Chapter 8

The Romantic Avant Garde and the Rumblings of Modernism

In this chapter, we will discuss some of the works of the Romantic *avant garde* through analyses of Chopin, Liszt and Debussy and concludes with a hint at some of the consequences their experiments engendered in the works of the Second Viennese School in the years before World War I..

The term *avant garde* is generally applied to those cutting-edge artists who force their craft — whether artistic, philosophical or cultural — beyond conventional boundaries. Of the composers of the Romantic period we have considered up to this point, all were driven to make their own special contributions to musical composition and, consequently, to the evolution of tonality. Beginning with Beethoven's middle period in the early decades of the nineteenth century, each of these artists, in his own unique fashion, pushed the prevailing tonal language to where a potential breaking point became a very real possibility. The harmonic, melodic, and, particularly, the chromatic innovations of works such as the "Waldstein" or "Appassionata" stimulated contemporary and succeeding generations of Romantic artists to seek further innovation within an already "distended" (as opposed to "disintegrating") chromatic tonality. Oddly enough, the harmonic innovations of nineteenth-century composers, most apparent in Beethoven's works, not only stretched the limits of tonal comprehension, but were, perhaps more significantly, taking place in the

very form that was conceived as the epitome of conventional tonal organization, that is, sonata form.

In the works of Schubert, Schumann, Chaikovsky and Brahms, we have seen not only the increasingly complicated interplay of the diatonic with the chromatic, but also the chromatic itself saturating the diatonic palette in ways that would have been considered unthinkable only a few years before, even though these composers are not generally considered to be *avant garde* — Schoenberg's reference to Brahms as a "progressive" challenged the then-conventional wisdom that had still counted him among the ranks of musical conservatives. However, with the arrival of a new group of composers in the early-to-mid-nineteenth century, we see the world of diatonically dominated composition plunged into a "crisis" — to borrow an apt term used by Ernst Kurth in reference to Wagner's *Tristan und Isolde* — from which it would never return.[1]

In Chapters 5 and 7 we analyzed works in sonata form written between approximately 1720 and 1900 utilizing a new theory of chromaticism that examines its influence on the developmental process. However, the composers we will now discuss have a more tenuous connection to that tradition. Although Chopin, Liszt and Debussy create compositions called "sonatas," these works do not necessarily hail from the *style galant* instrumental tradition with which we have been concerned. Rather, we now see

[1] Ernst Kurth, *Romantische Harmonik und ihre Krise in Wagners 'Tristan' (*Berlin: M. Hesse, 1923), trans. in part by Robert Bailey in *Richard Wagner*, 186–204. Also, see Alfred Lorenz, *Der musikalische Aufbau von Richard Wagners 'Tristan und Isolde'* (Berlin: Max Hesse, 1926, repr. 1966).

strong influences from vocal *genres*, particularly from the world of opera. For example, Chopin's general melodic style is beholden to the *bel canto* tradition of Rossini and Bellini; Liszt's sonatas, tone poems and concert etudes often have more than just a passing allegiance to the sonata-overtures of the operatic tradition. (A sonata-overture is similar to the sonata form we have discussed except that it lacks an appreciable development section, one that is often comprised of only a few transitional measures between the end of the exposition and the opening of the recapitulation; Mozart's overture to *The Marriage of Figaro* is an example.) Many of Debussy's impressionistic works, such as the *Prélude à l'après-midi d'un faune,* begin to blur the line between traditional sonata procedures and those that are operatically conceived, such as those found in short piano pieces in ternary forms. Consequently, the harmonic-area tensions and delicate balances of phrase structure that comprised the emotional aesthetic of sonata form, as discussed up to this point, no longer operate to the same degree in the works of the *avant garde* composers we will now address.

I. Liszt and Debussy: The Romantic Avant Garde and its Manifestation in Impressionism

The works of Franz Liszt (1811-1886) represent an important step in the evolution of nineteenth-century composition and Liszt himself might be viewed as the vehicle through which early Romanticism helped to create and then influence the *avant garde* of

the later nineteenth and early twentieth centuries. Very much affected by the music and physical artistry of Niccolò Paganini, a young Liszt set out to accomplish on the piano what Paganini had accomplished on the violin. Aside from opera's pervasive influence, Liszt's compositional inspirations came most apparently from Schubert and Hector Berlioz, although it is also self-evident that his late-boyhood meeting with Beethoven must have had a profound influence on him as did his early studies with Salieri and Czerny. Liszt created grandiose piano transcriptions and musical "reminiscences" of modern operas by composers such as Weber, Rossini and Wagner; he transcribed and played all of Beethoven's symphonies. Although his overt showmanship is held against him by music historians as proof of his severe extroversion and wild personal excesses (often while simultaneously congratulating him as the greatest pianist ever), we are more interested here in his contributions to the world of nineteenth-century composition. Liszt invented the symphonic poem (or "tone poem"), a one-movement programmatic work for orchestra based upon a significant personage or philosophical topic, and his developmental style was infused with thematic transformations and transpositions of melodic and harmonic material by equal subdivisions of the octave, particularly by major or minor thirds. These compositional techniques were no doubt influenced by works such as Schubert's *Wanderer Fantasy* and appear most evidently in his enormous one-movement Piano Sonata in B minor. In his old age, the consequences of his compositional experiments led him down paths that teetered on the edge of atonality with the use of octatonic scales and whole tone prolongations. It is quite probable that modern composers like Debussy and Béla Bartók

would have moved in far different directions had it not be for the influence of Franz Liszt.

"Un sospiro" is the third of three concert etudes that Liszt composed in 1848. It is typical of Liszt's middle-period piano compositions in terms of its mellifluous arpeggiations, its typical large-scale transpositions by intervals that equally subdivide the octave and, particularly, its technical difficulty. Our choice for its inclusion in this chapter has to do with the issues of melodic transformation and large-scale transpositions of subsections by major thirds, a consideration that has been already been well-documented by modern music theory. However, more importantly is the equal subdivision of the octave by minor thirds: this is the essential interval responsible for the organization of material in the background of the composition. As a corollary to the issue of equal subdivision by major or minor thirds are the problems of rampant enharmonicism inherent in any composition that composes out dissonant chordal sonorities on a grand scale. In this etude, the major thirds are composed out in a very obvious manner that we will explore below. On the other hand, the minor thirds are operational on a more subtle level: we will see how the alteration of F_ to Fβ in m. 18 is the key to understanding a series of questions raised by this simple modal shift from Dβ major to Dβ minor. We will discuss the issues raised by the major thirds first.

"Un sospiro" is only one of many examples in the nineteenth century that illustrates an interest on the part of composers towards increasing the level of chromatic density in their compositions. With regard to this etude, the issues of equal subdivision and how it is

expressed within the context of the theory of eleven-pitch tonal fields, the missing pitch, and the filling in of the tonic octave, diatonically (PDA) and chromatically (PCA) will inform the following discussion. Liszt still secures his most prominent, structural cadences with dominant—tonic progressions. However, influenced by Beethoven's middle- and late-periods compositions (and just about any large scale work of Schubert's), Liszt's harmonic language incorporates equal subdivisions of the octave, particularly the subdivisions of major or minor thirds. In "Un sospiro," the organizing element of the higher middleground is the major third. While the *A* section establishes and anchors the tonic, Dβ, the B_1 section is introduced with a short auxiliary cadence to A major in m. 22 and the B_2 section secures F major between mm. 30 and 34. Therefore, the most stable harmonic areas up to this moment have been Dβ major, A major and F major, a descending sequence of major thirds which arpeggiates an augmented triad. Equal subdivision of the octave is one typical characteristic of this period, a characteristic that would be exploited not only by Liszt, but by other *avant garde* composers as well, such as Richard Wagner. Although not associated with the music of the more conservative wing of Romanticism, one does not have to look extensively to find this characteristic also in the works of Schubert, Schumann and Brahms, all of whom have their own *avant garde* sides to their musical personalities. As the century progresses, equal subdivision becomes one of the issues that tears at the very fabric of triadic tonality. Eventually, these symmetrical formations, which in Liszt's early- and middle-period works occur in the middleground, will pervade the note-to-note activity of the immediate foreground as well. Later, with Debussy, we will see how chordal

symmetries can be harmonically defined and contrapuntally harnessed to a stable background which may or may not exhibit explicit triadic tonality, using “tonality” in the extended Beethoven-era sense of the term. The backdrop to this era of radical departure from more established and more conventional composition, one that culminates in the gradual dissolution of triadic tonality, is the constancy and continued development of procedures for filling-in the chromatically ascending tonic octave and the continued organization of surface events with the eleven notes of the tonic system. The shifting of the tonic system to its complements, organized by minor thirds or augmented seconds, and the symmetrical tritone division of the octave to anchor the tonic are still operational, even if the triad no longer has the organizational and, eventually, the structural status it once enjoyed.

The large-scale organization of "Un sospiro" is ternary; all formal divisions are outlined in Diagram 8.1. Notable is the thematic content of the opening period which shows the influence of *bel canto* opera in its phrase division, *a* - *a* - *b* (3 + 3 + 4 measures respectively), the first two *a* sections constituting a Rossinian "thematic block" (see Chapter 7). Also typical of Romantic thematic organization, "Un sospiro's" consistent phrase repetitions constitute a formal design element. In addition, Liszt's thematic transformations in which all the *B* themes of the extensive middle section are simple variations of the opening melody are typical. Harmonically, the *A* section secures Dβ major with a clear prolongation of the major tonic followed by an embellished counterstatement beginning in m. 12 and ends with the tonic transformed into its parallel minor in m. 18. A transitional phrase (*c*) occurs between m. 19 and 22. The most distinct attribute of the etude's *B* section, an extensive area composed of three thematically transformed subsections (labeled B_1 , B_2 *and* B_3), is Liszt's change of key signature: three sharps in m. 19 uproots the previous five flats, and three sharps are changed to four in m. 38; the Dβ major signature enters again only a measure before the return of tonic harmony in m. 53, which is the opening of the *A'* section. This section is relatively short, simply restating — as well as extending — the opening material, and then appending two codas to it, the first, a restatement of B_3, in m. 62 and the second in m. 70; the second coda functions as the coda's coda.

Main dyad conflicts: Dβ/D_, F_/Fβ, Gβ/G_, Aβ/A_, Bβ/B_

Form:	***A***						***C.S. embel.***				***trans.***		***B_1***					
	a	*a*	*b*		*a*	*a*				*c*								
Measure:	1	6	9	10		11	13	16	18	19	22	23		27		28	29			
Act Sys Pcs:									Fβ↘							G_↗	E_↗	Dβ↘	E_↗	Dβ↘
System:	5β								8β						5β	2β	5β	2β	5β	
PCA:	**Dβ(0)**											**D_(1)**						**Eβ(2)**	**E_(3)**	
PDA/*(SDA)*:	**Dβ**		**C**	**Bβ**		**Aβ**						**G#**		**F#**						
						└	─	─	─	┘										
Harmony:	I					V	I		I	i		V4/3 of βVI		IV6/4 of βVI		vii^{O}4/3 of III		III$^{\beta}$6/5		V$^{\beta 9}$/III

Form:	***B_2***		*(cadenza)*	***B_3*** *: dominant prep*					***retrans.***.
Measure:	30	35	37	38	42	43	44	45	46
ASPcs:		E_↗C#↗	A# ↗ (G_/A#)						
System:		2β 1#	4#						
PCA:	**F_(4)**	**F#(5)**	**F*x*(6)(=G_)**	**G#(7)**		**A_(8)**			
PDA/(*SDA***):**	**F_**			***(G#***	***F#***	***F_,***	***E_***	***D_, C_***	***B_, A_ G#)***
	└	─	─	─	─	─	─	─	─
Harmony:	III_			"V 8 —					— 7 „

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Diagram 8.1 – Liszt, *Trois études de concert,* "Allegro affettuoso (*Un sospiro*)"

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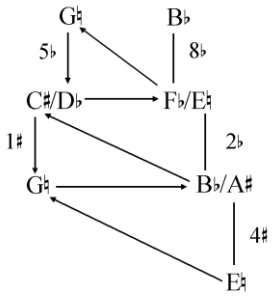
Referring to Diagram 8.1, note that the PCA does not begin its ascent until the transition to the *B* section is reached in m. 19. In fact, the first D_ (pc 1) enters dramatically within the unexpected key signature change to A major. At that point, the PDA has already descended to Aβ and, at m. 19, G#, the third of V 4/3 of A major, must be interpreted as an enharmonic reinterpretation of the PDA Aβ in m. 11. Therefore, the application of equal octave subdivision necessitates enharmonic respelling: in the period that prolongs A major, it is necessary that 1) the unfolding diatonic and chromatic octaves continue their respective descents and ascents even in the area of a local harmonic change to firmly integrate the new period into the whole composition, and that 2) the foreground melodic events in that new period be respelled to accommodate the local harmony.

