

## CHAPTER 7

*Eleven Pitch-Class Systems in the Music of Middle to Late Nineteenth-Century Romantic Composers**III. Johannes Brahms: The Sextets, Op. 18 in B $\beta$  and Op. 36 in G*

Johannes Brahms (1833-1897) was lucky enough to appear on the scene after Schubert, Mendelssohn and Schumann had written all of their major works. He was thus well positioned to learn from these composers, both from their successes and mistakes. In addition, Brahms had a thirst for knowledge of music of the past, had an extensive library of original manuscripts, including many by Haydn and, perhaps most importantly, had an absolute mania for counterpoint, a love for which he might very well have gained from his friendship with Robert Schumann. Brahms's fascination with counterpoint goes a long way in explaining the emphasis on the linear in his music, often at the expense of tonal clarity. The nature of his counterpoint also had much to do with Brahms's treatment of chromaticism along with a unique approach to large-scale harmonic relationships that explored every aspect of the subdominant side of the cycle of fifths. Counterpoint was, for Brahms, a liberating compositional tool, not just a discipline to be learned for its own sake,

divorced from current compositional trends. His application of contrapuntal techniques to extended the harmonic possibilities inherent within the tonal spectrum had already been anticipated in the works of Beethoven, a composer Brahms at first feared and then greatly admired.

Brahms's chamber music, a genre he excelled in perhaps more successfully than any of his contemporaries, exhibits all of his innovative contrapuntal techniques, as well as his reliance upon the composers most meaningful to him from the distant, and not so distant, past. Within this spectacular repertoire, Brahms's two sextets for strings offer excellent examples for discussion, not only with regard to our theory, but also in the ways these two works successfully build upon and expand the compositional possibilities inherent in sonata form, compositional processes introduced to him through his study of the works of Beethoven, Schubert and Schumann.

*a). Sextet for Strings in B $\beta$ , Op. 18, (1860): 1<sup>st</sup> Movement*

We first look at Brahms's earlier B $\beta$  sextet as an example of the composer dealing with the music of his immediate past, most notably the works of Schubert. After completing his Piano Trio in B Major, Op. 8, in 1854, Brahms failed to complete a single chamber music work for six years. The Op.

18 String Sextet, completed in the summer of 1860, became the first of a number of substantial works in this genre to show Brahms's first mastery of the form,<sup>1</sup> including the G Major Sextet, Op. 36, discussed below.

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<sup>1</sup>James Webster, "Schubert and Brahms's First Maturity I & II," *19<sup>th</sup> Century Music*, vol. 2, no.1, 1978: 18-35; vol. 3, no.1, 1979: 52-71.

Similar to Brahms's other chamber music works during this period, the thematic material of the B $\beta$  Sextet is expansive and lyrical, with an opening statement whose phrase groupings are fashioned along the lines of Schubert's opening gambits. Schubert's initial statements often consisted of a series of well-defined phrases that mirrored the ternary form found in many of his own songs; namely, *a b a'* (appropriately called "song form") in which the middle "b" section, coming after an opening phrase establishing tonic harmony, was modulatory and unstable and which therefore necessitated a motion back to the tonic in the form of a counterstatement ("a<sup>1</sup>"). This lead into a formal bridge passage. A variant of this type, and the one Brahms uses in the B $\beta$  Sextet, extends the number of phrases to four, with a division in the middle that yield a closed binary (aa<sup>1</sup>bc) structure. In this type, the "b" phrase is harmonically unstable with the "c" phrase acting as a closing which ends on the tonic, overlapping with the start of the bridge. As it turns out, this type of tonally closed melodic design was more characteristic of Italian opera arias by Rossini (Rossini's so-called "thematic block": *a a'*) and later fully realized by Vincenzo Bellini who extended Rossini's "thematic block" with additional "b" and "c" phrases (Verdi also followed Bellini's thematic design in his early and middle-period operas).<sup>4</sup>

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<sup>4</sup>See Scott L. Balthazar, "Rossini and the Development of the Mid-Century Lyric Form,"

Without a doubt, opera was one of the most important influences on Romantic composition, in all its forms. Even Brahms, the champion of absolute music forms, fell under the spell of opera (he is known, for instance, to have adored Bizet's *Carmen*); and even though he never wrote one, he certainly admired the genre. It is interesting to note that Bellini's major-mode aria melodies often contained within them a passing harmony that either turned to the Neapolitan, or, that veered elegiacally into distant neighboring minor-mode harmony ("Casta Diva" from the first act of Bellini's *Norma* of 1831, is a fine example). Such expressive melodic digressions were quite often heard as climactic areas within the individual phrase, and that is exactly how Brahms treats the distant harmonic inflection that informs the opening phrase of his sextet (Ex. 7.3a). Brahms's lyrical nine-measure melody (which, incidentally, is similar in contour to that of Beethoven's C Major String Quintet, Op. 29, discussed in Chapter 6), reaches an expressive high point at the end of the first "a" phrase on a G $\beta$  triad (beat 3 of m. 7) that acts as a  $\beta$ VI within the progression.

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*Journal of the American Musicological Society* 41, 1988; and Robert Moreen, "Integration of Text Forms and Musical Forms in Verdi's Early Operas," Ph.D. dissertation, Princeton University, 1975.

EXAMPLE 7.3a: Brahms String Sextet in B $\beta$ , Op. 18, 1<sup>st</sup> Movement, mm. 1-9

Exposition  
1st Harmonic Area  
(a)

Violino I

Violino II

Viola I

Viola II

Violoncello I

Violoncello II

*poco f*

*poco f espressivo*

*poco f espressivo*

D<sub>-</sub> ↓ 5ss

E<sub>-</sub> ↑ 2ss

Considering the totally diatonic nature of the opening “a” phrase up to the point where G $\beta$  is introduced, the interpolation of  $\beta$ VI is heard as something of an event, which, as it turns out, is soon manifested within the complex development of system relationships that govern the course of the movement. Specifically, the G $\beta$  triad introduces D $\beta$ , the missing pitch of the 2 $\beta$  tonic system (Fig. 7.2 illustrates the movement’s extended tonic matrix); both of these pitch classes also form important dyad conflicts with their immediate half-step neighbors, G $_$  and D $_$ . In addition, D $\beta$ , the missing pitch (or system-shift motivator) of the 2 $\beta$  tonic system, is later respelled as C#; however, in a tonic 2 $\beta$  system, C# will move the systems clockwise to 1#, while the missing pitch spelled as D $\beta$  will move the systems counterclockwise to 5 $\beta$ s.

Thus the enharmonic respelling of Dβ as C# creates a 1# system that governs the entire second harmonic area of the exposition.

### *Παγε 8*

Returning to the opening “a” phrase, it concludes on dominant harmony and is then followed by a linking measure (m. 10), which extends the dominant in preparation for an exact repeat of the “a” phrase, starting again on the tonic, and reiterating Gβ harmony at its close. During the statement of the two “a” phrases, Dβ is conflicted with its complementary system-shift motivator, E<sub>-</sub>, as the harmony moves in and out of Gβ. However, within the subsequent “b” phrase, the Dβ now bears both harmonic and system potential by being transferred into the bass, first as part of a Bβ minor 6 chord (m. 21), and then the root of its own triad (m. 25). As a result of Dβ’s prominence, the “c” phrase is governed almost entirely by a 5β system out of which arises the Bβ minor harmony as well as Aβ, Dβ and Gβ. (Diagram 7.2a shows the system shifts and PCA rises that occur within the exposition.) By the end of the “b” phrase, the Gβ triad has turned into an augmented sixth as part of a cadential motion that overlaps with phrase “c”. As part of the Gβ augmented sixth chord, the E<sub>-</sub> which occurs on the last eighth note of m. 30, has the additional function of returning the system to 2βs, which is sustained into the subsequent bridge period.

