magically unite in a single F major tonic, hovering in a subdominant region above the earthly $A\flat$ of the opening.

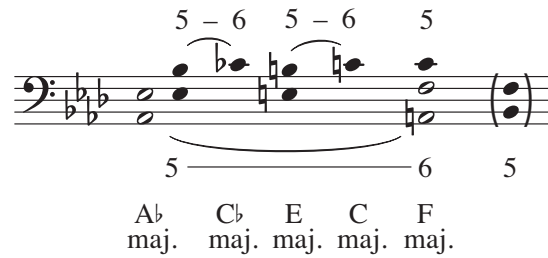


Figure 18(a): Schubert's harmonic plan as embedded 5–6 patterns

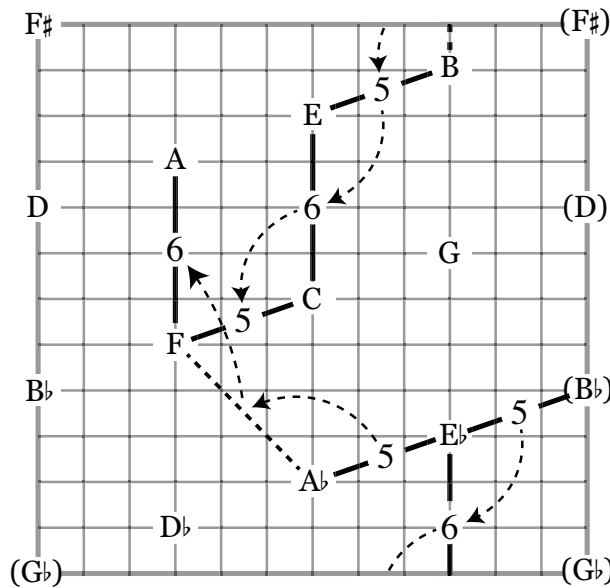


Figure 18(b): The 5–6 patterns of 'Ganymed' in tonal space

Damschroder (2010, 135–141) neglects the large scale 5–6 progression in his analysis of 'Ganymed' even though he has elsewhere shown it to be pervasive in Schubert's harmonic language (2006, 2010, 44–52, 149–158). The omission results from the fact that Damschroder's large-scale analysis prioritizes the G \flat major cadence in bar 46 over the preceding C \flat major and the following E major (= F \flat major), going against the intuition of both Kramer (1998, 123) and Clark (2002, 243), who detect a structural priority for C \flat major. Damschroder's prioritizing of G \flat major, though it requires some analytical contortionism in connecting the A \flat major tonic directly to the predominant harmony of the G \flat major cadence (bar 44) over the intervening C \flat major cadence, makes sense in that bar 46 marks an evident formal division in the piece.²⁰ Yet the compulsion to coordinate the formal structure and

²⁰ A four-bar interlude and change of key signature suggest a major formal break here. However, it is notable that the C \flat major cadence actually marks the first stanza break of the poem and introduces a new more independent piano right-hand texture which continues in

tonal structure in this way is a fault of the Schenkerian need for chords to stand in for keys (as explained in part 1 above). The keys are tonal contexts that occupy spans of music, and cannot always be reliably equated with specific harmonic events (such as cadential goals). The key of C \flat major is more important in the tonal plan because G \flat major refers back to it (as its dominant) as does the key of F \flat major immediately following the formal break. In other words, as a context C \flat major reaches out farther to link up more elements of the tonal plan, even though it does not have a significant tonic representative chord at or near the major formal division in bar 46.

As I pointed out in the previous section, a tonal plan is more than just a journey, it also plays a crucial role as a series of contexts for the melodic and harmonic material. One striking feature of ‘Ganymed’ is that, while the tonal plan is wide-ranging, the vocal tessitura is fairly static and relatively narrow over the entire course of the piece. The stability of the vocal melody therefore provides an anchor that unifies the otherwise untethered progression of keys. This is a familiar technique of Schubert’s, to thread distant keys by means of common tones and melodic ideas that repeat at the same registral position by inflecting to fit new contexts rather than transposing. Nice examples include the contrasting part of the main theme in the B \flat major (D.960) Piano Sonata and the song ‘Die Sterne’, both discussed by Kopp (2002), the *Valse sentimentale* D.779 analyzed by Hook (2008), and ‘Trost’ (D.523) and ‘Gretchens Bitte’ (D.564), analyzed by Clark (2011b).