There is one element that seems almost to conflict with the foreground appearance of A major, and that is what happens in m. 18 with the change of harmony from Dβ major to Dβ minor and the appearance of Fβ, a note that plunges the systems shift down into 8β, seemingly in the wrong direction for the upcoming "sharp key" period (see Figure 8.1).

Figure 8.1: 5β expanded system matrix



Therefore, while the local harmony has been recast as A major, Liszt's system shift implies that the entire expanse exists in the extremes of flat-sided tonality, at least on the background level of eleven pitch-class systems. Obviously, had Liszt wanted, Fβ could have been spelled as E_; granted, it would have appeared strange in a Dβ chord, but it would have made sense in light of the upcoming enharmonic respellings. Certainly, unusual chordal spellings had appeared around that time that were generally consistent with voice-leading melodic organization but which could be explained from the perspective of vertical spelling. (For example, the tiny, thirteen-and-a-half-measure

"Chopin", from Robert Schumann's *Carnival* incorporates what appears to be a passing second-inversion Bββ4/3 chord between a vi chord and a dominant seventh a measure later; however, the Bββ is spelled as A_to accommodate a rising chromatic line in the melody). With respect to vertical alignment, Liszt's spelling of the third of the chord as Fβ instead of E_ seems a reasonable choice, particularly since one of the primary dyad conflicts of the etude is F_/Fβ. Therefore, Liszt's chord spelling at the end of the *A* section begs the question whether the upcoming period in A major is *really* a conveniently renotated Bββ major or whether the notation means *exactly what it says*. (Of course, the next question ought to be, "Is there any way of answering the first question definitively?") The diagram indicates that the continuation of PDA Aβ in the *B* section is expressed as G# (m. 19). However, in m. 23, where Gβ would have been the "normal" notation of that pitch in a descending Dβ diatonic array, F# must take its place because of the surrounding harmony, and most certainly, notating the third of a D major 6/4 chord as Gβ would be unacceptable in an area of such breadth (Schumann just had to contend with a single measure appearing a bit odd!). We will return to the problems posed by the Fβ and motion into an 8β system later.

If we examine the ascending PCA, another chromatic issue arises between mm. 30 and 37. So far, we have been concerned with *dyad conflicts*, situations that crop up with different "versions" of a diatonic note. For example, in Chapter 5, we discussed four pairs of dyad conflicts: Dβ/D_, Bβ/B_, Aβ/A_ and, Gβ/G_that created opportunities for

developmental processes in Haydn's Symphony no. 84 in Eβ. As music evolves, we have seen that composers continue to use dyad conflict as an important tool both for development and compositional rationale through unity. However, with Liszt, we see the dyad conflicts expand into triad conflicts and even tetrad conflicts. In the opening of "Un sospiro," F_ enters as a note of the tonic chord; however, by the end of the first period, in m. 18, F_ is displaced by Fβ. In m. 30, pc 4 reenters as F_ (concurrent with the PDA F_ below it) and continues to pc 5 as F# in m. 35 and then pc 6 as F*x* in m. 37. Therefore, as the PCA ascends, we note that Liszt is focusing on variants of the diatonic F_, including Fβ and, as the etude continues, F# and even F*x*. Of course, dyad, triad and tetrad conflicts are associated with enharmonicism as well. In the cadenza at the end of m. 37, the previous F*x* is enharmonically presented as G_, that is, until the upcoming G# minor sonority enters in m. 38 where, at the end of the cadenza, pc 6 is respelled again as F*x*. Measure 38 also signals the beginning of a large-scale preparation of the structural dominant which occurs at retransition in m. 46. The G#sonority of m. 38 also signals the arrival at pc 7 and, again, instead of Aβ, G# must be used in its place. The remainder of the PCA returns to spelling that is consistent with a Dβ major chromatic octave ascent.

Liszt has other strategies for anchoring extended harmonic areas which is not under direct control of the tonic octave, but is an extension from it and, therefore, still associated with the tonic octave on a deeper structural level. From mm. 38 to 46, a phrase that prolongs G# major harmony while contrapuntally moving an upper register G# to F# (in the diagram, this is shown as "V 8-7"), Liszt presents a complete diatonic descent from the

PDA G#in m. 38 to a prominent G# in m.46. This lower level "Secondary Diatonic Array" (labeled "*SDA*" in the diagram and placed in parentheses to demonstrate the boundaries of the entire octave descent) and is yet another element of composition that will become more prevalent in the late-nineteenth century; we will also see this subordinate structure in the early twentieth century with Debussy's *Doctor Gradus ad Parnassum* as well as and his third *Estampe*, "Jardin sous la pluie," which, in addition, contains a prominent "Secondary *Chromatic* Array" *(SCA)*. In the Liszt diagram, notice that the notes of the SDA are not specifically those of a descending G# minor or major scale since Liszt has modally inflected the descending array to accommodate the local harmonies of the phrase. Since it is indefinite whether F# or F_ is the "correct" diatonic value of the seventh scale degree of the G# scale, both are present in the diagram.

The retransition between mm. 46 and 52 leads us back to Dβ major with the transformation of the G#7 into an Aβ7 (m. 52, cadenza, *"pp velocissimo"*), and with the arrival of the next PDA note, Eβ (the tenor voice of the dominant seventh, which is bracketed in the diagram to the F_ from m. 30). In m. 53, with the arrival of Dβ (pc 0), we have the first and only completion of the PCA. Diagram 8.1 depicts how the systems gradually return to 5βs after having reached 4#s in m. 37 with the F*x* discussed above: G_and Bβ as system-shift motivators, followed by Dβ afterwards, brings us back to a 5β system. When the *A'* section arrives in m. 53, we have returned to Dβ major and all high-level diatonic and chromatic arrays have ended their unfoldings. Even so, Liszt secures the *A'* section and its two codas by creating another *SDA* descent. This time, many of the notes

of a descending Dβ major scale are modally inflected in the first coda to create an octatonic scale with disjunct dorian tetrachords Dβ-Aβ and G_-D_. The second coda restates Dβ at *più lento* (m. 70). Curiously, in m. 73, a Bββ major chord enters and its fifth, Fβ, forces us back into the same 8β system that we saw at the termination of the *A* section in m. 18.

Just a quick word about octatonic scales. These scales of alternating half steps and whole steps (or alternating whole steps and half steps) are seen with increasing frequency as nineteenth-century composition begins to have a more tenuous relationship to traditional tonality. As mentioned before, the one we see in "Un sospiro" is a product of disjunct dorian tetrachords and are used in this manner, for example, in the twentieth century by Béla Bartók (particularly in his *44 Violin Duos*): since the dorian tetrachord is internally symmetrical, so is the scale created from two dorian tetrachords separated by a half step, that half step becoming the symmetrical axis around which the scale revolves. However, nineteenth/twentieth-century Russian composers such as Alexander Skryabin would use octatonic scales to organize entire (but short) compositions in the absence of any traditional guiding tonality as a scalar diminution of the diminished seventh chord (see, for example, his *Five Preludes for Piano*, op. 74): in fact, the octatonic scale can be created by juxtaposing the individual pitch classes of any two diminished seventh chords — which of the two is structural, of course, will depend upon the musical context. Following in the footsteps of Liszt, we will see Debussy's application of octatonicism in the third of his *Estampes*, "Jardin sous la pluie," also used as a scalar diminution of a diminished seventh chord. If we keep in mind that the triad, as a high-level organizational tool, gradually yields

to dissonant and symmetrical simultaneities as the nineteenth century progresses, then the increasing prevalence of these scalar and choral entities becomes the basis of a new normalcy within the ever-evolving chromatic language of the era. In "Un sospiro," the octatonic scale unfolded in the first coda is part of the prolongation of a diminished seventh chord from Dβ to Dβ with the intermediary chord tones Bβ-G_-E_, the notes present on the downbeats of mm. 67-69. The substitution of octatonic scale steps for Dβ major scale steps resuscitates some of the most important dyad conflicts of the etude so they can be resolved again in the second coda.

We can now return to the issue of Fβ, the missing pitch of the tonic 5β system, with regard to its significance in "Un sospiro." (You will recall that the first appearance of the Fβ was in m. 18, before Liszt changed key signatures from five flats to three sharps.) When m. 72 is reached in the second coda, we are in a 5β system. Significantly, the last six measures of the piece resurrect some of its most significant dyad conflicts: the Bββ chord in m. 73 recalls A major harmony of the first part of the *B* section, just as the F major triad, a measure before the end, recalls the second part of the *B* section. However, now with the A major sonority rewritten enharmonically as Bββ- Dβ-Fβ, the dyad conflict of Bβ/B_ is now expanded into a triad conflict Bββ/Bβ/B_. Therefore, the question concerning the earlier A major section as a convenient respelling of Bββ major returns. Also, the presence of Fβ, the missing pitch of the 5β system, brings us back down to an 8β system, an issue that Liszt might not have considered properly resolved earlier — or, perhaps, *did not want to resolve!* With an 8β system now activated, we wait for a G_ to enter and return us to the tonic 5β

system. Yet, this does not happen: the etude cadences in the 8β system. Other issues do resolve, however: the Bββ triad in m. 73 is succeeded by a Gβ major triad, whose Bβ (notated with the warning flat) immediately resolves Bββ. (The B_ has already resolved to Bβ between mm. 69 and 70.) In m. 76, another of the dyad conflicts is put to rest: the A_ in the F major triad resolves to Aβ (emphasized with another warning accidental) in the upcoming tonic chord in the concluding measure. Liszt's return to the Fβ in the final few measures of the etude then, contains a considerable amount of chromatic baggage that raises a host of other questions.

It must be remembered that the transformation of Dβ major to Dβ minor in m. 18 represents a minor-third relationship since the root of the tonic 5β system (Dβ) is a minor third from the root of the 8β system (Fβ). Therefore, the minor third that almost seems to hide in the recesses of the etude actually represents a higher level of chromatic organization than the modulations by major thirds that have already been discussed. In fact, any of the compositions we have already written about that transpose large areas of material by major thirds, take for example, Beethoven's "Waldstein" sonata, do so through shrouded minor-thirds progressions that are unfolded in the background and can be viewed in the systems matrix. In the case of the "Waldstein," the relationship revealed in the background of the first movement's exposition is one between a "0" system, the tonic, and a 3# system, the system of the second harmonic area. That is, even though the second harmonic area is E major, the relationship that exists between the root of the tonic system, C_, and root of the 3# system, A_, represents more of a background relationship than the foreground

association of C major with E major. When D# enters in the counterstatement/bridge, it does so as the enharmonic transformation of the missing pitch which had been written consistently as Eβ in the opening statement. Again, the relationship of C_ to A_ is a minor third and the intervalic relationship from C_ to the dividing tritone of the 3# system, D#, is that of an augmented second, an enharmonically respelled minor third. The foreground harmonic organization of "Un sospiro" is very much the same as the "Waldstein: the entry of Fβ in m. 18 initiates a minor third relationship between the tonic system of 5β and its complementary system of 8β.

The contention that Liszt took seriously the issues surrounding the tonic 5β system's missing pitch, Fβ, can easily be demonstrated by examining one of his many substitutions and cadenza-like additions reprinted in the most recent score of the etude. In the recent Bärenreiter edition of the new complete works, there is an asterisk at m. 72 that refers to the following paragraph:

> Liszt also wrote down . . . the following mystically hovering conclusion with major triads on each of the six degrees of the descending whole-tone scale . . . to be performed *ad lib.* in place of the conclusion in the text . . .[2]

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[2] Franz Liszt, *Trois Études de Concert/Trios caprices poetiques für Klavier*, Zoltán Gárdonyi and István Szelényi, eds. (Budapest: Bärenreiter, 1971): 40, reprinted from Franz Liszt, *Neue Ausgabe sämtlicher Werke,* Serie I, Werke für Klavier zu zwei Händen, Band 2: Etüden II.

The seven new measures that are offered as an *ossia* for the last six are reproduced in Example 8.1. Again, at the first measure of the substitute phrase, m. 72, we are in a 5β system. The next measure again brings in the Bββ major chord with the Fβ missing pitch as it had been in the original ending. The next measure, m. 74, has the F major chord with its A_ third which is resolved immediately on the second half of the bar. However, m. 75 does depart from the original: the Bββ triad enters again with the missing pitch, Fβ. Bββ is also in the left hand which is about to descend into a register that had previously been explored in the second part of the *B* section with the F major chords in mm. 30, 32 and 34. However, that Bββ in the left hand moves to G_, allowing us (at least momentarily) to believe that a system-shift up to the tonic 5βs is in the works: yet, with Fβ still sustained in the right hand, the Fβ/G_ play of system motivators simply maintains the integrity of the 8β system. However, the resolution of A_ to Aβ occurs twice after that.