FIGURE 7.2: Brahms String Sextet in B $\flat$ , Op. 18 – Extended Tonic System Matrix

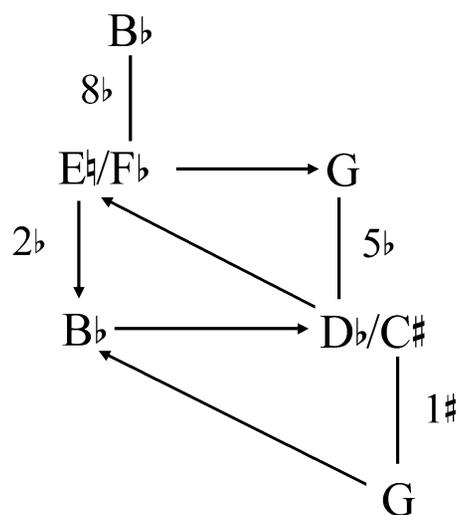


DIAGRAM 7.2a: Brahms, String Sextet in B $\flat$ , Op. 18, 1<sup>st</sup> Movement Exposition: Systems/PCA

**Main dyad conflicts: Gβ/G\_ and Dβ/D\_**

		<b>1<sup>st</sup> Harmonic Area</b>										
		(a)					(b)					
Measure:		1	7	8	10 –	11	17	18	20	21	25	30
Active System Pcs:			Dβ↘	E_↗(E_/Dβ)			Dβ↘	E_↗(E_/Dβ)		Dβ↘		E_↗
System:		2βs	5βs	2βs holds through			5βs	2βs holds through		5βs		2βs
<b>PCA:</b>		<b>Bβ (0)</b>										
Harmony:		Bβ	Gβ			Bβ				bβm– A – Dβ– Gβ–		Gβ
		I	βVI (implies bβm)		V→	I		07		V	i	Aug. 6

**Bridge**

		(c – closing phrase over dominant harmony)										
M.:		31	32	33	37		38	39	40	43	47	48
ASPcs:				(C#/Bβ)			(C#/Bβ)					Dβ↘
System:		2βs remains-----										
<b>PCA:</b>		<b>[Bβ (0)</b>	<b>B_ (1)</b>	<b>C (2)]</b>	<b>[Bβ (0) - B_ (1) -</b>	<b>C (2) - C# - D –</b>	<b>Eβ]</b>					<b>Bβ (0)</b>
Harmony:		F pedal		F						Bβ	fm	
		V6/4 –	07 –	V 5/3						I	v	

**Intermediate Harmonic Area**

M.:	49	50	51	55	59	60	61
ASPcs:		E_↗				C#↗	
System:		2βs				1#	
<b>PCA:</b>	<b>B_ (1) - C (2)</b>			<b>Bβ (0) – B_ (1) – C (2)</b>		<b>C# (3) [D (4)]</b>	
Harmony:	F6/4	F	cm	C7 implies F major	F6/4	AM (unprepared)	
			V	V7/V		III#/V	

	<b>Partial Counterstatement extended into</b>								----- →	<b>Closing: Part I</b>		
M.:	66	67	68	69	79	80	81	82	83	84	85	
ASPcs:		Bβ↘		C#↗	Bβ↘		C#↗	Bβ↘				
System:		2βs		1#	2βs		1#	2βs sustained	-----			
<b>PCA:</b>	<b>D (4)</b>		<b>[D# (5)]</b>	<b>E_ (6)]</b>				<b>Eβ (5)</b>	<b>E_ (6)</b>	<b>F (7)</b>		
Harmony:	dm	C7	F	A6/4	gm6	cm	AM	F7 → Bβ	C	→	F	
	vi/V	V7/V	V				III#/V		IV	V6/4 -7/5/3	V	
	-----		-----					-----				
											V	

	<b>Counterstatement</b>						<b>Transition</b>
M.:	90	91	92	94	99	100	101 103
ASPcs:							C#↗
System:	(2βs)						1#
<b>PCA:</b>	<b>[Bβ (0)</b>	<b>B_ (1)</b>	<b>C (2)]</b>	<b>Bβ (0)</b>	<b>B_ (1)</b>	<b>C (2)</b>	<b>C# (3) – D (4) [pcs 5 &amp; 6 missing]</b>
Harmony:			F				B_ pedal
			V				07 sustained to closing II

	<b>Closing: Part II</b>					
M.:	107	109	112	119	120	121
ASPcs:					C#↗	Bβ↘
System:					1#	2βs remains to the end of the expo.
<b>PCA:</b>	<b>F (7)</b>	<b>[Bβ (0)]</b>	<b>Bβ (0)</b>	<b>B_ (1) - C (2) - C# (3) - D (4)</b>		<b>[D# (5) -----</b>
Harmony:	C pedal throughout (lengthy crescendo)			-----		
	F6/4 – C7/5/3			pcs 1-3 are played as a simultaneity		
	V6/4	V7/V				

	Transition back to repeat						
M.:	126	127	130	131	137 – 139	140	
<b>PCA:</b>	-----] <b>Eβ (5)</b>	<b>E_ (6) -----</b>	<b>E_ (6)</b>	<b>F (7)</b>	<b>F (7)</b>		:
Harmony:			C7	F 6/4	F5/3	F7	
			V7/V	V6/4	V5/3	V7	

The concluding “c” phrase also has the distinction of beginning the first rise of the exposition’s PCA, namely with pcs 0-3, B $\beta$ , B $_$ , C respectively. As Diagram 7.2a indicates, however, these pitch classes, and a few that follow, only anticipate the PCA rise, which does not formally begin until m. 48, already within the bridge. As so often happens with PCA rises, composers will reiterate the opening pitch classes of the PCA several times before the line actually begins to unfold in earnest. In Classical sonata-form movements, a repeat of a particular portion of the PCA usually identifies that segment (most often a chromatic trichord) as being a potential source of development. In fact, in a Classical piece, *any* systematic repeat of pitch-class material must be understood as significant within the on-going developmental process of the movement. However, in Brahms, the thematic horizon is often so saturated with chromaticism that all twelve pitch classes of the chromaticized octave are continuously unfolded, and frequently within single periods. Under these circumstances, it is often difficult to determine the significance of individual dyad conflicts and PCA segments, especially when the texture exhibits simultaneous levels of chromatic unfolding. Therefore, both primary and secondary arrays are contrapuntally related to each other. Especially in his early and middle-period works one gets the sense that Brahms’s manipulation of specific chromatic issues never extend beyond the surface level, that is,

specific chromatic relationships are rarely projected into deeper structural levels. Therefore, when pcs 0-3 are unfolded several times in succession, the B $\beta$ —B $_$ —C trichord does not participate in the developmental process. This is also why G $\beta$  and D $\beta$  are not developed in the same rigorous manner as they had been in Haydn's Op. 20 no. 5 string quartet. This situation changes dramatically as Brahms matures as a composer, and is better able to control Classical developmental procedures, both motivic and harmonic, in the manner of Haydn and, especially, of Beethoven. For example, Brahms's last three symphonies work out seminal chromatic issues on a grand scale where all events are related to a single background chromatic issue.

However, in Brahms's B $\beta$  Sextet, once the basic issue of the G $\beta$  triad is raised, G $\beta$ , as a sonority, plays little part in the larger progress of the movement, its role confined to more immediate cadential arrivals where it is turned into an augmented sixth prolonging tonic harmony. Nonetheless, G $\beta$  does play an important role in generating its fifth, D $\beta$ , the missing pitch of the tonic system, and therefore a significant system pitch-class motivator. As was demonstrated above, Brahms does begin to develop the D $\beta$  in the "b" phrase of his opening statement, but then temporarily leaves off any further discussion of this pitch during the more intensely chromatic closing "c" phrase and the start of the unfolding PCA. Interestingly, Brahms never uses the D $\beta$  as an

agent of modulation in the form of an augmented sixth, in the way Schumann composes out the G $\beta$  in his E $\beta$  Major Piano Quintet, Op. 44, discussed above. Nor does D $\beta$ , as the tonic's minor third degree, ever participate in any large-scale unfolding of the minor tonic triad, the way Schubert does in his C Major String Quintet. In all likelihood, Brahms was deliberately trying to avoid seeming to be overly influenced by his immediate predecessors.