The vocal melody throughout highlights the elements of the ascending 5–6 patterns through the boundary points of its most salient melodic motions in each section of the song, as illustrated in Figure 19. Schubert places the E \flat –E \sharp –F strand, however, at the top of the range, so that the more local enharmonic pattern consists of alternating fourths and thirds rather than fifths and sixths, and the large-scale 5–6 motion by whole step is in the usual 5–6 orientation. He puts particularly marked emphasis on these two crucial intervals in the outer parts of the song. The first section, as Figure 20 shows, juxtaposes isolated high E \flat s with the tonic cadential goal of A \flat , and also teasingly hints at the 5–6 motion with its prominent use of upper-neighbour Fs. After modulating away from A \flat , Schubert carefully avoids any registral space above the E \flat –E \sharp line of the enharmonic 5–6 progression in the vocal part until he gets to the final key of F major, where the singer once again reaches F at “Hinauf strebt’s, hinauf!” and touches it again, irresistibly leaping away from the neighbour figure, in the melisma on ‘die Wolken neigen sich’. The long sequential ascent that sets “Mir! Mir! In eurem Schoosse aufwärts! Umfangend umfangen!” then outlines the A–F sixth in a single extended gesture, which is repeated with added chromatic intensity in bars 100–103. The oddly forceful tonicization of B \flat (Clark [2011a, 138] notes ‘touches of the subdominant’ here) that follows each of these long ascending gestures, setting ‘Aufwärts an deinem Busen’, continues the ascending 5–6 pattern one more step (from A–F to B \flat –F). The subdominant emphasis is significant in confirming the finality of F major by encircling it (embracing it?) in the triadic dimension. It also underscores the important function of B \flat in softening the chromatic urge of the B \sharp , providing relief for Ganymede’s intense longing.

bars 50–55. Thym and Fehn (2010) nonetheless interpret this passage as a contradiction of Goethe’s poetic structure (i.e., they locate the main formal break at bar 46).

Meas. 9 18 20 24 27 31 52 54 56 61 64 70 73 75 77 (78/117)

Wärme Schöne Morgenwind Nachtigal Komme! Wohin? Hinauf! Mir!

Figure 19: A summary of intervals prominently outlined in the vocal part of the song.

du rings mich an- glüh'st, Früh- ling Gelieb- ter!

Figure 20: 'Ganymed', bars 13–18

Schubert references the other unforgettable feature of Beethoven's sonata, its heavenly secondary theme, at the climax of this last section, with the words "Alliebender Vater!" ("All-loving father!"), as shown in Figure 21. We can identify at least three significant features that secure the connection. First, Schubert's texture here has the same stopping-time effect as Beethoven's, by suddenly shifting to all half- and quarter-note values in a texture that has proceeded in relentless quavers since the beginning of the 'Waldstein' quotation in bar 56.²¹ Second, the rhythm and contour of its first and third bar are exactly the same as the rhythm of Beethoven's first two bars—in that sense it is an expansion of Beethoven's thematic idea through a one-bar insertion, which becomes a three-bar insertion the next time around in bars 106–116. Finally, the scale-degree statuses of the melodic notes are the same, from Beethoven's first two bars to Schubert's first and third, but reversed in order: $\hat{3}-\hat{2}-\hat{1}$ | $\hat{7}-\hat{6}$ becomes $\hat{1}-\hat{7}-\hat{6}$ | . . . | $\hat{3}-\hat{2}$, with the $\hat{7}-\hat{6}$ step being the distinctive feature.

²¹ Thym and Fehn (2010), though they do not note the Beethoven reference, make a distinct point of how 'the perpetual eighth-note motion [. . .] becomes the driving force and unifying factor of the finale' (274). Similarly, Clark (2002) refers to the music at 'Alliebender Vater' as 'materializ[ing] suddenly as if in suspended animation' (233). Both comments would apply equally well to the main theme and subordinate theme of the 'Waldstein'.