Main dyad conflicts: Dβ/D_, F_/Fβ, Gβ/G_, Aβ/A_, Bβ/B_

Form:	***A***									***C.S. embel.***				***trans.***	***B₁***			
	a	*a*	*b*				*a*	*a*		*c*								
Measure:	1	6	9	10	11	13	16	18		19	22	23			27	28	29	
Act Sys Pcs:									Fβ↘							G_↗ E_↗	Dβ↘	E_↗ Dβ↘
System:	5β								8β						5β	2β 5β	2β	5β
PCA:	**Dβ(0)**										**D_(1)**						**Eβ(2)**	**E_(3)**
PDA/*(SDA)*:	**Dβ**			**C Bβ**	**Aβ**					**(=G#)**		**F#**						
Harmony:	I				V	I		I		i	V4/3 of βVI			IV6/4 of βVI		vii^{O}4/3 of III	III$^{\beta}$6/5	V$^{\beta 9}$/III

Form:	***B₂***		*(cadenza)*	***B₃*** *: dominant prep*					***retrans.***.
Measure:	30	35	37	38	42	43	44	45	46
ASPcs:		E_↗C#↗	A# ↗ (G_/A#)						
System:		2β 1#	4#						
PCA:	**F_(4)**	**F#(5)**	**F*x*(6)(=G_)**	**G#(7)**		**A_(8)**			
PDA/(*SDA)***:**	**F_**			***(G#***	*F#*	*F_, E_*	*D_, C_*	*B_, A_*	*G#)*
Harmony:	III_			"V 8 —					— 7 „

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Form:	*(cadenza)*				***A' (varied)***		***B_3 as coda 1***		
Measure	52				53	61	62	66	67
ASPcs:	G_↘,	Bβ↘,	Dβ↘			(Dβ/E_)			
System:	1#	2β,	5β						
PCA:		**Bβ(9)**		**B_(10) C(11)**	**Dβ(0)**		**Dβ(0)**		
PDA/(*SDA*):	**Eβ**				**Dβ**		*(Dβ*	*Cβ*	*Bβ, Aβ*
Harmony:	V^7 !			I	V^7	I	(*disjunct dorian tetrachords =*		

==========

Form:			***coda 2***		‖
Measure:	68	69	70	73	‖
ASPcs:				Fβ↘	‖
System:				8β!!	‖
PCA:					‖
PDA/*(SDA):*	*G_, F_*	*E_, D_)*	**Dβ**		‖
Harmony:	= *octatonic scale)*		I		‖

Example 8.1: Liszt, 'Un sospiro', ossia mm. 72 to 78

In summary, we do not believe that a unequivocal explanation can be offered for all the problems raised by the sharp notation of the *B* section. This is an issue that invariably comes up each time an equal subdivision of the octave is used: had Bββ been used instead of A_ for the first part of the B section, allowing Dβ to descend a major third to Bββ, then the second part beginning in F major would have appeared unusual. One of the major thirds needs to be indicated as a diminished fourth because of the peculiarities of our diatonically inclined notational system. Had the etude been notated in C# major, the diminished fourth would have come up between F_ and C#. In addition, a C# major tonic would have defeated the emotional purpose of the piece whose Dβ tonic projects a darker quality than would have been consistent with a C# notation.

These types of notational concerns are one of the many problems with which a nineteenth-century composer had to contend. We believe that the issue concerning notation and enharmonicism in this etude lies within the system-defining potential of a single note, G_, the missing pitch of the 8β system arrived at through the instruction of Fβ. Liszt's suggestions for an *ossia* final phrase indicates his own personal response to the problem. In the original score, the last utterance of G_ occurs as part of the descending octatonic scale in m. 68. Although the G_ is raised to G# in the succeeding measure as part of E major harmony (or is it "really" *Fβ* major harmony?!), Gβ resolves G_ at the end of m. 70 and in the m. 71 as well. The issue is closed. However, in Liszt's seven-bar *ossia*, the G_ returns in mm. 73 and 75, just when we thought that it might create a system shift back to 5β. The absence of any further Gβs allows the dissonant G_ to ring strongly in conjunction with the 8β system at the end. If we take the *B* section to really mean Bββ major written in A major as a notational convenience, then we would still be looking for one prominent G_ to return us to our tonic 5β system. The most likely place for a significant G_ would be m. 52, the retransition (cadenza) before Liszt's key signature change back to 5βs.

If you look again at Figure 8.1, the 5β expanded system matrix, you will notice that G_ is one of the pitches that occurs twice: G_ is not only the pitch that is necessary to return an 8β system to that of 5βs, but also the first pitch necessary to bring the sharp side of the expanded system matrix figure back toward 5βs as well, which is the path Liszt chose in this etude. Perhaps Liszt's allowing G_ to remain as a dissonance right up until the

end is an indication of his own way of dealing with notational problems since G_ is needed by both the sharp side and by the flat side of the matrix to get us back "home." Ironically, home looks very "flat" at the end since the etude ends in the 8β system — an 8β system with a prominently displayed G_ that isn't resolved except in the traditional manner to Aβ. In a way, the opposition of the G_ with the 8β system at the etude's conclusion resolves a very deep-seated problem and a most interesting developmental paradox.

II. Debussy and Chromaticism at the Turn of the Century

Among Franz Liszt's prominent musical "stepchildren," Claude Debussy (1862-1918) must be counted as one of the most significant. "There can be little doubt that Liszt's 'modal effects, whole-tone harmony, pedalling and various coloristic devices greatly influenced Debussy's piano music.'"[3] A few months before Liszt died, Debussy, having just won the Prix de Rome and living in the nearby Villa Medici,

[3] Derek Watson, *Liszt* (New York: Schirmer, 1989): 140, quoted in Kenneth Hamilton, ed., *The Cambridge Companion to Liszt* (Cambridge: Cambridge University Press, 2005):43.

> visited Liszt on three occasions. We know that Liszt played for him several of his works, including 'Au bord d'une source' from *Années*, Book I, which surely must have suggested to Debussy the possibilities for developing piano technique for impressionistic effects. If he did not hear Liszt play 'Les jeux d'eau à la Villa D'Este', he certainly came to know it before writing such works as 'Reflets dans l'eau' from *Image*, Book I (pub. 1905). Proof of his knowledge of the piece is supplied in his 'L'isle joyeuse' (1903-4), which virtually quotes the figuration in bars 44-7 of 'Jeux d'eau'.[4]

We will describe how Debussy's applications of system modulations and diatonic and chromatic arrays that, even in a through-composed piece, create both a strong sense of unity and consistency of flow and direction. This is particularly significant in a composition that is so far removed from conventional tonality that hardly a phrase exists in the entire work that is overtly associated with previous musical traditions. What Debussy is able to accomplish in works from his middle period is quite revolutionary and, we believe, that only an analysis that describes the composer's unique approach to all the kinds of chromatic issues we have discussed has a chance of doing justice in appraising the originality of his style.

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[4] James Baker, "Liszt's late piano works: larger forms," in Hamilton, ed., *Cambridge Companion.*: 141-2.

Debussy composed his three *Estampes* in 1903. The first of the group, "Pagodes," is a heavily pentatonic composition in a 5# system that never uses the missing pitch D_ *(!),* a note that finally enters in the next *Estampe,* "Soirée dans Granade," with D_in m. 7 entering as the first note of the melody and making a wonderful connection from the first composition to the second of the three. The chordal writing, pedal points, pentatonicism, and sheen of high-register, flowing thirty-second notes toward the end is reminiscent of Liszt's "Sposalizio" from Part II, *Italie,* of the *Année de Pèlerinage.*[5] "Soirée" also sounds quite Oriental, but with a Spanish flavor with plenty of melodic augmented seconds and a Habañera rhythm. The change from two to three staves is also reminiscent of Liszt's notation for piano.

However, we will discuss the third of the three *Estampes*, "Jardin sous la pluie," not as overtly Oriental as the other two, but rather very much more in the style of the "Prélude,"first of the three-movement *Pour le piano* (1896-1901). "Jardin" makes ample use of Liszt's techniques of thematic transformation and immediate repetition of melodic material. However, as with Liszt's later piano works, Debussy has large sections of music that are quite distant from tonic harmony and entire sections that are prolongations of whole-tone collections where Debussy simply does away with key signatures since none are appropriate.

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[5] Excellent voice-leading analyses of "Sposalizio" are present in Howard Cinnamon's "Third Relations as Structural Elements in Book II of Liszt's 'Annees de Pelerinage' and Three Later Works," (University of Michigan, Ph.D. diss, 1984).

Debussy also enharmonically reinterprets notes from both diatonic and chromatic arrays and organizes his arrays into levels that unfold both the PCA with a substantial SCA and extends the PDA with a segment of an SDA, a technique we saw in “Un sospiro.” Scanning the score quickly, it is immediately apparent that “Jardin” begins in E minor and ends in E major and, therefore, the likelihood is that a substantial dyad conflict exists between G_ and G#; Debussy does not disappoint.

Main dyad conflicts: E_/E#, F_/F#, G_/G#, Bβ/B_

Melodic org. / key:	*1st in E mi.*						*1st in F#*	*1st in F# mi.*			
Measure:	1	4	6	17	18	21	27	31	34	37	41
Act Sys Pcs:		Bβ↘		Dβ↘	E_↗	C#↗	A#↗				
System:	1#	2β		5β	2β	1#	4#				
PCA/*(SCA)*:	**E_(0)**		**F_(1)**				**F#(2)**				**Gβ(2)**
PDA	**E_**								**D#**	**Eβ**	
Harmony:	***E mi.:*** i						II	ii			

Mel.org./key:	*1st in C mi.*			*1st in Dβ (C mi. key sig.)*					
Measure:	43	45	47	50	55	56	60	64	65
ActSysPcs:	G_↘	Bβ↘	Dβ↘			E_↗	C#↗	Bβ↘ C#↗	(Bβ/C#)
System:	1#	2β	5β			2β	1#	2β 1#	
PCA/*(SCA)*:	**G_(3)**		**Aβ(4)**		*(A_(5)*	*Bβ(6)*	*B_(7)*	*C_(8), C#(9)*	*D_(10), Eβ(11), E_(0), F_(1)*
PDA	**Dβ**								
Harmony:	VI —					*(Whole-tone harmonies until m. 71)*			

Mel.org./key:

Measure:	66	68	69	70
ActSysPcs:	(Bβ/C#)	(Bβ/C#)		
System:				
PCA/*(SCA):*	*F#(2), G_(3), Aβ(4), A_(5)*	*Bβ(6), B_(7)*	*C_(9), C#(8), D_(10), D#(11)*	*E_(0), F(1),*
PDA:				
Harmony:				

Mel.org./key: *2nd in C#* *1st in w. t.* *2nd in C#* *1st in B mi. / G_ bs.*

[a *b* *a + ext.* *]*

Measure:	70 (cont.)	71	75	77	83	90	100	103	112
ActSysPcs:				A#↗			G_↘		
System:				4#			1#		
PCA/(SCA):	*F#(2), G_(3))*	**G#(4)**						**A_(5)**	
PDA/*(SDA)*:			**C#**				(*B_*		
Harmony:		— VI					III		

Mel.org./key: *Abb., varied reprise* *2nd in B/G_ bs. 2nd in E* *1st in G# minor*

Measure:	122	124	125	126		128	133	135	136		137	
ActSysPcs:									A#↗		F*x*↗	
System:									4#		7#	
PCA/*(SCA)*:							**A_(5)**			**A#(6), B_(7)**	←→	**C#(9),**
PDA/*(SDA)*:	*B_*	*A_*	*G_* **)**	**B_**				**A_**	**G#**			
Harmony:				***E maj.:*** V $^{6/4}$ + 6th			I + 6th	iii				

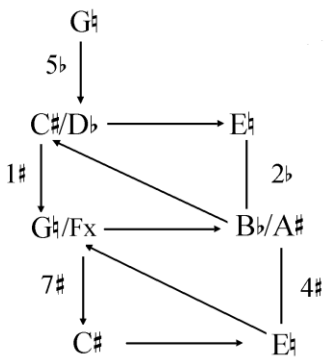
Mel.org./key:						*1st in B / F# bs.*			‖
Measure:	137 *cont.*	139	144	146		147	155	157	‖
ActSysPcs:		E_↘	F*x*↗	E_↘,	F*x*↗	E_↘			‖
System:		4#	7#	4#	7#	4#			‖
PCA/*(SCA)*:	**C*x*(10), D#(11)**						**D#(11)**	**E(0)**	‖
PDA/*(SDA)*:						**F#**	**E_**		‖
Harmony:						vii$^{\varphi\ 13}$	I		‖

Diagram 8.2 Debussy *Estampes* 'Jardin sous la pluie'

Whereas "Un sospiro" receives an overtly Romantic tempo (and mood) marking, *allegro affettuoso*, Debussy's application of the French *net et vif*, "clean and lively," gives the piece more of a sense of Classical lines that shun the typically Romantic inclination to agonize over every melodic turn and change of harmonic direction. Whereas the Liszt etude is in ternary form, Debussy's *Estampe* is through composed with a reprise of primary and secondary melodies in the last period of music: in essence, the composition seems as if it is comprised of a single extended gesture over its entire course with only a couple of momentary diversions that give one pause to deliberate along the way. In Diagram 8.2, the two basic melodies are indicated as *1st* and *2nd* as are the local harmonies implied by the melodies.