The chromatic unfolding in phrase "c" brings up certain important matters. Diagram 7.2a only depicts only those pitch classes associated with the PCA. In fact, Brahms unfolds not only pcs 0-3 but also follows this with pcs 4 and 5 (all these pitches are in the second cello part). However, what is not shown in the diagram are the chromatic pitch classes in the upper voices which simultaneously unfold a secondary array of an almost complete chromatic octave, missing only pc 10. But while these pitch classes, whether they occur in the bass or in the upper parts, may anticipate the structural rise of the PCA, none of them can as yet be considered structural (that is why they are indicated in brackets in the diagram); in other words, they do not support any large-scale harmonic motion towards the primary and secondary harmonic goals of the exposition: all the music contained within the opening statement is still heard within tonic harmony. Since the function of the bridge, whether or

not initiated by a counterstatement, is to modulate to the second or intermediate harmonic area, the chromatic pitch classes of the PCA are now be said to be “activated”, that is, they gain structural significance through their support of motion towards the next large scale harmonic area.

In the B $\beta$  Sextet, the bridge (mm. 43 ff.) begins on tonic harmony (see Ex. 7.3b), reiterating pc 0, B $\beta$ . In mm 48-9, the first cello restates B $\beta$  and immediately ascends to B $_$  (pc 1) and C (pc 2) in the next measure. Even though the viola part simultaneously presents D $\beta$  (pc 3), which causes a temporary system shift to 5 $\beta$ s in the process, and D $_$  (pc 4), the viola’s pitch classes are not considered within the formal PCA since they are not a continuation of the series which becomes activated with pc 0 at the start of the bridge, and which then connects to the first cello’s ascending line in mm. 48-9. The viola part’s D $\beta$  serves another purpose entirely: the resulting 5 $\beta$  system conditions motion towards F minor harmony and simultaneously sets up the subsequent series of system shifts that leads into the 1# system that controls the upcoming A major intermediate harmonic area. At the same time, pcs 3 and 4 in the viola further articulate the dyad conflict between D $\beta$  and D $_$ , while D $_$  also prepares the return to the 2 $\beta$  system in m. 50. Diagram 7.2a details all the system shifts in the exposition.

EXAMPLE 7.3b: Brahms, String Sextet in B $\flat$ , Op. 18, 1<sup>st</sup> Movement, Bridge –  
Intermediate Harmonic Area (mm. 43-69)

The image shows a musical score for the Bridge and Intermediate Harmonic Area of Brahms' String Sextet in B $\flat$ , Op. 18, 1<sup>st</sup> Movement. The score is arranged in two systems. The first system covers measures 43-69, with the tempo marking 'tranquillo' and dynamics 'p' and 'dolce'. It includes parts for Violino I, Violino II, Viola I, Viola II, Violoncello I, and Violoncello II. The second system covers measures 67-69, labeled 'Intermediate Harmonic Area', with dynamics 'pp' and 'dolce'. It includes parts for Violino I, Violino II, Viola I, Viola II, Violoncello I, and Violoncello II. The score features various musical notations, including pitch class set labels (PC 0, PC 1, PC 2, PC 3, PC 4, PC 5) and intervallic structures (C $\sharp$   $\uparrow$  11, B $\flat$   $\downarrow$  2/6). The key signature is B $\flat$  major, and the time signature is 3/4.

As so often occurs in sophisticated sonata-form movements, several

operations take place concurrently, and on different structural levels. It is often expedient to discuss these various operations together so that the reader may understand how the various levels of chromatic unfolding interact. For example, consider the nature of the A major intermediate harmonic area in terms of simultaneous chromatic operations (refer to Ex. 7.3b as well as Diagram 7.a). Within the bridge, pcs 0-2 form a trichord that is repeated three times, each time within a slightly different harmonic context. The first presentation of the trichord discussed above points towards F major, the major dominant, by emphasizing its fifth degree, C. At first, this trichord begins within the area of the minor dominant, controlled by the  $D\beta$ 's shift into a  $5\beta$  system, but by the end of the trichord's appearance (last beat of m. 49), pc 2, C, is heard within an F major 6/4 chord. The major mode is confirmed by a system shift up to  $2\beta$ s in m. 50, effected by the  $E_{-}$  in that measure. The second iteration of this trichord comes at the tail end of a secondary chromatic rise in cello II (mm. 55-58), answered in stretto by cello I, also ending with the same trichord a measure later. Cello II's restatement of pcs 0-2 comes out of a progression that begins in C minor, a motion which parallels the previous F minor harmony that initiated the first statement of the trichord, but now continues into an implication of the major dominant, F, via  $C7$ , its own dominant seventh. Thus pc 0 ( $B\beta$ ) and pc 2 (C), are chord pitches

within the V7/F (see Ex. 7.3b, m. 59). At the end of cello I's PCA trichord, the V7/F seemingly resolves to an incomplete F 6/4 chord (last beat of m. 59-60) with C (pc 2) in both cello parts. The emphasis on pc 2 as a *terminus* prepares for the first significant harmonic event of the exposition, the arrival of an intermediate harmonic area.

Brahms's treatment of A major as an incomplete harmonic area, parallels Schubert's treatment of Eβ in the first movement of the latter's C Major String Quintet as an intermediate harmonic area that turns out to be a contrapuntal extension of tonic harmony. Specifically, Schubert's C major tonic progressed to a lyric episode in Eβ that was never defined by a dominant progression, but instead wandered almost wistfully back into C major at the conclusion of both its periods. Brahms does exactly the same, but here the A major is quite dissonant against the tonic and is not part of an arpeggiation of tonic harmony (Schubert's exposition unfolds the tonic minor over the course of its exposition). Therefore A major relates not to the tonic, Bβ, but, rather, to the dominant, F, as III#/V. Similar to the Schubert quintet, Brahms veers the A major harmony away from itself, not back towards the tonic, as happens in the Schubert, but towards F, the dominant, via a D minor triad acting as vi/V (see Ex. 7.3b). After a rather weak cadence on F, the phrase repeats (as it does in the Schubert), but this time it is extended, the

progression refusing to resolve to the dominant until m. 85, where a much stronger cadential motion finally anchors the dominant at the start of an extensive two-part closing area.

An analysis of the intermediate harmonic area clearly reveals how the pitches of the PCA intersect with the system shifts that operate on a deeper structural level, and how both these operations control the harmonic unfolding. For example, the PCA rise that centered on the first three pitch classes during the bridge period, pointed towards dominant harmony. The octave Cs in the two cello parts at the end of the period now move onto the next pitch in the series, C#, pc 3, which remains in the bass as part of a first inversion A major triad. The arrival of pc 3 within the PCA is always a major event, for it is the missing pitch of the tonic tritone system, and therefore invariably causes a harmonic disruption that is supported by a system shift, in this instance, up to a 1# system. Brahms dramatizes the arrival of C# by keeping pc 3 in the bass, doubled at the octave. When pc 3 continues to pc 4, D<sub>2</sub>, in m. 66, this pitch too is kept in the bass, forming a D minor harmony that throws the progression towards F major. The dominant seventh that follows raises B<sub>β</sub>, the complementary system-shift motivator to C#, causing the system to descend into 2<sub>β</sub>s, which supports the move into F major harmony. The 1# system returns in m. 69 as the music moves back into a repeat of the theme,

this time starting on an A 6/4 chord. In the approach to the repeat, the D<sub>-</sub> climbs up two half steps, first to D<sup>#</sup> and then to E<sub>-</sub>, the bass of the 6/4 harmony (m. 69).