Figure 21: A comparison of Beethoven's secondary theme to the climax of 'Ganymed'

A fourth, deeper connection of this idea to Beethoven's secondary theme is its tonal relationship to the implied home key. It is the uncannily major tonality of this theme that conjures the ethereal atmosphere of angelic singing in Beethoven's sonata. The tonal relationship of Schubert's final verses, in F major, to his starting point, in A \flat major, has the same property: it is a major-mode parallel to a closely-related minor (the submediant). In fact, it is precisely the same relationship as in Beethoven's recapitulation between the main theme (C major) and the beginning of the secondary theme (A major). The crucial difference, of course, is that Beethoven comes right back to earth, whereas Ganymede's heavenward journey is irreversible. Another important difference is Schubert's less direct route to the major submediant key, going the long way (flatward) around the circle of fifths. In the 'Waldstein' the move from A \flat major to F major is unambiguously sharpward, achieved by means of a shift to the parallel major from the mediant that occurs at the critical moment initiating the second theme, whose choral textures unmistakably connote an ascent to heavenly realms full of angelic harmonies. Schubert offers an ingenious—one might even say devilishly ingenious—twist on this familiar trope: Ganymed arrives at heaven not by going up, but by going *down*, towards the earth. He uses Goethe to make homage to Beethoven and at the same time to critique his transcendent middle-period aesthetic. If we are to understand Beethoven's music as divine, we may also understand Schubert as effecting a spiritual union with Beethoven in the song—but one that has a distinctively subversive element. Schubert thus is not simply making homage to Beethoven; he is using him to secure the celestial connotations of his concluding strains, and then pulling the essential sonata-form features out from under the material and upending Beethoven's famously heroic rhetoric with his use of enharmonicism.

The conceit of Schubert's tonal plan, to arrive at a heavenly key via travel in an entirely earthly direction, demonstrates an appreciation for the core idea of Goethe's poem and further evidence, if such was needed, of Schubert's literary discernment and his unique deftness in translating poetic ideas into musical ones. Goethe's poem is indeed transgressive but more fundamentally against religious norms than sexual ones. The poem celebrates pantheism, the unity of God and Nature, and its sexualized language is part of Goethe's strategy for representing the earthly passions that transport Ganymed into divine realms.²²

²² For more on the significance of this poem and Schubert's setting in the cultural and literary context of their time, see Byrne 2003, 78–98.

Schubert seems to recognize the basic thrust of the poem as a challenge to Christian dogma, how it turns the ethereal purity of Biblical heaven on its head, and ingeniously uses enharmonicism to write a song that similarly puts musical space in a surprising and transgressive orientation.

‘Ganymed’ is undoubtedly a special song. The composer himself acknowledged as much by including it in his dedication to Goethe, the three songs of Op. 19. Yet it is also in many ways typical of the musical and artistic concerns woven through much of Schubert’s *oeuvre*. It exemplifies harmonic tropes that start to appear very familiar the more of Schubert’s music one looks at, and its fixation on the twin musical and literary heroes of Schubert’s generation, Beethoven and Goethe, are also an *idée fixe* that is never too far away wherever one roams through the landscape of Schubert’s music. These features, the Beethoven reference, the deeply embedded ascending 5–6 patterns, the enharmonicism, are, I have argued here, not incidental but are central to the artistic conception of the piece. The song has also served here as an ideal vehicle for exploring theoretical issues of broader significance, the value of spatial reasoning to understanding tonal harmony. Harmonic spaces provide, in particular, needed perspective on underlying issues in conceptions of tonal hierarchy and of musical keys as objects. Schubert may have been the first composer to systematically exploit the full range of expressive possibilities offered by the topology of harmony inherent to the tonal system. For that reason, his music is invaluable to theorists, and its historical importance in laying the groundwork of nineteenth-century harmony is similarly inestimable.