The staccato of the opening left-hand notes and their regularized rhythmic presentation, evocative of a Chopin etude (such as the Gβ major "Butterfly Etude," op. 25 no. 9) or prelude (such as op. 28 no.6 with the B minor melody in the left hand), must be rain falling on the garden. In m. 4 of "Jardin," the mood is darkened immediately by the entrance of Bβ in the top voice part that also causes a systems shift to 2β and produces our first dyad conflict (see Figure 8.2).

Figure 8.2: 1# expanded systems matrix



This is followed by another dissonance a fifth away, F_, that forcefully enters in the bass and creates another dyad conflict, this one between F# and F_. Although F_ does not cause another system shift, it does create a typical twentieth-century French modal coloring; particularly, the melodic lines emphasize C against the bass support of A, resulting in a hint of phrygian underpinning to the twisting scalar motion. The F_ continues, also, to push the mood of the piece into further darkness: in a 2β system, C# would be necessary to return the systems to the tonic, but no C#s will enter until m. 21 (see diagram 8.2). The F_ is also pc 1 of the PCA.

As the regularity of the prélude-style figuration is finally disrupted in m. 16, Debussy continues to introduce more and more flats: Eβ in m. 16 and Dβ in m. 17 – Dβ

moves the systems further down to 5β before E_ brings us back up to 2β again in m. 18. Having introduced Dβ, we expect Aβ to come in soon, which it does in m. 19. When Gβ enters in m. 22, the cycle of flats, introduced gradually and, essentially, by fifths, ends. In m. 21, Dβ is respelled as C# and the 2β system finally returns to the tonic 1#. However, with Dβ having been rewritten as C#, Debussy now has the opportunity to rationalize motion in the sharp direction: in m. 27, the previous Gβ is reintroduced as the diatonic F# and the PCA now moves up to pc 2. With Debussy's change of key signature to six sharps, the *1st* melody (in E minor) that opened the *Estampe* is modally altered and transposed to F# major, thus reintroducing the first dissonance, the Bβ that occurred back in m. 4, in its enharmonic variant as A#, whose presence momentarily moves the systems up to 4#s. In m. 31, Debussy alters key signatures again, moving a six-sharp signature to three; the second note of the descending PDA enters as D# in m. 34. However, Debussy must prepare for a harmonic motion in the flat direction so that he can arrive at a rhythmically strong Dβ chord in m. 47. At the change to a three-flat key signature in m. 37, the PDA's D# returns as Eβ: this is shown in Diagram 8.2 as a dotted bracket in the PDA line between mm. 34 and 37. The dotted bracket is always used here to indicate a note of either the diatonic or chromatic array extended by an enharmonic respelling.

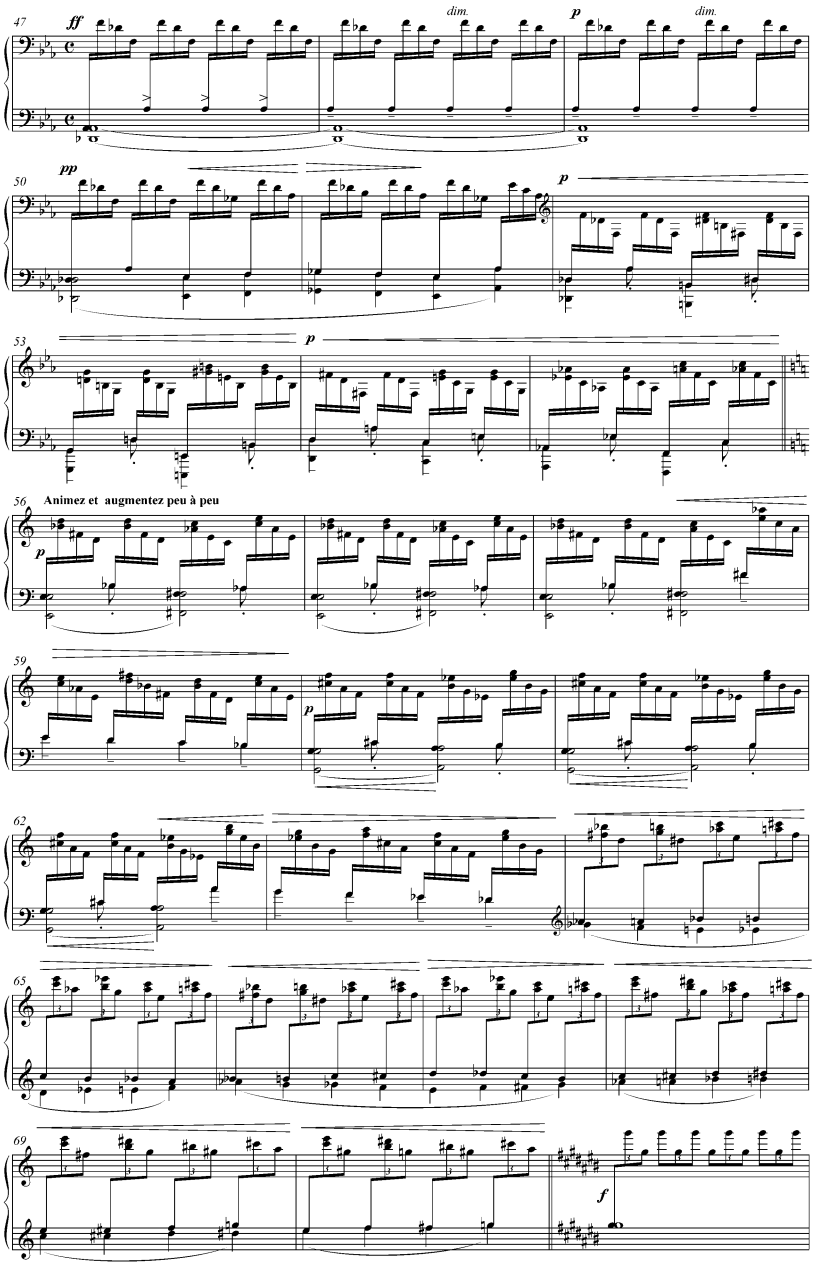
With the entry of a C minor sonority in m. 43, Debussy is able to accomplish several tasks. First, the PDA's Eβ is reemphasized in the tenor voice. Second, the fifth of the C minor chord, G_, functions as the PCA's pc 3 while simultaneously moving the systems back down to 1#, a necessary step on the way down to 5β in m. 47. Notice also,

that within the intensely chromatic passage between mm. 31 and 43, Debussy had to avoid introducing any G_s since it would have moved us too soon away from the 4# system launched in m. 27. Most interesting is the function of the C minor chord which acts as a locally verticalized consonant support for a slowly unfolded diminished seventh chord. This is accomplished with the scalar presentation of a segment of a rising octatonic scale through the horizontal space of a major sixth: Eβ to F_ in m. 37, F#to G# in m. 39, and A_ to B_ in m. 41. The C_ is the last note in the segment, completing a diminished seventh chord, Eβ-F#-A_-C_. This chord is labeled as "vii of . . . #VI" in Diagram 8.2, keeping in mind that Dβ is an enharmonic respelling of C#.

The arrival at a strongly positioned Dβ major chord in m. 47 has many functions in "Jardin": as the PCA moves up to pc 4 (Aβ) the PDA continues down to Dβ. We left a 1# system in m. 43 which now continues down to 2β in m. 45 with the Bβ on the second half of the measure; the Dβ on the first beat of m. 47 moves the systems further down to 5βs, prepared briefly in m.17, but now extended within a particularly unstable period that begins on the Dβ major sonority. However, without any kind of long-range harmonic progression in Dβ to anchor the harmony, Debussy apparently felt no reason to alter key signatures and three flats remain throughout this passage. Just as the PCA's F# (pc 2, in m. 27) was extended with an enharmonic transformation to Gβ(m. 41), so does the PDA's Dβ ultimately function as a preparation for the motion back into sharps as the *Estampe* continues. As one can see in Diagram 8.2, the PDA Dβ in m. 47 is picked up by C#in m. 75 with the key signature change to seven sharps. Yet, within this harmonically vacillating

transitional period between mm. 47 and 71, Debussy secures the boundaries of the area with a complete double-octave secondary chromatic array *(SCA)* rising between the PCA's Aβ in m. 47 until its enharmonic transformation to G# in m. 71, perhaps the composer's way of anchoring such a lengthy dissonance composed, essentially, of whole-tone collections. The music for this area is presented in Example 8.2.

Example 8.2 Debussy *Estampes*, 'Jardin sous la pluie', mm. 47-71



If the musical example is compared to Diagram 8.2, it is apparent that the PCA Aβ is picked up by the SCA A_in m. 55, just as Debussy is about to abandon key signatures in m. 56. The line continues to rise by half steps until G# is attained in m. 71 with the change of

key signature to seven sharps. During the course of this dissonant passage based on whole-tone prolongations, the systems gradually ascend from 5β to 2β to the tonic 1# system, and, in m. 77, a 4# system is attained.. Curiously, even with seven sharps in the key signature, Debussy never has an F*x* in this section and, therefore, the systems never rise to 7#s.

Debussy's diversion into C# major between mm. 71 and 99 is organized by a symmetrical formal structure, a short ternary subsection. Measure 75 presents a "new" melody ("*a*" in Diagram 8.2, actually derived from the *1st* melody), moves into a contrasting section ("*b*" in m. 83, a melodic transposition of the *1st* melody) and returns to the subsection's opening material with a short extension starting in m. 90 ("*a*" + ext. in the diagram). With the change to a seven-sharp key signature, the section's introductory measures on the G# octaves (mm. 71-72), and the continuous wobbling between G# and F#(between mm. 73 to 97), we are led to believe that the G_ has now moved successfully to G# and that the dyad conflict has been settled.

However, in m. 100, Debussy drops key signatures again and G_ not only returns to reemphasize the dyad conflict with G#, but also drags us back down into the tonic 1# system. As the section between mm. 100 and 125 unfolds, the G_ octaves in the bass, a pedal point as significant as the G#s in the previous seven-sharp section, is asserted forcefully until rapid sixteenths in m. 116 juxtapose G_ and G#. Further, G_ is emphasized with F*x* and G# with Aβ. (If there were ever a moment in "Jardin" where theories dependent on enharmonic equivalence were proved to be analytically unsatisfactory, this is it!) Debussy has to be careful here: throughout this very chromatic and virtually atonal

subsection (mm. 116-125), A# must be avoided like the plague since it would prematurely push the systems back up to 4#s and decide the conflict in favor of G# — of course, G# has to prevail! — too soon. The last gasp of G_ in m. 125 (part of an SDA which will be briefly discussed below) is settled in the next measure with the final key signature change to four sharps and the return of the wobbling G#–F# in the left hand. G#s are again present in the reprise of the *2nd* melody in m. 133 and in the reprise of the *1st* melody in m. 136. But the "victory" of G# is only *uncontested* after A# appears as part of the G# minor melodic line and the systems support the final transformation of G_ to G#: after the A#, not a single G_ appears again.

A bit more on the penultimate period between mm. 100 and 125: in m. 103, PCA pc 5 (A_) enters, is restated several times, and continues to control the array until a few measures into the last section of the *Estampe*, m. 133. This is shown in Diagram 8.2 with an extended bracket between mm. 100 and 133. This section, "1° Tempo (*mystérieux*)" starting in m. 100, involves a stabilized PDA B_ which is prolonged with a short SDA segment between mm. 122 and 125 (*SDA B_*, *A_* and *G_* in the diagram). PDA B_ reenters at the opening of the final section in m. 126 as part of a B major chord in 6/4 position and, in the diagram, PDA B_ is bracketed between mm. 100 and 126. Also, since we believe that the (rather significant!) G# in the chord at the opening of the last section that starts in m. 126 is an impressionistic color tone, it is indicated in the diagram as "+6", indicating a sixth above the root of the chord; this notation is used again to describe the E major chord in m. 133 that includes a C#.