At first glance, these two notes could be mistaken for PCA pitches, but in actuality, they play no significant role in directing the music towards its ultimate goal, F major; they simply serve to articulate the repeat of the theme of the intermediate area. The actual continuation of the PCA ascent does not resume again until m. 82, where the previous D<sup>#</sup> is enharmonically respelled as an E<sub>β</sub>, functioning as the seventh of a V7/IV chord that is in itself part of a larger progression leading straight into the F major closing area, part I. By beginning the progression to the dominant with subdominant harmony, and, consequently, raising B<sub>β</sub>, the system now reverts to 2<sub>β</sub>s (m. 82) in preparation for the arrival of the dominant. What makes the E<sub>β</sub> more significant as a PCA pitch than the earlier D<sup>#</sup>, is that E<sub>β</sub> is presented close to the point of dominant arrival. As a result, when E<sub>β</sub> as pc 5 is displaced by the leading tone, E<sub>-</sub> as pc 6, two measures later, which immediately revolves to F, pc 7, as the chromatic goal of the exposition, the proximity of these pitch classes a half step apart, strengthen our aural understanding of a systematic, ordered succession of continuously displaced half steps that act as a *cantus* directing the underlying harmonic progression towards its goal.

In summary, not every grouping of half steps that seems to follow the chromatic ascent of the PCA will have the function of leading the music towards a goal. That is why certain groupings may be “more structural” than others. Sometimes the choice of which chromatic group (dyads, trichords, tetrachords, etc.) is the more significant must be left up to the performer or analyst, just as it often is in other theoretical constructs that deal with complex music.

Similar to Schubert’s C Major String Quintet, Brahms, in the B $\beta$  Sextet at least, also constructs his exposition as a series of large-scale, self-contained periods, each with its own distinctive thematic profile. Especially within the intermediate and closing areas, each subsection of the form borrows its melodic style from the Austrian *Ländler*, a popular folk dance in triple meter, and a favorite *topos* in Brahms’s instrumental music. Consequently, the two closing sections are relaxed in feeling and are relatively diatonic, especially when heard coming after the chromatic intensity of the opening and intermediate harmonic areas.

The progress of the PCA, along with the various shifts, are detailed in Diagram 7.2a; however, we need to comment further on three important points. First, supporting the diatonic, almost folk-like thematic material and expression of the music from the intermediate area to the end of the

exposition, the system shifts are confined to 2βs to 1#, each system covering a wide expanse of music. One may conclude, therefore, that the more diatonic the music, the less system activity is likely to take place. Second, the first closing area, similar to the repetitions of PCA pitch classes within the intermediate harmonic area, replicates the first 3 pitches of the PCA (see Diagram 7.2a), the second repetition of which is more structurally significant since pcs 3 (C#) and 4 (D) follow almost immediately within the short transition to the second closing period. But here too, note that pcs 5 and 6 are missing. We can explain the missing pc 5 as a pitch that is often skipped at this juncture since it is a diatonic pitch that is displaced by the leading tone within the dominant area. But how do you explain the missing E<sub>2</sub>, pc 6? As it happens, the second closing area starts inconclusively on 6/4 harmony and more or less stays there, with C in the bass, oscillating between F 6/4 and C7 chords until the very end of the exposition. Melodically, the E<sub>2</sub> does resolve to F *after* the second closing area has started (mm. 110-11, in the second violin part). Therefore, one may conclude that the PCA rise continues through the start of the second closing period because of the unstable nature of the harmonic progression.

The third point involves the final PCA ascent contained within the second closing period. Here, the PCA is complete, reiterating pcs 0-7,

however, at one point Brahms sounds three pitch classes of the series simultaneously. Oddly enough, Haydn often does this but both Mozart and Beethoven rarely, if ever, present PCA pitch classes in this manner. The simultaneity within the PCA rise occurs in m. 120, where pcs 1 (B<sub>-</sub>), 2 (C<sub>-</sub>) and 3 (C<sub>#</sub>) are sounded on the downbeat as a non-chordal dissonant *Klang* in which both C<sub>-</sub> (held as a pedal throughout the closing period) and C<sub>#</sub> are dissonant against B<sub>-</sub>, which forms the root of a diminished seventh chord. The C<sub>#</sub> is not only pc 3 of the PCA, but also effects a system shift to 1<sub>#</sub>. Within the measure, C<sub>#</sub> continues up to D as pc 4, which is then displaced by D<sub>#</sub>, pc 5, in the next measure where B<sub>β</sub> reverts the system to 2<sub>β</sub>s. Similar to what occurred in the intermediate harmonic area, D<sub>#</sub> is enharmonically respelled as E<sub>β</sub> in m. 126 (viola I) before rising to E<sub>-</sub>, pc 6 in the next measure. Pc 6 is sustained until it resolves to F, pc 7, in measure 131, which completes the exposition's PCA segment.

*Παγε 24*

What makes the development section of this sextet remarkable is the ordered intensity of its systems from 1# at its commencement to an extreme 8βs at its climax (see Diagram 7.2b). This is partly due to an innovative stylistic trait of Brahms that governs the background harmonic plan of many of his developments; that is, approaching the recapitulation through a subdominant cycle rather than through the more traditional dominant. In these cases, Brahms starts the development by moving along the dominant side of the key, and then, approximately half way through the development, switches course to flat-side harmonic areas. A consequence of this procedure is that the arrival at the recapitulation is contrapuntally conceived rather than harmonic, which weakens the tonic arrival, there being no authentic cadence to prepare for its return. Quite often, with a contrapuntal progression leading up to the tonic, the tonic itself is presented in 6/4 position, as it is here (Brahms's Op. 34 Piano Quintet also recapitulates the tonic in 6/4 position). Brahms was most probably influenced by Beethoven in this regard (cf. the first movement of the String Quartet, Op. 59 no. 1), for it was Beethoven who popularized the idea of pushing the tonic resolution further and further into the recapitulation itself. Of course, there are any number of examples by Haydn and Mozart that do something similar, but nineteenth-century Romantic composers were more likely to look to Beethoven for models

of compositional design and harmonic innovation.

**The first half the Development follows a dominant cycle of minor-mode harmonic areas**

	Motivic references to the opening theme										
<b>Measure:</b>	141	142	146 – 147	153	158	159	165 – 167	173	177		
<b>Active System Pcs:</b>	C#↗		Bβ↘				C#↗	Bβ↘			
<b>System:</b>	1#		2βs sustained	-----				1#	2βs		
<b>PCA:</b>	F# (8)	G (9)		[G# (10)]	[G# (10 --	A (11)]				G (9)	
<b>Harmony:</b>	D6		D7 → gm			am	A6/5 → dm	gm		G7/cm	
<hr/>											
		<b>Climax</b>									
<b>M.:</b>	178	182	-----	183	184	185	186	187			
<b>ASPs:</b>	C#↗	Bβ↘	-----	Dβ↘ (E_/Dβ)	(E_/Dβ)	(E_/Dβ)	(E_/Dβ)	E_↗			
<b>System:</b>	1#	2βs		5βs holds through	-----				2βs		
<b>PCA:</b>		<b>Aβ (10) sustained but embellished by A_</b>									
<b>Harmony:</b>	G pedal	E_ 07 →		fm						C	
	Relates to cm										
<hr/>											

**Second half of the Development follows a subdominant cycle**

	Intermediate area theme										
<b>M.:</b>	192	193	203	204	205	207	209	210	211	212	213
<b>ASPs:</b>		C#↗		Bβ↘	C#↗	Bβ	Dβ↘			E_↗	C#↗
<b>System:</b>		1#		2βs	1#	2βs	5βs			2βs	1#
<b>PCA:</b>		[A_ (11)]						Aβ (10) regained		[A_ (11)]	
<b>Harmony:</b>	em prolonged		A7 →	dm prolonged				Eβ7 → Aβ		Dm 6/4	A7
	(5-6 exchange with C)										