References

- Amiot, Emmanuel, 2013: 'The Torii of Phases', in Jason Yust, Jonathan Wild, and John Ashley Burgoyne (eds), *Mathematics and Computation in Music: 4th International Conference, MCM 2013* (Heidelberg: Springer), pp. 1–18.
- , 2016: *Music through Fourier Space: Discrete Fourier Transform in Music Theory* (Heidelberg: Springer).
- Arthur, Claire, 2016: 'When the Leading Tone Doesn't Lead: Musical Qualia in Context' (DPhil Diss., Ohio State University).
- Byrne, Lorraine, 2003: *Schubert's Goethe Settings* (Aldershot: Ashgate).
- Clark, Suzannah, 2002: 'Schubert, Theory and Analysis', *Music Analysis*, 21/ii, pp. 209–244.
- , 2011a: *Analyzing Schubert* (New York: Cambridge University Press).
- , 2011b: 'On the Imagination of Tone in Schubert *Liedesend* (D473), *Trost* (D523), and *Gretchen's Bitte* (D564)', in Edward Gollin and Alexander Rehding (eds), *The Oxford Handbook of Neo-Riemannian Music Theories* (New York: Oxford University Press), pp. 249–321.
- Clough, John, and Jack Douthett, 1991: 'Maximally Even Sets', *Journal of Music Theory*, 35/i–ii, pp. 93–173.
- Cohn, Richard, 1996: 'Maximally Smooth Cycles, Hexatonic Systems, and the Analysis of Late-Romantic Triadic Progressions', *Music Analysis*, 15/i, pp. 1–66.
- , 2011: *Audacious Euphony: Chromaticism and the Triad's Second Nature* (New York: Oxford University Press).
- Cohn, Richard and Dempster, Douglas, 1992: 'Hierarchical Unity, Plural Unities: Towards a Reconciliation', in Katherine Bergeson and Philip V. Bohlman (eds), *Disciplining Music: Musicology and its Canons* (Chicago: University of Chicago Press), pp. 156–181.
- Damschroder, David, 2006: 'Schubert, Chromaticism, and the Ascending 5–6 Sequence', *Journal of Music Theory*, 50/ii, pp. 253–275.
- , 2010: *Harmony in Schubert* (Cambridge, Eng.: Cambridge University Press).
- Douthett, Jack and Steinbach, Peter, 1998: 'Parsimonious Graphs: A Study in Parsimony, Contextual Transformations, and Modes of Limited Transposition', *Journal of Music Theory* 42/ii, pp. 241–63.
- Gibbs, Christopher H., 2003: 'Writing under the Influence: Salieri and Schubert's Early Opinion of Beethoven', *Current Musicology*, 75, pp. 117–144.
- Gingerich, John M., 2014: *Schubert's Beethoven Project* (New York: Cambridge University Press).

- Harrison, Daniel, 1994: *Harmonic Function in Chromatic Music: A Renewed Dualist Theory and Account of its Precedents* (Chicago: University of Chicago Press).
- , 2002: ‘Nonconformist Notions of Nineteenth-Century Enharmonicism’, *Music Analysis*, 21/ii, pp. 115–160.
- Head, Matthew, 2002: ‘Schubert, Kramer, and Musical Meaning’, *Music and Letters* 83/iii, pp. 426–37.
- Hook, Julian, 2008: ‘Signature transformations’, in Martha Hyde and Charles Smith (eds) *Music Theory and Mathematics: Chords, Collections, and Transformations* (Rochester: Univ. of Rochester Press), pp. 137–160.
- Huron, David, 2008: *Sweet Anticipation: Music and the Psychology of Expectation* (New York: Bradford Books).
- Jackson, Timothy, 2006: ‘Hinauf Strebt’: Song Study with Carl Schachter’, in L. Poundie Burstein and David Gagné (eds), *Structure and Meaning in Tonal Music: Festschrift in Honor of Carl Schachter* (Hillsdale, NY: Pendragon), pp. 191–202.
- Kopp, David, 2002: *Chromatic Transformations in Nineteenth-Century Music* (Cambridge, Eng.: Cambridge University Press).
- Kramer, Lawrence, 1995: ‘The Schubert Lied: Romantic Form and Romantic Consciousness’, in Walter Frisch (ed.), *Schubert: Critical and Analytical Studies* (Lincoln, Neb.: University of Nebraska Press.), pp. 200–236.
- , 1998: *Franz Schubert: Sexuality, Subjectivity, Song* (Cambridge, Eng.: Cambridge Univ. Press).
- Krebs, Harald, 1981: ‘Alternatives to Monotonicity in Early Nineteenth-Century Music’, *Journal of Music Theory*, 25/i, pp. 1–16.
- Krumhansl, Carol L. 1990: *The Cognitive Foundations of Musical Pitch* (New York: Oxford University Press).
- Krumhansl, Carol L., and Edward J. Kessler, 1982: ‘Tracing the Dynamic Changes in Perceived Tonal Organization in a Spatial Representation of Musical Keys’, *Psychological Review* 89/iv, pp. 334–368.
- Laitz, Steven, 1992: ‘Pitch-Class Motives in the Songs of Franz Schubert: The Submediant Complex’, PhD Diss., University of Rochester.
- Lambert, Sterling, 2009: ‘The Sea of Eternity’, in *Re-Reading Poetry: Schubert’s Multiple Settings of Goethe* (Woodbridge, Eng.: Boydell Press), pp. 34–58.
- Larson, Steve, 2004: ‘Musical Forces, Melodic Expectation: Comparing Computer Models with Experimental Results’, *Music Perception* 21, iv, 457–98.