In the final section, from mm. 133 to 157, the 7#system is finally raised (in mm. 137, 144 and 146), although only briefly. In fact, it could be argued that the system motivators, F*x* and E_, simply insure the integrity of the 4# system so that the transformation from E minor to E major can be well underscored: with the arrival of the very low G_ in m. 125 (the last note of the SDA segment), the motion to E major in the final section is made even more dramatic as G#s permeate the landscape. The A#, which is necessary to successfully move the 1# system to 4#s (and, therefore, necessary to complete the progress of G_ to G#), is first made available in m. 136 during a reprise of the *1st* melody, now stated in G# minor. A PCA rise from pc 6 (A#), to pc 7 (B_), to pc 9 (C#) — notice that pc 8 C_ is absent — to pc 10 (spelled as C*x* — with an F*x* in the vicinity, this is not surprising) and to pc 11 (D#) occurs rather quickly between mm. 136 and 137. The PCA having attained pc 11 (D#) now has us watching for the PDA F#. Both PCA and PDA now create the requisite major sixth to make the final cadence to the E major tonic chord at the end. The PDA F# appears in the lowest voice of between mm. 147 and 154 while the D# which first appears in m. 137, controls the chromatic array until m. 155. In m. 155, E completes the octave descent of the PDA while the PCA's D# is momentarily suspended, not reaching the tonic, E_ (pc 0) until m. 157, the last measure of "Jardin." It is unusual that the two final notes of the PDA, F# and E_, complete their descent in the bass register instead of in the tenor inner voice, but in the absence of a strong V-I cadence in E (the cadence is actually accomplished with a vii$^{\varphi 13}$ chord to the tonic!) Debussy must make absolutely sure that the cadential major sixth is well defined.

The manner in which Debussy articulates the final cadence is typical of harmonic and melodic motion throughout the composition. By conventional standards of tonality, "Jardin" creates an interesting problem for the music theorist since virtually no phrase is anchored by a full harmonic progression, that is, by a chord progression that moves from the tonic, through an intermediate harmony, to a structural dominant, and then back to the tonic. Even the final cadence does not include the typical dominant-to-tonic cadence in the bass. Using traditional definitions, aside from a few short melodic statements of the opening melody that generally proceed from the first to the fifth degrees of a scale, there are few *(if any!)* full harmonic progressions in the whole piece. Therefore, "Jardin," from its beginning until its end, is an experiment in the creation of music that is entirely conceived and executed contrapuntally.

III. Chopin and Debussy revisit J. S. Bach

For a moment, let us backtrack a bit historically. We have seen how Liszt begins a process whereby issues surrounding the missing pitch become the main focus of a composition. We have also seen how Debussy, following in Liszt's footsteps, fully exploits systems organization in his "Jardin" as the foreground function of the triad of conventional tonality fades even further. But the process we are discussing is one that happened gradually over the course of the nineteenth century. To demonstrate this, we will discuss

Chopin's and Debussy's musical misreadings[6] of Bach's C major prelude from *WTC I* (already discussed in Chapter 2) in terms each composer's use of the inherent implications of the "0" system underlying the C major tonality. Chopin and Debussy were pianists and never lost their interest in Bach's keyboard works, particularly the preludes and fugues of *The Well-Tempered Clavier*. All three composers reflect their unique sensitivity to systems in these three compositions: Bach's treatment of the "0" system's complementary tritone relationships is more implied than realized, whereas Chopin's treatement is somewhat more obvious, and Debussy's response exploits the full potentials of systems with its myriad of musical implications. In a sense, it can be argued that Chopin and Debussy present their own purposeful "misreadings" of Bach's prelude through their own personal early- and late-nineteenth century reactions to typical eighteenth-century chromaticism. Regarding Chopin's deep interest in Bach's counterpoint, Charles Rosen refers to Chopin as the "greatest master of counterpoint since Mozart":

> His chief training, in both composition and keyboard playing
> . . . came from a study of Bach, and it was a study that
> engaged him all his life and which he always recommended

[6]The term "misreading" refers to composers of one generation deliberately reinterpreting compositional ideas of composers from a previous generation. For example, the instrumental "chorale" melody of the finale of Brahms's First Symphony, would be considered a misreading of the vocal melody (the "Ode to Joy") that informs the finale from Beethoven's Ninth Symphony (see Joseph N. Straus, *Remaking the Past: Musical Modernism and the Influence of the Tonal Tradition* (Cambridge: Harvard University Press, 1990).

> to his pupils. His pupils attest to his idolization of Bach. The Well-Tempered Keyboard was the only music he took with him on his famous trip to Majorca with George Sand, and he generally warmed up for concerts by playing some of the preludes and fugues.[7]

In Chapter 2, we discussed the C major prelude from *WTC I* with respect to the manner in which Bach contrasted Eβ, the missing pitch of the "0" system, with F#, the missing pitch of the 3β system. Each of these missing pitches functioned as a system-shift motivator, but their simultaneous appearance consistently had the effect of stabilizing the system in which they occurred, rather than provoking a system modulation, since each prevented the other from moving into a complementary eleven pitch-class area. Each alone had the potential of causing a system shift, but their appearance together as part of a diminished seventh chord prevented any system shift from occurring. The same situation would have occurred had the system-shift motivators been D# and C_: in a "0" system, the appearance of the missing pitch spelled as D# would provoke a system shift to 3#s; however the simultaneous appearance of C_, the missing pitch of the 3# system, with D#, would have had the effect of stabilizing the tonic "0" eleven pitch-class system by pitting the two system-shift motivators against one another.

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[7] Charles Rosen, *The Romantic Generation* (Massachusetts: Harvard University Press, 1995): 285. For a discussion of Chopin's attitude of "counterpoint and the single line," cf. pp. 285-302.

We begin with Chopin's Prelude in C major, op. 28, no. 1, a work that, firstly, pays homage to Bach's C major prelude (note the obvious similarity in the arpeggiated texture) and, secondly, uses the alternative pair of complementary system-shift motivators, C# and D_, in very much the same way that Bach had employed Eβ and F#. In Chopin's Prelude, the initial chromatic gesture appears in m. 6, a simple F# chromatic passing tone that tonicizes G major and emphasizes the half cadence at the end of the first phrase in m. 8. (Bach's first chromatic, F#, is also is placed in m. 6.) However, F#, which immediately gives rise to a dyad conflict with its diatonic counterpart, F_, motivates the appearance of C# in m. 13, a note that not only creates a new dyad conflict — this one with the tonic — but also initiates the Primary Chromatic Array (see Diagram 8.3): it must be kept in mind that the consequence of a single chromatic gesture often provokes the introduction of others along the circle of fifths.[8] Chopin punctuates C# in the right-hand part with a concurrent C_ in the left hand, thus producing a rather painful dissonance, even if a short-lived one. Significantly, Chopin's original conception of this measure did not pit C# against C_, but against D_, a choice that would have avoided the significant dyad conflict between C_ and C#. This can be clearly seen in an autograph of the collection of this opus that resides in the

[8] See Henry Burnett and Shaugn O'Donnell, "Linear Ordering of the Chromatic Aggregate in Classical Symphonic Music," *Music Theory Spectrum,* 18/1 (1996): 22-50.

Biblioteka Narodowa in Poland.[9]

[9] The manuscript of this prelude can be viewed on the website of The European Library, although the reader will profit greatly by saving it as a picture file and increasing its size and resolution: http://libraries.theeuropeanlibrary.org/Poland/treasures_en.xml. It is a page of an autograph from 1831-1839: “24. Preludes pour le pianoforte dedicé à mon ami J. C. Kessler par F. Chopin.”

Dyads: F_/F#, D_/D#

Measure:	1		9	10	11	13	14		15	
Active System Pcs:							(C_/D#)			
System:	“0"									
PCA:	**C_ (0)**				**C# (1), D_ (2)**		**D# (3), E_ (4)**		**F**	
PDA:	**C**	**---**	**C**	**B**	**A**		**G**		**F**	**-------**
Harmony:	I	---	I	V 6/5	I	ii 6/5	V 4/3 of	...	IV6	

Measure:	18	19	20	21	22	24	25-34	‖
ASPcs:				(C_/D#)				‖
System:								‖
PCA:	**F# (6), G_ (7)**	**G# (8), A_ (9)**	**A# (10), [B_ (11)]**	**----------**		**B_ (11)**	**C_ (0)**	‖
PDA:		**------**	**[F]**	**E**		**D**	**C**	‖
Harmony:	V6	I	V 4/3	I 6	07	V7	I (4-3)	‖

Diagram 8.3: Chopin Prelude in C Major, Op. 28 No. 1

As one can see in Diagram 8.3, the PCA is unfolded quickly over the course of the next phrase. In the Bach prelude, the first occurrence of pc 3 was spelled as Eβ, but its system-motivating potential was neutralized by a concurrent F#. In the Chopin, however, pc 3 enters as D# in m. 14; however, its ability to alter systems is prevented by the C_ in the left hand. The “0" system is thus stabilized. As the unfolding PCA continues to ascend, the Primary *Diatonic* Array is also set in motion and it begins its descent. The PDA C is picked up at the beginning of the second phrase in m. 9 and continues to B and then to A in an inner voice of m. 13. When pc 3 is reached in m. 13, the PDA reaches G and moves down to F immediately in the next bar, concurrently with the PCA’s arrival to F. The convergence on F in both PCA and PDA on a IV6 chord is another reference to the Bach prelude: the primary motivic material in the Bach prelude, E-F-F-E in the upper voice is draped over its first four measures, and Chopin, as he tips his hat to the master, must find a manner in which the coda of his prelude (mm. 25-34) — which states and restates E and its neighbor note F — may be prepared. In terms of voice leading, that prominent IV6 chord of m. 15 initiates a chromatic voice exchange with the diminished seventh chord in m. 22 (A to A, and F to F#); in terms of the descending PDA, there is considerable motivation for Chopin to stop the PDA from descending further. The long-range motion from F to F# recalls the prelude’s first F# as a bit of passing chromaticism in the eight-bar opening passage which had the effect of emphasizing F. The PDA F in m. 15 is allowed to ring out until m. 21. The voice exchange creates a dramatic extension of F which is framed by E in mm. 14 and 23.

As the PDA continues its descent to E (m. 21), to D (m. 24) and to C (m. 25), the PCA has already reached pc 11 (B) in m. 20, a pitch class that must be sustained while the PDA concludes its descent. Both unfoldings of PDA and PCA are completed with the PDA D moving to C between mm. 24 and 25 and, simultaneously, the PCA rising from pc 11 to pc 0. Chopin's final ten measures parallel Bach's final four.

Concerning the prelude's dyad conflicts, the developmentally motivational significance of the dyads F_/F# and C_/C# has already been discussed. The other outstanding dyad can easily be determined by viewing Chopin's use of the missing pitch, D#, and its interaction with its diatonic pair, D_. In the manner of Classical developmental procedures, Chopin resolves all the prelude's dyad conflicts before the close of the work. Thus, the C_/C# conflict resolves with the return of tonic harmony at the coda in m. 25. In a similar manner, the conflict between D# and D_ concludes in favor of its diatonic variant at the structural dominant in m. 24; consequently, the PDA pitch D in that measure acts as both consonant support to the PCA note B (pc 11) and is, at the same time, the final resolution of D#. However, Chopin reserves the final resolution of F# to F_ for the coda whose primary purpose is to iterate the neighbor-note relationship between E and F. Thus the restatement of Bach's primary motive has two functions: the first is to accentuate the diatonic neighbor-note relationship, and the second is to resolve a prominent dyad conflict.

There is one other bit of evidence that Chopin deliberately planned his prelude as a homage to Bach; this has to do with the Golden Section. You may recall from Chapter 2 that we pointed out Bach's carefully chosen placement of the first diminished seventh

chord (in m. 22, F#-A-C-Eβ, containing system-shift motivators Eβ and F#), was at a point that divided the prelude as close to the Golden Section as possible. In the Chopin prelude, the composer culminates an eight-measure crescendo and five-measure *stretto* (incidentally, both five and eight are numbers of the Fibonacci series — 0, 1, 1, 2, 3, 5, 8, 13, etc. — which can be used to generate the Golden Section) on a *fortissimo* I^6 chord in m. 21 that will give way, in the next bar, to the diminished seventh chord at the other end of the voice exchange that began in m. 15. Bach's diminished seventh chord was spelled F#-A-C-Eβ; Chopin's is enharmonically spelled C_-D#-F#-A. Either way, however, they each stabilize the "0" system around a diminished seventh chord at a physical point that is very close to the 0.618...:1 proportion that closely approximates the Golden Section. Incidentally, while Chopin's placement of his diminished seventh chord is very slightly different both metrically and rhythmically from Bach's (even though Chopin places his diminished seventh chord in *the same measure* as Bach's, m. 22), Chopin's choice of numbers of measures, thirty-four as opposed to Bach's thirty-five, is indicative of Fibonacci thinking. His choice of thirty-four measures may also explain the necessity for the unusual notation of the last chord of this prelude, a notation that avoids the prelude from having only thirty-three measures. (Debussy also used the Fibonacci series to determine the length of sections and periods in his "Jardin sous la pluie.")