DIAGRAM 7.2b: Brahms, Sextet for Strings in B $\beta$ , Op. 18, 1<sup>st</sup> Movement Development: Systems/PCA

	<b>Retransition</b>					
M.:	214	218	220	222	223	226 230 231-32 233
ASPcs:	B $\beta$ $\blacktriangledown$			D $\beta$ $\blacktriangledown$ F $\beta$ $\blacktriangledown$		
System:	2 $\beta$ s			5 $\beta$ s 8 $\beta$ s sustained		
<b>PCA:</b>				<b>A<math>\beta</math> (10) regained -----</b>		
Harmony:	B $\beta$ $\rightarrow$ E $\beta$	A_ 07 $\rightarrow$	B $\beta$	G $\beta$ 7	C $\beta$ 6/4	<b>A_ (11) finally displaces A<math>\beta</math></b> G $\beta$ 7 $\rightarrow$ G $\beta$ aug. 6
	V/IV	IV		V7/C $\beta$ (G $\beta$ pedal)		

---

**RECAPITULATION**

**1<sup>st</sup> Harmonic Area**

M.:	234	235
ASPcs:	G_ $\blacktriangleright$	E_ $\blacktriangleright$
System:	5 $\beta$ s	2 $\beta$ s
<b>PCA:</b>	<b>B<math>\beta</math> (0)</b>	
Harmony:	I 6/4	

Beethoven may have been innovative in his approach to the sonata recapitulation (see Chapter 6), but Brahms's solution of dividing the development in two, each half moving along a different projectory of the cycle of fifths, is quite definitely his own creation. In the case of the B $\beta$  Sextet, the harmonic areas in the first half of the development move up in fifths, mostly in minor mode. The background progression moves from D major to G minor, to C minor, and finally to F minor, with the whole section ending on C, the dominant of that area (see Diagram 7.2b). A change in thematic design, as well as a change in harmony, clearly sets the second half of the development apart from the first, the whole second half based on a motivic exploration of the theme associated with the intermediate area. Harmonically, the second half begins on E minor harmony (Diagram 7.2b) and proceeds from there into ever more flat-side harmonic areas: E $\beta$  to A $\beta$ , climaxing on C $\beta$ , but ending on G $\beta$ , the dominant of the area, thus forming a parallel with the previous C major dominant that ended the dominant cycle. As it happens, the G $\beta$ 7 turns into an augmented sixth which then resolves to an unstable tonic B $\beta$  chord in 6/4 position, at the start of the recapitulation. Thus Brahms, as did Beethoven before him, avoids the usual dominant preparation in favor of purely contrapuntal motion into the recapitulation, which now awaits a more definitive rhythmic and harmonic tonic resolution.

As to the completion of the first PCA ascent in the development (remember that there is a restatement of the entire PCA in the recapitulation), the development begins in D major harmony with F# in the bass as pc 8. Incidentally, here is a good example of how a knowledge of the PCA helps us understand a composer's choices: in this case, why Brahms should start the development on an inverted D major triad. Brahms's interest in maintaining a linear chromatic ascent in the bass from the end of the exposition, seems to override an overtly harmonic conception, since D major serves no harmonic function with either the dominant, F, or the tonic, B $\beta$ . Our perception of a deliberately ordered chromatic ascent is further supported as the F# in the bass resolves up to G, pc 9, in that register as the music enters G minor harmony. As Diagram 7.2b shows, despite a move up to pcs 10 and 11 (G# and A respectively), first in the upper voices and then replicated in the bass (mm. 158-9), the actual progress of the PCA ascent does not end here (A as the root of A minor harmony cannot yet act as a leading tone to the tonic B $\beta$ ); rather, the line more convincingly continues in m. 177 where G, pc 9, is regained in the bass, as the root of a C9 chord, which leads into the climax of the development's first half in F minor harmony. As such, G is displaced, not by G#, as it was previously, albeit temporarily, but by A $\beta$  as pc 10, which conclusively resolves to A\_, pc 11, in mm. 211-12, right before the

retransition in m. 214. (Incidentally, all these pitch classes, including those that follow in the development, remain in the same bass register.) At this point, the A<sub>-</sub> temporarily resolves to B $\beta$  and the tonic then immediately turns into a V/IV, the whole harmonic direction of the retransition plunging ever deeper into the subdominant side of the cycle of fifths and reaching its climax in C $\beta$  harmony. During this C $\beta$  passage, A $\beta$  returns, but only as a dissonant lower dyadic neighbor to the A<sub>-</sub>, and, more tellingly, only in an upper register; the A<sub>-</sub> finally displaces the former pitch in m. 230.

Throughout the development the PCA rise has remained consistently in the bass register. Brahms maintains this register as A<sub>-</sub>, pc 11, resolves up to B $\beta$ , pc 0, within 6/4 harmony at the point of tonic return (mm. 233-34). Without a formal authentic cadence to prepare for the recapitulation, A<sub>-</sub> is treated as a dissonance against the G $\beta$  augmented sixth harmony that displaces the normal dominant seventh at this point. In the measures directly preceding the recapitulation, the B $\beta$  tone of resolution is heard, not as tonic, but as part of that same augmented sixth chord, finally revealing itself as tonic at the point of recapitulation, as the G $\beta$  resolves down to F, remaining as pedal for several measures into the recapitulation.

The instability of the tonic in 6/4 position is also mirrored by intense system activity. The recapitulation itself, carries over the 8 $\beta$  system from

the previous C $\beta$  area. Almost immediately, within the second measure of the recapitulation (m. 235), both G $_$  and E $_$  raise the system back up, first to 5 $\beta$ s and then to 2 $\beta$ s. However, in recapping the opening theme, the same plunge into the 5 $\beta$  system that was caused by introducing D $\beta$  within G $\beta$  harmony at the end of the first phrase of the melody, now reoccurs in m. 240. The return both D $\beta$  and G $\beta$  at this point is made all the more effective coming from a retransition that featured both D $\beta$  as a 5 $\beta$  system-shift motivator and G $\beta$  as a harmony operating within an 8 $\beta$  system, which culminated in the G $\beta$  as an augmented sixth chord. In this way, Brahms is actually developing the potential of both these pitch classes to further control the harmonic progress of the movement at this juncture within the form.

Following the recapitulation of the “a” phrase, Brahms tightens the phrase rhythm by omitting the second phrase of the melody (“a<sup>1</sup>”) and, instead, builds up dominant seventh harmony which refuses to resolve until an authentic cadence to the tonic is finally achieved at the start of the bridge (m. 268-69), resolving the previous unstable 6/4 harmony in the process. The conclusion of the bridge is notable for the rapid unfolding of the recapitulation’s first PCA rise, whose goal, this time, is pc 8, F#, as part of D major harmony, the transposition down a fifth of the A major harmony of the intermediate area in the exposition. Brahms again begins the PCA with its

opening trichord, pcs 0-2 before repeating the entire series, pcs 0-8 in an upward thrust (notably in the bass register) in mm. 282-87. The arrival to D major is not any more established than A major was in the same spot in the exposition. In this case, no harmonic progression supports D major as an area; rather, the opening phrase of the melody falls to the tonic, B $\beta$ , just as A major had previously fallen to F, the dominant. Incidentally, both areas, the A major and its transposition to D major, are initially governed by a 1# system occasioned in each case by C#. Of course, B $\beta$  as tonic, impedes the progress of D major to sustain itself as a harmonic area, and a conflict now ensues between the 1# system and its complement, 2 $\beta$ s, the later system “winning out” over the persistent C#s. Following this, and similar to its presentation in the exposition, the first closing area is completely diatonic and remains entirely within the 2 $\beta$  system until the end of m. 328 where D $\beta$  now re-enters the picture.