- Larson, Steve, and Leigh VanHandel, 2005: 'Measuring Musical Forces', *Music Perception* 23/ii, pp. 119–36.
- Rings, Steven, 2011: *Tonality and Transformation* (New York: Oxford University Press).
- Samarotto, Frank, 'Intimate Immensity in Schubert's *The Shepherd on the Rock*', in L. Poundie Burstein and David Gagné (eds), *Structure and Meaning in Tonal Music: Festschrift in Honor of Carl Schachter* (Hillsdale, NY: Pendragon), pp. 203–226.
- Schachter, Carl, 1987: 'Analysis by Key: Another Look at Modulation', *Music Analysis*, 6/iii, pp. 289–318.
- Steinbron, Matthew James, 2011: 'Polyfocal Structures in Franz Schubert's Lieder' (DPhil diss., Louisiana State University).
- Thym, Jürgen, and Ann C. Fehn, 2010: 'Schubert's Strategies in Setting Free Verse', in Jürgen Thym (ed.) *Of Poetry and Song* (Rochester, NY: University of Rochester Press), pp. 261–280.
- Telesco, Paula, 2002: 'Forward-Looking Retrospection: Enharmonicism in the Classic Era', *Journal of Musicology*, 19/ii, pp. 332–73.
- Tymoczko, Dmitri, 2004: 'Scale networks and Debussy', *Journal of Music Theory*, 48/ii, pp. 215–292
- , 2011: *Geometry of Music: Harmony and Counterpoint in the Extended Common Practice* (New York: Oxford University Press).
- , 2013: 'Geometry and the Quest for Theoretical Generality', *Journal of Mathematics and Music* 7/ii, pp. 127–44.
- Yust, Jason, 2013: 'A Space for Inflections: Following up on *JMM*'s Special Issue on Mathematical Theories of Voice Leading', *Journal of Mathematics and Music* 7/iii, pp. 175–193.
- , 2015a: 'Distorted Continuity: Uniform Sequences and Quantized Voice Leadings', *Music Theory Spectrum* 37/i, pp. 120–43.
- , 2015b: 'Schubert's Harmonic Language and Fourier Phase Space', *Journal of Music Theory*, 59/1, pp. 121–81.
- , 2016: 'Special Collections: Renewing Set Theory', *Journal of Music Theory*, 60/ii, pp. 213–262.
- , 2017: 'Restoring the Structural Status of Keys through Fourier Phase Space', in Gabriel Pareyon, Silvia Pina-Romero, Octavio A. Agustín-Aquino, and Emilio Lluís-Puebla (eds) *The Musical-Mathematical Mind: Patterns and Transformations* (Heidelberg: Springer), pp. 329–338.

———, 2018: *Organized Time: Rhythm, Tonality, and Form* (New York: Oxford University Press).