To continue our discussion of the attitudes of Chopin and Debussy toward C major, we turn to the opening piece in Debussy's *Children's Corner* titled "Doctor Gradus ad Parnassum." Debussy's six-piece piano suite, a small collection of character pieces, was

composed between 1906-8 and was dedicated to his daughter. Although Debussy's "Gradus" may have been written to satirize Muzio Clementi's collection of instructional piano studies called *Gradus ad Parnassum* (in the last number of Debussy's set, "Golliwogg's Cakewalk," he takes aim at Wagner's *Tristan* as well), there are enough similarities among the Debussy, Chopin and Bach preludes (all in C major) to warrant comparisons. Like Chopin's prelude written seven decades earlier, Debussy's "Doctor Gradus" also appears to have been influenced by J. S. Bach's C major prelude and is in the arpeggiated style of a Bach prelude. Debussy spoke respectfully of Bach and mentioned him often in his essay "Monsieur Croche, the Dilettante Hater"[10] and refers to his daughter Chouchou playing Bach's keyboard works in his letters. Debussy was also quite familiar with the works of Chopin and had been asked by Jacques Durand to create a new Chopin edition. With this request, Debussy was inspired to write his own *Douze Études* which was published in 1915 and was "dedicated to the memory of Frédéric Chopin."[11]

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[10] Claude Debussy, "Monsieur Croche the Dilettante Hater" in *Three Classics in the Aesthetic of Music*, no ed. listed (New York: Dover Publications, 1962):1-71.

[11] Roger Nichols, "Claude Debussy" in *The New Grove Twentieth-Century French Masters,* edited by Stanley Sadie, (New York: W. W. Norton & Co., 1986): 47. Cf., François Lesure and Roger Nichols, editors, *Debussy Letters* (London: Faber and Faber, 1987): 296; Debussy's revised Chopin's complete works and they were published by Durand between 1915 and 1917. German editions were not available during the war, but Debussy respectfully acknowledges Ignaz Friedman's Chopin edition published by Breitkopf.

Yet, Debussy's "prelude," with its allegiance to both Chopin and Bach, is also a purposeful misreading, so to speak, of both his predecessors' preludes. Its length, for example, is sufficiently swelled to allow some typically late-nineteenth century chromaticism that stimulates some quick systems shifts. Whereas neither Chopin nor Bach before him allowed for any extensive system shifts, Debussy's brief key-signature changes to two flats and then to five have him expanding on the modulatory system potential (but never realized) of Bach's Eβ/F# system-motivator dichotomy. Rather, his "prelude," Debussy explores the very aspect of system modulation that Bach avoided, moving the music into full-blown flat-oriented system modulations. To mark the system shifts, Debussy deliberately constructs a textural change from the constant sixteenth-note figuration that began the "prelude" to that of eighths, before once more regaining his diatonic composure with the prelude-like figuration that started the composition. Both the chromaticism and piece's length — necessary for that degree of chromatic elaboration — take Chopin's and Bach's wholesome, cleaned-and-pressed C major preludes and wonderfully distorts them, allowing Debussy to place his unique mark on the whole business, while he thumbs his nose at his own past at the same time.

Main dyad conflicts: C_/C#, E_/Eβ, F_/F#, A_/Aβ

Form:	***Opening statement***									***C.S.***		
Measure:	1	5	6	7	11			21	22	23	24	25
Act Sys Pcs:												
System“0"												
PCA	**C_(0)**								**C_(0)**		**C#(1)**	**D_(2)**
PDA/*SDA:*	**C_**	*B_, A_ G_*	*F_*	*E_*		*D_*	**C_**	**B_**				
Harmony:	I			ii$^{6/5/_-\beta}$	III		“III^{7}"	I				

==========

Form:								***Retrans.***	***Recap***			
Measure:	25	26	27	31	33	35	37	45	47	51	55	57
ASPcs:						Eβ↘ Gβ↘		A_↗				
System:						3β, 6β		3β				
PCA	**[C#(1)D(2)]**					**Eβ(3)**		**E_(4)**				
PDA/*SDA*:		**B_**	**A_**	**G_**	*F_*		*Eβ*	**G_**		**F_**	**E_**	
Harmony:	I$^{9/\beta 7}$				βVII $^{8/5/3 - 9/6\beta/4}$		βVI^{13}	V	I	ii$^{6/5/_-\beta}$	Aug.	I

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Diagram 8.4: Debussy, *The Children’s Corner*, “Doctor Gradus ad Parnassum”

***Form*:**				***Coda*** *(“Très animé”)*							‖
Measure:	64	65	66	67	68	69	70	73	74	75	‖
ASPcs:					F#↗		(Eβ/F#)				‖
System:					“0"						‖
PCA		**F_(5)**			**F#(6), G_(7)**	← →	**A_(9)**	**Bβ(10)**	**B_(11)**	**C_(0)**	‖
PDA/*SDA*:	[D–C		D–C	C]				**E_**	**D_**	**C_**	‖
Harmony:								IV^{7}	$vii^{4/3}$	I	‖

Diagram 8.4 details a PCA and PDA analysis of Debussy's "prelude." Like Bach and Chopin, Debussy opens with a quick sixteenth-note pattern and establishes an immediate relationship between E and F in mm. 7 and 10. The essence of the next passage, between mm. 13 and 21, is to stress the E in order to play F off against it as a neighboring sonority. However, it is the coloristic portions of the accompaniment harmonizing the neighbor-note relationship that concerns us since it is here that the chromatic notes become increasingly prominent: in mm. 9-10, the A that had been part of the subdominant harmony's inner voice is flatted to Aβ and then enharmonically recalled as G# in m. 11 as part of an E major triad (labeled "III" in the diagram). With the presence of Aβ (establishing a dyad conflict with the diatonic A_), we expect that the introduction of Bβ and Eβ will not be far away. With G#, however, we expect to see F# and C# and both notes enter soon in m. 17; the A# that enters with these two, instead of fulfilling an expectation of the entrance of D#, will be enharmonically respelled as Bβ: in m. 28, Bβ enters just after A# resolves to A_ in the previous measure. Now spelled as Bβ, this note will help to motivate an excursion into the flat side of the circle of fifths. This is significant for two reasons: 1) Bach never explored the flat side of the circle since the modulatory system potential of each of his Eβs had been neutralized by concurrent F#s, and 2) Chopin's choice of D# for pc 3 virtually eliminated the possibility of a system modulation in such a short composition since a simple restatement of the tonic C_ would prevent modulation into a 3# system.

The first period of "Doctor Gradus," ending in m. 21, culminates with an unusual

chromatic element, Aβ which, on the surface, appears to be a "misspelled" G#. Also, with the sophistication of compositional layers, a new element appears: a Secondary Diatonic Array, very much in the style of Liszt. The descent of the PDA (which is in bold letters on the diagram) is frozen momentarily between the opening of the piece and the counterstatement (labeled ***C.S***. on the diagram) that begins in m. 22. As in the Liszt diagram earlier, the notes of the SDA are italicized so that they can easily be distinguished from the notes of the PDA. In this passage, not too different, actually, from the organization of a sonata-form opening statement, Debussy anchors C major and simultaneously brings in certain dyad conflicts that will figure significantly as the piece develops. The difference, however, with a standard opening statement of a sonata is that Debussy has provided a high degree of stabilization by including a complete lower-level diatonic octave descent. Notice on the diagram that the PCA has not yet begun to ascend. Bach does this as well: a complete SDA octave descent occurs between mm. 1 and 19 of his *WTC* prelude. (Chopin included no SDA.)

With the counterstatement in m. 22, Debussy quickly moves away from C major, an option avoided by Bach and Chopin. The pervasive application of Bβ allows a smooth transition to a new key signature, two flats in m. 33, where, by m. 35, we find ourselves in a 3β system with the entry of Eβ, thus creating a dyad conflict with E_. However, Debussy's emphasis on the flat side of the circle is pushed further with the entry of Gβ (just under the Eβ) in m. 35. Keeping in mind that Gβ is the missing pitch of the 3β system, we now find ourselves in a 6β system. This prompts Debussy's alteration of key signature again (to five

flats in m. 41) and a pedal point on Aβ ensues, picking up the unusual Aβ that appeared at the end of the prelude's first period (m. 21) and that very same initial chromatic that had entered back in m. 9. As the diagram shows, Debussy's method of stabilizing the area between mm. 33 and 44 is to pick up the PDA note G (m. 31) and allow it to descend further through the application of notes associated with another SDA. In this case, however, with the turn to flat harmonies, Debussy from substitutes F_and Eβ for the regular PDA/SCA notes F_ and E_. Therefore, the regular PDA notes have been modally inflected to accommodate both the Eβ/E_ dyad conflict and a large-scale flat area anchored with a system shift from "0" to 3β to 6β.

Until now, the dyad conflict, a dissonant relationship between a diatonic note and one of its chromatic counterparts, was sufficient to describe a certain aspect of a composer's developmental arsenal. However, with this work, we see again the possibility of the *dyad* conflict expanded into a *triad* conflict. In "Dr. Gradus," it would be difficult to find some other way of describing the presence and use of three chromatic variants of A (Aβ, A_ and A#) within the relatively short span of a seventy-six measure character piece. However, just as the appearance of Aβ allowed us to expect the eventual entrances of Bβ and Eβ, an A# suggests the eventual appearance of F#, C#, G# and D#. If we align the notes used in the prelude in the order of the circle of fifths with the diatonic notes of C major in the middle, the flat chromatics on the left and the sharp chromatics on the right —

Gβ-Dβ-Aβ-Eβ-Bβ // F-C-G-D-A-E-B // F#-C#-G#-[D#]-A#

— we can understand why an A# should suggest the eventual appearance of D#. Yet, that never happens. Perhaps Debussy avoids D#, one of the enharmonic versions of the missing pitch and the one used by Chopin, so that Eβ, the variant used by Bach, would receive a certain degree of distinction.

At the *1° Tempo* in m. 45, Debussy begins to recapitulate the opening. Also, the A_ in m. 45 returns us to the 3β system that never had a chance to assert itself in m. 35 because of the simultaneous appearance of Gβ. However, with the absence of F#, we stay in the 3β complementary system. The second difference with the prelude's opening is the substitution of G# (m. 11) with Aβ (m. 55) and the modification of the previous E major chord with an Aβ augmented triad. As Aβ had done originally, it motivates the presence of Eβ and reasserts the dyad conflict that had initiated the system modulations before. In terms of systems, the Eβ in m. 58 simply confirms 3βs. As the phrase continues to unfold, we find ourselves focused on the E_/Eβ and the A_/Aβ dyad conflicts that beg for resolution.

At the *très amimé* race to the finish (m. 67), all dyad (and triad!) conflicts are again stated and now resolved. First, m. 68 contains the F#, as part of an F# major triad, needed to regain the tonic "0" system. But the Eβ still needs to resolve to its diatonic variant. Also, the F# that cancelled the 3β system still needs to resolve to F_. On top of that, A# makes another appearance and, thus, requires resolution as well. To make matters just a bit more complicated, Debussy has also raised the specter of C#, a note that has not been seen since m. 26. While the arpeggiated C major triad in m. 71 and 72 helps to restore the tonic, it is

actually the IV7 chord in m. 73, the one that Debussy marks *fortissimo* (the only *fortissimo* in the piece thus far), that settles every single conflict that Debussy has raised: F_ resolves F#, A_ resolves both A# and Aβ, C_ resolves C# and finally, E_ resolves Eβ.

We would like to make one final observation concerning dyad conflicts in this work and about dyad conflicts generally. The most prominent dyads in the Bach prelude were E_/Eβ and F_/F#; the C_/C# dyad was prominent as well. The F#-A_-C_-Eβ diminished seventh chord raised a prominent dissonant element, but also secured the “0" system by counterposing the system-consonant tritone, C_-F#, against its system-consonant complement, Eβ-A_. In the Chopin prelude, the significant dyad conflicts involving C_/C#, D_/D# and F_/F#, and the tonic matrix diminished seventh chord C_-D#-F#-A_, played an important role in helping to firmly fix the underlying “0" system by counterposing the C_-F# system-consonant tritone against its A_-D# complement. In Debussy’s “Doctor Gradus”, the notes of the C_-Eβ-F# diminished triad (the most crucial material of m. 68) as well as its more foreground components, A# and C#, provided both a “0" system stabilization and resurrected every dyad and triad conflict previously raised. In the previous chapter, we saw how, in Chaikovsky’s Symphony no. 4 in F minor, the pitches F_, G#, B_ and D_ played a significant role in the way the composer’s material was presented, developed and expanded.