As a matter of fact, D $\beta$  returns with a vengeance, once and for all displacing its enharmonic equivalent, C#, which had been maintained as an active system-shift motivator throughout the recapitulation’s transposed intermediate harmonic area. As though to signify its importance as a governing pitch class over the course of the movement, D $\beta$  now plays a substantial role in bringing the movement to its conclusion, which also includes the resolution

of the  $D\beta$  back to its chromatic neighbor,  $D_-$ , conclusively resolving one of the movement's two major dyad conflicts. The other is  $G\beta$  and is the last conflict to be resolved. First,  $D\beta$ , when it is reintroduced in m. 328, causes a major system shift down to  $5\beta$ s, which, despite the attempts of  $E_-$  to redress the system to  $2\beta$ s, is sustained over a considerable stretch of music. Only with the onset of the coda in m. 363, does  $E_-$  effect a shift back up to  $2\beta$ s, in m. 364. There, the  $2\beta$  system remains in force to the end of the movement, the  $D\beta$  returning only twice more and each time pitted against  $E_-$  which prevents any system change back to  $5\beta$ s. Significantly, the last time  $D\beta$  is heard in the first movement (m. 382), it is sounded not only against the  $E_-$ , but the two pitches are also linearized in the first cello part as an augmented second,  $D\beta$  on the first beat of the measure *followed by*  $E_-$  on the second. By having the  $E_-$  follow the  $D\beta$  as a melodic event, thereby negating the ability of  $D\beta$  to force a system change in its favor, Brahms dramatizes the end of  $D\beta$ 's modulatory role in the movement. From that moment on, no further  $D\beta$ s (or  $C\#$ s for that matter), disturb the prevailing  $2\beta$  system. As a final gesture, Brahms now reiterates an almost complete PCA rise, now transferred into the soprano register. With  $F$  again serving as a pedal, the first violin part climbs up the chromatic scale from pc 4 to pc 0 (mm. 391-395), spelling pc 8 as  $F\#$ , representing the final resolution of the  $G\beta$  into its enharmonic

equivalent, no doubt in order to make the chromatic ascent all the more effective.

*b). Sextet in B $\beta$ : Further Analytical Observations*

As in all tonal pieces, no matter how dense the chromaticism, the system operations observed in Brahms's B $\beta$  Sextet illustrate another characteristic of system analysis that needs to be clarified at this point, namely, harmonic area in relationship to system. It is worth repeating that any given system that is in control at any point within the composition *lies at a deeper structural level than the harmonic area being expressed*. We should remember that tritone systems are 11-note pitch-field gamuts that can be formed into any number of harmonic areas, small or large, including passing and/or prolonging motions (such as one finds within fifth cycles) and so long as the missing pitch of that system is not activated. Furthermore, a system that "controls" a harmonic area means that it determines the extent to which that area is sharp- or flat-side oriented. There are cases, however, where a sharp-side harmonic area is short enough that it will not disrupt a flat-side system, simply because the harmonic area will not contain enough pitch material to effect a modulation out of the prevailing system. But in most

instances, there seems to be a coincidence between a given system and the harmonic area generated from it. As an illustration, the following chart summarizes the harmonic areas and their underlying systems as they occur in the Brahms Sextet:

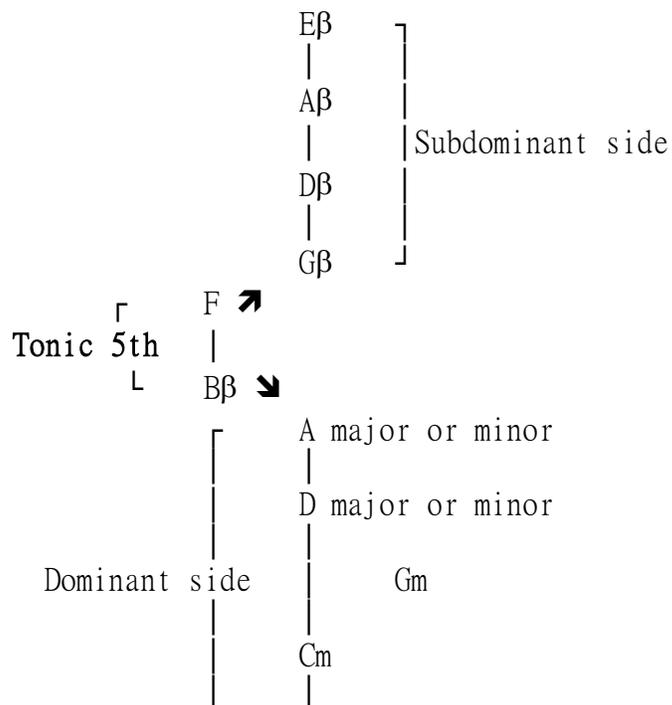
<b>2βs</b>	<b>1#</b>	<b>5βs</b>	<b>8βs</b>
Em	Dm	Aβ	(Bβ)
C	D	Fm	Cβ
Am	A	Dβ (only as V/Gβ)	
F		Gβ	
(Bβ)		Bβm	
Gm			
Eβ			
Cm			

Under each system in the above list, the harmonic areas are arranged in ascending order of sharps and flats no matter how short or undefined. It is no surprise that the tonic 2β system should control the greatest number of harmonic areas and, considering the importance of Dβ as a source of development in this work, it is also not a surprise that its 5β system should have the second largest number. As was mentioned previously, a particular harmonic area may be found in more than one system, depending on the extent of its pitch material: an area may contain only a few harmonies, sometimes no more than tonic and dominant, allowing it to be present in systems of greater or lesser sharps or flats. Invariably, these areas are of short duration and

either quickly revert to a system that more appropriately matches their implied key signatures, or will act as brief passing harmonies within more relevant areas within the governing system. For instance, B $\beta$  as a harmonic area (put into parentheses in the above list) is an area, in fact the only one, that appears in more than one system. Its existence within the 2 $\beta$  system needs no comment, and we have already discussed its dramatic appearance within the 8 $\beta$  system that overlaps the start of the recapitulation. The latter is an instance where the correcting pitch, or pitches in this case, does not arrive to correct, and therefore to coordinate, the system with its harmonic area until one measure after the tonic has been regained.

Another theoretical point, one that has far-reaching consequences for the future development of the tonal system, concerns Brahms's method of juxtaposing, by means of half-step motion, two or more seemingly distant harmonies or harmonic areas that branch out from the tonic and its fifth. These distant areas represent motions to either extreme flats or sharps to that of the tonic and are arrived at by moving either the tonic pitch down a half step or by moving the dominant fifth up a half step, thereby creating a new set of fifths that can then continue to unfold in the same direction either up or down the fifths cycle. Using the B $\beta$  Sextet as an example, we notice two such prominent juxtapositions: G $\beta$  major emanating from a half-step

motion up from F, the fifth degree from the tonic, and A major emanating down a half-step from B $\beta$ , the tonic root. The whole operation may be illustrated as follows:



L Fm

By branching out in this manner, Brahms can cut across the cycle of fifths as an alternative to enharmonic respelling (meaning that Brahms does not have to change the spelling of a particular pitch class to move instantly to harmonic areas that lie on the opposite side of the cycle of fifths ), generating unusual harmonic relationships contrapuntally that are not limited solely to the more traditional Neapolitans. These distant harmonies may actually continue in a direction further away from a central point by adding more harmonic areas by an expansion of ever more fifths to explore even greater distant relationships to the tonic. Most importantly, they can return along the same path just as quickly to restore tonic harmony. With this realization, we can now find a practical explanation for how Brahms arrived at his intermediate harmonic area in A as simply a half-step motion down from the tonic. The A, in turn, will generate the D below it at the same spot in the recapitulation. By continuing the fifths sequence from D, we can also see how G minor, C minor, and F minor are generated as important areas within the development. On the other side of the cycle, G $\beta$  generated as a half-step motion up from the tonic fifth, F at the start of the exposition, will itself generate D $\beta$ , A $\beta$  and E $\beta$ , these areas also play important roles within the

development. In fact, every area in the movement can be accounted for as an extension from either the sharp-side or flat-side fifth cycles that branch out from the primal tonic fifth of the key.