With the eleven pitch class system of triadic tonality organized around equal subdivisions of the octave into tritones (ones that yield the system-consonant tritone of the tonic octave) and around minor thirds that bisect the system-consonant tritone at the locus

of the missing pitch, it would seem understandable, even logical, that a composer would gravitate toward chromatic conflicts (both dyadic and, eventually, triadic) that are part of the tonic system matrix. More specifically, a composer might be inclined to assemble his dyad and triad conflicts around a diminished seventh chord that includes the tonic pitch. With the increasing of chromatic intensity over the course of the nineteenth century, composers were able to immediately establish a foreground of intense chromaticism and stabilize that dissonance simultaneously with the use of the diminished seventh chord, particularly one that includes the tonic. Therefore, the diminished seventh chord begins to play the role of a *functional system stabilizer*. The emergence of a stabilizing diminished seventh chord in the nineteenth century is, of course, on the borderline of being counterintuitive. However, an awareness of this possibility may in the future, or so we hope, provide some insight to the manner in which some twentieth-century composers, such as Bela Bartok, organize their foregrounds.

IV: Schoenberg and the Expressionist Movement

At the turn of the twentieth century, Arnold Schoenberg's first-period works pushed the envelope of common-practice tonality to its limits, but still maintained the compositional features previously discussed. His early compositions from the 1890s suggest influences from both sides of the Romantic-period spectrum, represented by Brahms and Wagner. His indebtedness to grand-scale single-movement composition from Franz Liszt and Richard Strauss is evident in his tone poem, *Pelleas und Mellisande* (1902-3). The opening of Gurre Lieder (1900) has an almost Debussyian sense of color and slow

harmonic unfoldings as the poetic imagery suggests a sunset. In his songs, *Vier Lieder für eine Singstimme und Klavier,* Op. 2 (1899), Arnold Schoenberg sets German Expressionist poetry that reflects both the anxiety of a world teetering on the brink of conflagration and the obsessive musings of the Viennese on the subjects of sex, eroticism and nightmares of the subconscious mind. For us, Schoenberg's Op. 2 songs are especially significant for their tendencies to apply system shifts as support for extremely vivid poetic images. Whereas a composer from an earlier style period would have introduced non-harmonic tones gradually, Schoenberg presents the entire gamut of chromatic pitch classes immediately. Such is the nature of Schoenberg's rapidly evolving harmonic language that, within the decade, will become so thoroughly saturated by a fully chromatic foreground, that he will dispense with key signatures and functional triads altogether; yet we will discover that the interaction of complementary 11 pitch-class systems still remains as a vital force even within an atonal harmonic language!

Example 8.1 is the first ten measures of "Expectation" (*Erwartung*), the first song from Schoenberg's four op. 2 *Lieder*. The poem of *Erwartung* concerns a man about to meet his lover. As he stands before her villa, he recalls their last encounter as he examines a ring on his hand whose glistening opal stones mirror the colors of a pond and villa in front of his lover's home. The song is in Eβ major; Figure 8.3 illustrates the 3β systems matrix of the piece. On the downbeat of m. 1, the Cβ in the vocal line and upper piano part is a neighbor tone to Bβ; the Cβ will be in dyad conflict with the diatonic C_, the latter pitch *not entering until m. 4.* A similar situation occurs with A_, a neighbor tone to Bβ: its

dyadic counterpart, the diatonic Aβ, will not enter until m. 3. The Gβ is a neighbor to G_. Each of these dyadic displacements of notes of the Eβ major scale is part of a diminished seventh chord with Eβ as the tonic although Schoenberg presents these notes without a straightforward display of a verticalized diminished seventh chord until the middle of m. 9 (this is a voice-leading chord that passes between the boundaries of a chromatic voice exchange between the first chord in m. 8 and the first chord in m. 10, allowing it a certain understated quality). The final constituent of the Eβ diminished seventh chord, the tonic Eβ, is not contrapuntally destabilized until m. 4, where it dissonant dyadic counterpart, E_, tripled in the voice and piano parts, initiates the rising PCA.

Example 8.3: Schoenberg, op. 2 no. 2 'Erwartung' mm. 1-10

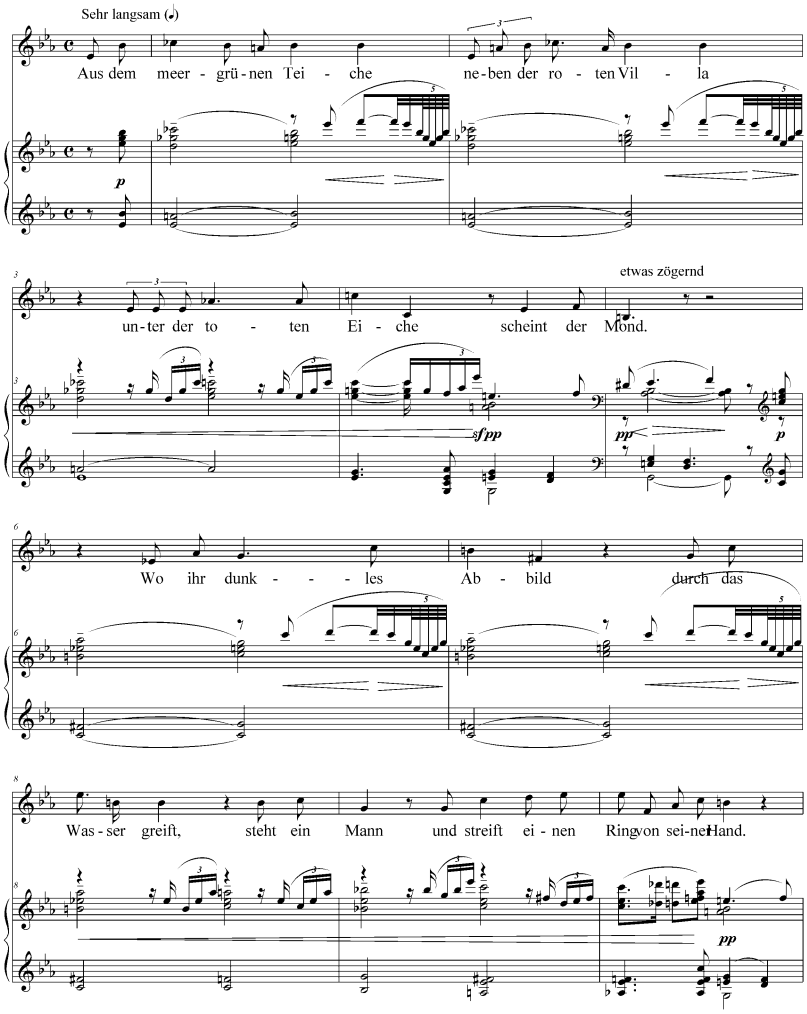
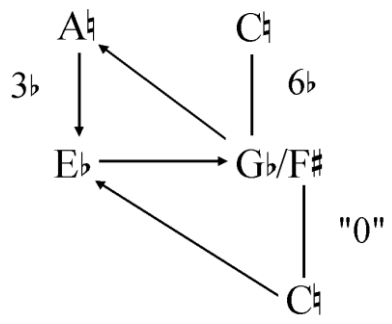


Figure 8.3: 3β system matrix



In the first chord of m. 1, there is an immediate confrontation of system-shift motivators as Gβ attempts to push the prevailing 3β system to 6β (see Figure 8.1) but is prevented from doing so by A_. In the poetry, we envision a sea-green pond in front of a red villa *(Aus dem meer-grünen Teiche neben der roten Villa*).[12] Perhaps the turn figure around Bβ, with neighbors Cβ and A_, signify the opposition of the red-green complements. Tonally, however, the effect of the Gβ and A_ system-shift motivators is to secure the 3β system. In m. 3, on the word "dead" (*toten*), the Gβ in the piano part is able to move us down into a 6β system at the point that the A_ is superseded by its diatonic counterpart Aβ. However, in the next measure, A_ (the missing pitch of the 6β system) returns, restoring the tonic 3β system while Eβ is displaced by E_ toward the end of the bar. Symbolically, the E_ enters and the 3β system returns as we see the moon shining (*scheint der Mond*) under the dead oak. With the entry of pc 1 (E_) and pc 2 (F_) at the phrase end, we expect some activity. The note D# is brought in as an enharmonic variant of the tonic, perhaps to deflect any interference from the previous Eβ. Also in the vocal part, the phrase ending on B_ provides an enharmonic respelling of the previous Cβ. Then, in the poetry, "where her dark image reaches through the water," a man stands and removes a ring from his hand: from the 3β system, an F# enters, in conflict with Eβ, trying to push us toward a "0" system. However, the systems are stuck with the continued presence of Eβ, just as the man waits momentarily as he anticipates his love which, at this instant, is as non-progressive as the accompanying harmony. We

[12] Walter Frisch has an excellent analysis of the text, particularly with reference to the coloristic aspects of the harmony in *The Early Works of Arnold Schoenberg:1893-1908* (Berkeley and Los Angeles, University of California Press, 1993): 92-98 with a translation of Richard Dehmel's poetry.

expect some activity as the PCA rises to pc 3 (F#), 4 (G_) and 5 (Aβ) in mm. 6 and 7. Pc 6 (A_) enters in m. 8 and resolves to pc 7 (Bβ) in the next bar. However, the harmony is almost irritatingly stable as Eβ continues to prevent F# from accomplishing a system modulation. Expectations abound.

Dyads/triads: Eβ/E_, G_/Gβ, Aβ/A_, C_/Cβ/C#

Form (ternary):		*A section*						
Measure:		1	3	4	6	7	8	9 . . .
Active System Pcs:		(Gβ/A_)	Gβ↘	A_↗		(F#/Eβ)		
System:		3β	6β	3β				
PCA:				**E_(1)**	**F_(2)**	**F#(3) G_(4)**	**Aβ(5)**	**A_(6)**	**Bβ(7)**
PDA:		**Eβ**			**D**	**C**			**Bβ**
Harmony:		I	IVβ4/3 V/VI_	VI_				passing 6/4	
Text:	Sea-green pond,		dead oak,	shines,	her dark . . .	image	reaches, stands a	man

Form:			*B section*				
Measure:	. . . 9	10	12	13	14		
ASPcs:	(F#/Eβ)		(F#/Eβ)		F#↗		
System:					"0"		
PCA:			**B_(8) . . .**				
PDA:		**Aβ**	**G . . .**				
Harmony:	dim 7	ii6/5	V7/VI_ . . .				
Text:	removes	ring from his	hand. Three opals glisten,	thru the pale stones swim red and green sparks and			

Form:					*transition*			*A' section*
Measure:	17	18	19	20	21	23	24	26
ASPcs:	(D#/C_)	(Gβ/A_)	Eβ↘(Gβ/A_)		(Eβ/F#)	(Gβ/A_)		(Gβ/A_)
System:			3β					(3β)
PCA:		**Cβ(8)**	**C_(9)**	**[Cβ(8), C_(9)]**	**D_(11)**		**Eβ(0)**	
PDA:		**. . . G**	**F**			**[Eβ ant.]**	**Eβ...**	**... Eβ**
Harmony:	"Aug6" of	V6/4			V 6/3	5/3		I
Text:	sink.	He kisses them,	his eyes glow	like the sea-green	depths:	a window opens	up.	From

Form:					‖
Measure:	26	27	28 — 30	32 — 37	‖
ASPcs:	(Gβ/A_)		Gb↘ (Cβ/C_/C# triad)		‖
System:					‖
PCA:			**[D_(11)**	**Eβ(0)]**	‖
PDA:			**[F**	**Eβ]**	‖
Harmony:			V	I	‖
Text:	a red villa	near the dead oak	a pale woman's hand beckons to him.		‖

DIAGRAM 8.5: Schoenberg's *Erwartung* from *Vier Lieder für eine Singstimme und Klavier*, op. 2

Example 8.3 gives only the first ten measures of *Erwartung*, the *A* section of the ternary-form *Lied*; however, Diagram 8.2 provides analytical material for the entire PCA, PDA, and basic harmony for the whole song. You will notice that the *A* section allows the PCA to unfold pcs 1-7, while the PDA descends from Eβ to G. The *B* section, between mm. 12 and 18, freezes both PCA and PDA: this is accomplished by having the systems move from 3β to “0" and the foreground events unfold sharp-key harmonies. In the text, the man, instead of immediately proceeding to the villa, delays for a moment as he views the ring that he has taken off his finger, noticing the red and green sparks of the three pale opals. With pc 8 entering as B_ in m. 12, and the harmony moving into sharps (perhaps representing the stones’ glistening), the next PCA pitch (pc 9), C_, is unavailable as C_’s local function is to play the role of a system-shift motivator continually clashing against D#. Therefore, the systems remain in “0" while the man contemplates the similarities of the stones’ colors to the sea-green pond and the red villa. Meanwhile the PDA sits on G. In terms of the unfolding chromatic octave at this point, C_is not yet able to be activated as pc 9 since it exists only on a secondary level of chromatic structure. The PCA C_ does not enter (although the note C_ is often present) until after pc 8, B_, is transformed into its enharmonic counterpart, Cβ, in m. 18. This transformation is prepared on the last eighth note of m. 17, where a B dominant seventh chord is actually an enharmonically respelled augmented sixth chord (B_, a Cβ “in disguise,” resolves to Bβ— of an Eβ 6/4 chord — in the piano left hand while A_ resolves to Bβ in the right hand). The next vocal note, Cβ, our respelled pc 8 (B_) from m. 12, moves to pc 9, C_, in the next measure.