This method of deriving keys from half-step motions emanating from the tonic fifth works hand-in-hand with the theory of systems developed in this book. These distant fifths to tonic harmony may cause system shifts in the process of their expansion. This is the case with  $G\beta$ , whose expansion from its own fifth,  $D\beta$ , creates a shift into a  $5\beta$  system. Similarly, the A that ultimately derives from  $B\beta$ 's expansion down a half step, is governed by the  $1\#$  system created by the presence of its third degree,  $C\#$ . Therefore, an understanding of the tonic system matrix can be used as a model to demonstrate how the introduction of the missing pitch, in either of its enharmonic variants, can support an unexpected branching from a tonic fifth into distant harmonic relationships that would otherwise be cumbersome, if not difficult to comprehend.

Finally, it is possible not only to juxtapose the tonic fifth temporarily into harmonic areas that quickly revert to tonic or dominant harmony, as is the case in this work, but to maintain the branching to a point where our understanding of the tonic itself is in jeopardy. Admittedly, Brahms's use of this device in this work is still of an experimental nature,

and not that far removed from similar instances in Schubert and Schumann. However, his second sextet in G major brings us closer to the world of Debussy and early Schoenberg.

*c). Brahms String Sextet in G, Op 36 (1864), 1<sup>st</sup> Movement*

In terms of its general design and harmonic structure, the G Major Sextet is similar to its earlier B $\beta$  contemporary, composed some four years previous. However, the G Major Sextet is far more motivically dynamic, achieving hair-raising climaxes that the earlier work, infused with an all-pervading, dance-inspired lyricism, cannot match. Of greater importance to our present discussion is Brahms's daring advances in his use of contrapuntally related distant harmonic areas, both implied and realized, through fifths generated a half-step from the tonic or dominant fifth. It is this last point with which we will start our discussion.

Example 7.4 gives the opening period up to the counterstatement of phrase "a". Typical of Romantic opening statements that follow Schubert's model, Brahms's first harmonic period, up to the bridge, is an expansive 95 measures whose phrases divide into the rounded binary pattern of the song form, a<sup>1</sup> b a, so favored by Schubert and his successors, and which we have

already seen in the earlier B $\beta$  sextet. In general, analysts agree that the opening introductory viola figure, with its oscillating G-F# half step, provides the basis for all the motivic material of the movement.<sup>5</sup> But what we find most intriguing is the sudden jump into the neighboring E $\beta$  – B $\beta$  fifth that takes place so early in the melody (m. 5), and which is obviously prepared by the half-step viola figure that precedes it. With this sudden shift into flat-side harmonies, Brahms also raises the basic dyad conflicts of the movement, if not the whole sextet: B $\beta$ /B $_$  and E $\beta$ /E $_$ , the B $\beta$  also playing into the system conflicts that govern the course of the movement.

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<sup>5</sup>See, for example, Margaret Notley, “The Chamber music of Brahms,” in *Nineteenth-Century Chamber Music*, Stephen E. Helfing, ed. (London: Routledge, 2004): 253.

*Παγς 41*

Right from the start, Brahms opposes the tonic fifth, G – D, with a symmetrical complement that has entirely replaced the usual dominant needed to define a key! This Neapolitan to the fifth degree (melodic, not harmonic) is quite unlike the one we saw previously in the B $\beta$  sextet, where the tonic was fully established *before* the phrase turned towards the  $\beta$ VI. Thus, in the earlier sextet,  $\beta$ VI functioned as an upper neighbor embellishment to the dominant within a well-defined tonic progression. However, in the G major sextet, at the point where the  $\beta$ VI is introduced, the meaning of the progression has yet to be determined! Without a defining dominant, Brahms posits a symmetrical relationship between a G – D fifth and an E $\beta$  – B $\beta$  fifth that, at first, is of equal weight. Note, also, that B $\beta$ , the minor third of the key, and its system-shift motivator, arises out of E $\beta$  and is not associated with G as its parallel tonic minor, at least not during the “a” phrase at the start of the exposition. Schubert too avoids connecting the minor third of the key to its parallel minor in the first movement of his C Major String Quintet. However, unlike Brahms, who will, in fact move into the tonic minor at various points within the movement, Schubert keeps the minor third degree from ever being associated with the parallel minor any where in the movement. Also, unlike Brahms, Schubert, at the start of his C major exposition, introduces the E $\beta$  as a single pitch class within diminished

harmony, and not as the root of a disjunct fifth.

With Brahms, raising a sustained  $2\beta$  system by introducing  $B\beta$  into the pitch field supports the symmetry between the two fifths,  $G - D$  and  $E\beta - B\beta$ , a polarity which is decided in favor of the tonic,  $G$ , only when the  $E\beta - B\beta$  fifth descends to a cadential  $6/4$  (m. 9). At this point,  $E\beta$  is recognized as  $\beta VI$  within the phrase. Yet, even though the tonic is eventually defined by a full progression that includes the dominant, the system remains in  $2\beta s$  until the counterstatement finally presents  $C\#$  (see Diagram 7.3a)

**EXAMPLE 7.4: Brahms, Sextet for Strings, Op. 36, 1<sup>st</sup> Movement, mm.1-53**

Παγς 43

Exposition  
1st Harmonic Area

B $\flat$  2/s - sustained

Violino I  
Violino II  
Viola I  
Viola II  
Violoncello I  
Violoncello II

(a)

*p mezza voce*  
*pp*  
*pp*  
*pp*  
*pp*  
*pp*

14

(a')

*pp*  
*pp*  
*pp*  
*pp*  
*pp*  
*pp*

27

(b)

*dim.*  
*pp*  
*pp*  
*pp*  
*pp*  
*pp*

40

*molto p dolce*  
*pp dolce*  
*pp*  
*pp*  
*arco mezza voce*  
*p dolce*  
*pp*

DIAGRAM 7.3a: Brahms, Sextet for Strings in G Major, Op. 36, 1<sup>st</sup> Movement Exposition: Systems/PCA

1 <sup>st</sup> Harmonic Area: Bβ/B <sub>-</sub> and Eβ/E <sub>-</sub> conflicts introduced													
	(a)		(a <sup>1</sup> )	(b)	-----								
Measure:	3	5	6	17	32	33		38	41	43-44	49	50	51
Active System Pcs:		Bβ↘										(C#/Bβ)	
System:	1#	2βs sustained		-----									
<b>PCA:</b>	<b>[G (0)</b>				<b>G (0)</b>			<b>G# (1)</b>		<b>A (2)</b>			<b>[Bβ (3)</b>
Harmony:	G	Eβ6/4	5/3	G	G	F# –	B –	E –	A –	D	G 6/4	gm 6/4	D
	I	βVI -----		I	I		III#			V	cadential 6/4		V
					┌───┐		Cycle of 4ths -----						
-----													
	Counterstatement (a)											(a <sup>1</sup> )	
M.:	52	53	55	59	62	63		67	69	70	71 – 74		
ASPCs:	C#↗		Bβ↘	C#↗					Bβ↘				
System:	1#		2βs	1#					2βs				
<b>PCA:</b>		<b>B<sub>-</sub> (4)]</b>	<b>Bβ (3)</b>	<b>B<sub>-</sub> (4)</b>	<b>C<sub>-</sub> (5)</b>	<b>C# (6) – D (7)</b>				<b>Eβ (8)</b>			
Harmony:	D	G	Eβ6	D 6/4-5/3				G	Eβ6	F#07	Eβ6	---	
	V	I	βVI	V pedal	-----				I	βVI prolonged-----			
-----													
		Extension of a <sup>1</sup> -----				<b>Bridge</b>							
M.:	75	79	84		94	95	99 - 100		102	105			
ASPCs:	C#↗						(A#/G <sub>-</sub> )						
System:	1#	sustained											
<b>PCA:</b>		<b>E<sub>-</sub> (9) [pc 10 is bypassed]</b>				<b>F# (11)</b>	<b>G (0)]</b>	<b>PCA starts:</b>					
Harmony:	D 6/4-5/3	climactic build-up on V					G	[G (0) G# (1) – A (2)]					
	V pedal	V pedal continues, incorporating					I (1 <sup>st</sup> structural downbeat)	A7→ D					
		the ½- step motive transposed on V						V prepared by V/V					