In m. 19, as the man kisses the stones and his eyes reflect the sea-green depths, both PCA and PDA continue their journeys and the systems return to 3β. Pc 9 (C_) and PDA F are both attained in m. 19. In m. 21, the song's structural dominant is reached, The F#/Eβ system-shift motivators secure the 3β system, and pc 9 goes directly to pc 11 (C#, as pc 10 is absent); F remains in the tenor, not having been displaced since its arrival in m. 19. With the return to a 3β system and the only unfoldings of the PCA and PDA now accomplished, the woman opens the window and beckons to the man to join her as Eβ appears in the bass, an anticipation of the PDA Eβ that enters in the next measure. We are now in the modified *A'* of the ternary form and its return to the tonic assures the imminent rendezvous of the lovers. As if in a glory of chromatic ecstacy, the diatonic C is contrasted with both C# and Cβ, particularly in mm. 30 and 31 and in very close proximity. The ecstacy of the music at this point is not unlike the conclusion of Richard Strauss's "Salome," composed in the following year (1904-05). At the close of the opera, the C# major tonality represents Salome's ecstacy (or, rather, madness), soon to be shattered by C minor at her death.

The aspects of *Erwartung* that are most significant here for our present discussion, however, are the ways in which the diminished seventh chord on the note Eβ is responsible for securing the background harmony. The three pairs of system-shift motivators — Eβ/F#, Gβ/A_, C_/D# — are all essential components of the 3β system matrix and ultimately responsible for securing Eβ as tonic. We have seen, also, how in Debussy's "Jardin, " which is further down the road toward the abolition of conventional triadic tonality than "Erwartung" how system motivators, chromatic and diatonic arrays, diminished seventh

chords, etc., play increasingly significant roles in a composition given the absence of triad as a background structural device, in the voice-leading sense of the term.

It is in the nature of a work such as this that we propose to introduce a new theory to both raise and answer as many questions as we can. However, at this junction, we pose a question about compositions in the early twentieth century that abandoned traditional triadic tonality, even to the point of dropping key signatures. We saw previously how, in Schoenberg's "Erwartung," that the organization of the song was more determined by long-range unfoldings of minor thirds (augmented seconds) through the opposition of system motivators than anything having to do with the traditional role of triads; yet there is still a structural dominant in the traditional sense. A bit further advanced is Debussy's "Jardin," where an almost total absence of conventional harmonic progression means that the musical landscape must be even more strongly systematized by the structures created by the missing pitch and by dyad conflicts. The presence, too, of Debussy's inclusion of substantial secondary arrays in "Jardin" creates new possibilities for compositional and developmental exploration.

What of later composition? By 1909, Schoenberg and his colleagues in the Second Viennese School realized that triadic tonality had reached its extreme limits and now, perhaps, the triad could be successfully liberated of its previous position in the formal and structural integrity of a composition. Schoenberg had already internalized the new features of compositions whose use of equal subdivisions of the octave no longer referred to the triad as a high-level structure. Schoenberg himself, during an era of daring experiments at the turn of the century, had suggested that whole tone scales and quartal harmonies, harmonies based on segments of the chromatic scale ordered as series of perfect fourths, particularly six-note harmonies, would eventually create the language of a new kind of music.[13] A question remains, however, whether eleven pitch-class systems, missing pitches and chromatic arrays remain in the "free atonal" music of Schoenberg as the bases for compositional development. We will very briefly examine, then, the opening of the first and most famous of Schoenberg's *Drei Klavierstücke*, op. 11 no. 1, from 1909. The same year, Schoenberg also composed his fifteen-song *Lieder* cycle, *Das Buch der Hängenden Gärten*, op. 15, based on the Expressionistic poetry of Stefan

[13] Arnold Schoenberg, *Theory of Harmony*, California Library Reprint Series (Berkeley: University of California Press, 1983): 390-422; originally published as *Harmonielehre* (Vienna: Universal Edition, 1911). The implications of Schoenberg's theoretical writings have been discussed extensively by Henry Weinberg (b. 1931). Much of Weinberg's theories have been explored in Edward Smaldone's "Linear Analysis of Selected Posttonal Works of Arnold Schoenberg: Toward an Applicaation of Schenkerian Concepts to the Music of the Posttonal Era." Unpublished Ph.d dissertation (The City University of New York Graduate Center, 1986).

Georg. Both compositions are totally chromatic and shy away from the overt use of vertical triads, particularly the latter work. As opposed to the compositions written just before them, Schoenberg completely abandons key signatures, whereas Debussy, toward the end of his middle period, would only dispense with key signatures for short stretches of music, as we saw in “Jardin.” However, the approaches taken by Debussy and Schoenberg are not ultimately that dissimilar.

Main dyad conflicts: Eβ/E_, F_/F#, Aβ/A_

Form:	*A_1*								*A_2*				
	a	*b*	*a*	*c*					*b*				*a'*
Period:	*1*			*2*					*3*				
Measure:	1	4	9	12	13	14	17	18	19	20	24	25	26
Act Sys Pcs:						D#↗	C_↘	Eβ↘			F#↗	Eβ↘	(Eβ/F#)
Systems:	"0"					3#	"0"	3β			"0"	3β	
PCA/*(SCA)*		**C_(0)**		**C#(1)**	**D_(2)**	*D#(3) E_(4)*	**D_(2)**	**Eβ(3)**					
PDA		**C_**		**B_**					**A_**				

Form:						*B*
		b'				
Period:						*4*
Measure:	27	28	30	31	32	34
Act Sys Pcs:	Gβ↘	A_↗	(Eβ/F#)	F#↗		
Systems:	6β	3β		"0"		
PCA/*(SCA)*:		**E_(4)**	←——→	**F#(6)**	*G_(7)* **F#(6)**	**G_(7)**
PDA:				**G_**		

Diagram 8.6: Schoenberg, *Drei Klavierstücke*, op. 11, no.1

Since all atonal music is written without a specific key signature, one would logically infer that the system governing these pieces to be invariably a “0” system. For example, if we examine the first period of Schoenberg’s Op. 11 no. 1 (mm. 1 - 11), we find that all notes of the chromatic *except for Eβ/D#* are present, indicating that Schoenberg might have considered, consciously or otherwise, that Eβ and/or D# was the missing pitch of a prevailing “0” system. In addition, we need to test the hypothesis that a PCA and, even, a PDA or its remnants, are operational in this music. While we would not argue that op. 11 no. 1 is in C major, the question arises that if we are in a “0" system, then is it also possible that Schoenberg might be unfolding diatonic and chromatic octaves from C to C? We will explore this briefly below.

Further questions are raised with an analysis of dyadic (triadic, etc.) conflicts in the first period of the music. In mm.1 and 2, within the three beats of the end of m. 1 and the first two of m. 2, Schoenberg presents us with three different Gs: G# and G_ in the melody and Gβ in the bass. As we continue into the second phrase beginning in m. 4, we find dyad conflicts with Bβ and B_, A_ and A#, D_ and Dβ and F_ and F# between the first and second phrases. Cataloging these chromatic conflicts yields some interesting analytical material, including a potential confirmation of a “0" system in the absence of Eβ (or D#). However, one other interesting lack of chromatic conflict involves the note C which also is not immediately associated with a Cβ or C#. However, in the second period that begins in m. 12, both the missing pitch, Eβ/D#, and C_ become chromatically activated: in the thirty-second note run beginning in m. 12, C# stands out since it is the highest note reached in the section and the one that receives the strongest rhythmic emphasis. In Diagram 8.6, we will call this pc 1 (C#) and the previous C_ from m. 4 pc 0. Also, we will take the same pc 0 (C_) as the first note of the descending PDA while the first note that opens the second phrase will become PDA B_. We will also make the assumption that the Gβ that starts the bass motion in the first period is enharmonically replaced by F# in the second phrase, within the rising D major triad in the tenor of mm. 4 and 5 diminished in this way: D_-F#-A_-A#-B_. Therefore, for our opening in a “0" system, F#, the consonant system tritone of a “0" system, sits in the background to stabilize the system. In the second period, starting in m.12, F# and F_ continue their dyad conflict; also, the continual presence of F# prevents

the Eβ that enters in m. 12 from modulating systems. Therefore, system motivators Eβ and F# also help to make the “0" system a stable eleven-note entity. However, in m. 14, the entry of D# temporarily moves the systems up to that of 3#s before C_ reenters in m. 17 to return us to the tonic “0" system. This allows Schoenberg 1) to explore the sharp side of the “circle of tritones,” which does not play a particularly significant role in the op. 11 no. 1, and 2) to introduce system stabilizers C_ and D# that will help to ground the tonic “0" system.

In the third period, beginning in m. 19, the systems move from “0" to 3β with the arrival of an uncontested Eβ already prepared at the end of the previous period in m. 18. The F# in m. 24 is not able to return us to our tonic system since Eβ keeps asserting itself. Momentarily, however, the Gβ in the melody of m. 27 brings us briefly into a 6β system before the A_ in the bass of the next measure returns us to 3β (this balances Schoenberg’s short excursion to 3#s at the end of the previous period). Just as F# had stabilized the “0" system of the opening period of the work, the A_ that wobbles back and forth with Aβ in the third period, has a similar function of stabilizing the expanded 3β system. The A_ in the bass of this section will also provide the descending PDA with the next note, A_, which then continues down to G_ at the end of the period in m. 33.

Measure 34 begins the large central section of the piece: we’ll call it the *B* section (it is not indicated in Diagram 8.6). Aside from one beat in m. 36 in a 6β system, and a couple of beats between the end of m. 41 and the beginning of m. 42 in a 3# system, the *B* section basically sways back and forth between a “0" system and a 3β system. As the return

of the *A*' section is approached by retransitional material between mm. 45 and 52, we find that this section stays exclusively within 3βs; any F#s in this area are prevented from provoking a system modulation because of the continued presence of Eβs. However, in the measure (m. 52) just before *A* returns, the F# in the right hand part (second half of first beat) moves the systems to "0" with the presence of the "rarer" form of pc 3, D#. The D# sends the systems up to 3#, preventing the Eβ on the second beat in the right hand part from returning the systems to 3βs. However, with the D# activating a 3# system, the high C_, in the right hand on the third beat of the measure, shifts the system back to its original tonic "0" state just before the *A'* section begins in m. 53. The final twelve measures go through the following systems transformations: "0", 3βs (m. 55), 6βs (m. 56), 3βs (m. 59) and "0" again (m. 60). Just as the piece ends, however, an Eβ in the very lowest register — recalling the low F# in m. 12 — enters and moves the system back down to 3βs, in which system the piece ends. Concluding in a 3β system actually serves to set up the next piece in the set, Op. 11, no. 2, which stays mostly in flat systems. Just before the final cadence of no. 2 (two measures from the end), a very low F#, in the same register as the one at the end of no. 1, brings the systems up to "0", but the last measure contains uncontested Eβs that end the piece . . . almost! The last note in the left hand is the same low Eβ that ended no. 1. However, the last chord (right hand) contains a Gβ in the tenor voice, sending the systems down to 6βs. Where is the A_ to bring us back to 3βs? The very first note of no. 3 provides the A_ in octaves with no other note heard against it! Typical of Schoenberg's multimovement compositions, the composer tends to set up the pitch material of the next

number at the end of the previous one. Op. 11 no. 3 almost (almost, again) ends in a “0" system: the last few measures of the piece reiterate F# several times as if to “eradicate” any semblances of the previous 3β system. Then, in a an almost perverse turnaround, the Eβ returns *ppp* in the penultimate measure, finishing the three-movement cycle in 3βs.

With Debussy’s “Jardin”, we were able to see how a composition on the precipice of atonality was able to maintain its structural integrity. Here, we have offered a short analysis of op. 11 no. 1 (with some mention of the other two numbers) to suggest that, even in the absence of any semblance of triadic tonality, certain operations that have permeated composition for hundreds of years still seem to be active in the organization of music of later historic periods. And here, we come full circle. We note again that an underlying tendency for composers to treat the chromatic as eleven-note system gamuts and to unfold the tonic octave through the application of both diatonic and chromatic arrays in contrary motion, whether they exist in a sixteenth-century motet or in a twentieth-century atonal piano work, are ubiquitous operations that have been at the heart of composition and the developmental process over the course of several centuries.