*Παγε 45*

M.:	108	116	119	120	122	123	124	125	126	127	128
ASPcs:	(A#/G)						(A#/G)	A#↗	G_↘		(A#/G)
System:								4#s	1# sustained	-----	
<b>PCA:</b>	<b>[A# (3) – B (4)]</b>	<b>G (0)</b>		<b>G# (1) -----</b>	<b>G# (1)</b>	<b>A (2)</b>	<b>A# (3)</b>	<b>B (4)</b>	<b>B# (5)</b>	<b>C# (6) -----</b>	
Harmony:		A		Cello I rises in ½ steps						Pc 6 sustained	
		V/V									

**2<sup>nd</sup> Harmonic Area**

M.:	134	135	138	Transition		151	153	155	156	158	159
ASPcs:						Bβ↘	C#↗	Bβ↘		(C#/Bβ)	
System:						2βs	1#	2βs holds through -----			
<b>PCA:</b>	<b>C# (6)</b>	<b>D (7)</b>	<b>[G (0)]</b>					<b>G (0) – Aβ (1)</b>	<b>A_ (2) – Bβ (3)</b>	<b>B_ (4) – C (5)</b>	
Harmony:	A	D		dm				Cello II unfolds a complete ascending secondary chromatic array (SCA) from A' to A (mm. 155-62)			
	V/V	V		v							

M.:	160	162		“Agathe motive”			<b>Closing Period</b> (based on the “Agathe motive”)			Transition	
ASPcs:	C#↗			190	191	192		212	213		
System:	1# sustained until the end of the expo.										
<b>PCA:</b>	<b>[C# (6) – D (7)]</b>			<b>Incomplete PCA:</b>		<b>G (0)</b>	<b>G# (1) – A (2)</b>	<b>C# (6)</b>	<b>D (7)</b>		
Harmony:		A		A7	D				D		
		V/V		V7/V	V				V		

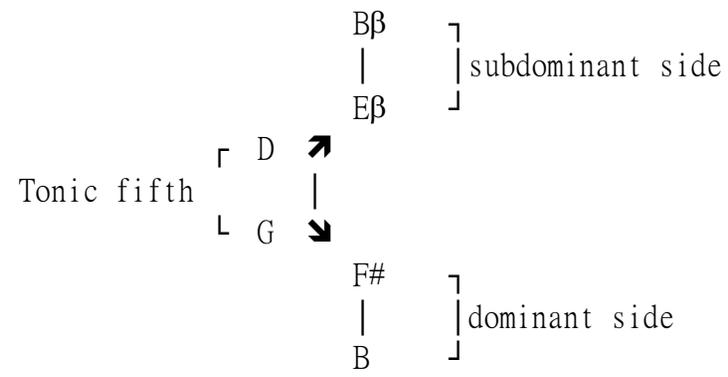
M.:	1 <sup>st</sup> Ending										
ASPcs:	3 <sup>rd</sup> m.	5 <sup>th</sup> m.	7 <sup>th</sup> m.			9 <sup>th</sup> m.	11 <sup>th</sup> m.	13 <sup>th</sup> m.			
System:	(Bβ/C#)	(Bβ/C#)	(Bβ/C#)								
Harmony:				Bβ7 (acts like an aug. 6 <sup>th</sup> to V →		A 6/4	A 7/5/3	G			
						V6/4	V 7/5/3	I			

Symmetrical relationships that exist within the hierarchy of a given tonality, in which harmonic areas or adjacent chordal structures are of equal significance (meaning that the one does not define or support the other), become ever more prominent as the nineteenth century draws to a close. Since tonality is inherently a product of hierarchical harmonic relationships that define a given tonic, harmonic symmetry, if introduced on a large enough scale, will ultimately destroy that hierarchy and with it a sense of traditional tonal organization. Of course, Brahms never “destroys” tonality, but he does begin the process of greatly weakening the tonic with symmetrical relationships that begin to undermine the older tonal hierarchy so clearly defined by his predecessors. Perhaps Beethoven first set this in motion when he decided to explore second harmonic areas that did not arpeggiate the tonic triad, but went in other directions instead: the first movements of the Ninth Symphony, the “Archduke” trio, and the early String Quintet in C are notable examples.

Brahms was already moving in this direction in the B $\beta$  sextet when he unexpectedly arrived in A major as his intermediate harmonic area. At first, A major was heard as a harmony unrelated to B $\beta$ , since it had no direct voice-leading connection to the tonic. However, as soon as the A major area began, it moved into

dominant harmony revealing its function as III# within that area.

The G major Sextet is quite a different matter since there is no intermediate area. Instead, Brahms moves into B major as a symmetrically related harmony to the tonic at the start of the “b” phrase of the opening statement (see Ex.7.4). The close proximity of two symmetrically related major thirds surrounding the G major tonic, the first, Eβ, a major third below the tonic, and the second, B\_, a major third above, are both subsumed under a 2β system; thus both major thirds oppose the tonic rather than define it. B major remains within the gamut of a 2β system because it is never defined by its own dominant triad, thus no C# appears to redress the system.. Note, particularly, that both Eβ and B\_ are arrived at through half-step motions branching in half-steps from the tonic fifth:



The arrival of B major harmony is a bit more complex than the previous expansion to the  $E\beta - B\beta$  fifth, since it is not an immediate half-step neighbor to G. Instead, G first descends to  $F\#$  as  $V/B$ , with the G reinterpreted as a  $\beta VI$  of B major; this reinforces the symmetrical relationship between the two harmonies. Once achieved, B major initiates a fourths cycle that eventually leads back to tonic harmony at the start of the counterstatement in m. 53. With the return of tonic harmony, the hierarchy of the tonic is reestablished, and the symmetry is at last resolved into the higher structural level of the tonic key.

Throughout the rest of Brahms's career, adjacent harmonies of equal weight, neither of which are defined by their dominants, abound in his works. Among numerous examples, one may cite the symmetrical relationship of the tonic D major with C major during the opening phrase of the D major Violin Concerto, Op. 77, as well as the F major tonic of the Third Symphony with  $D\beta$ , also within the opening statement. But no matter how strong the symmetrical relationships, in the end, Brahms must revert to tonal hierarchy, no matter how undermined, if the hegemony of the tonic is to be upheld as the ultimate consonant source of resolution.

However, on an even deeper level, the symmetrical relationships that comprise the tritone systems of the tonic matrix *exist as complements*, to the

extent that a movement, or even an entire composition may end in a complementary system to that of the tonic. In fact, the first movement of the Brahms G Major Sextet ends in a  $2\beta$  system (see discussion below). However, the choice of complementary system is of necessity limited in tonal pieces to that of the minor third (the implication being the system of the tonic minor) since any other complementary tritone system within the tonic matrix would imply a harmony whose signature would lie outside the realm of the tonic altogether; obviously, atonal works would not be bound by these restrictions. We have already seen examples of tonal pieces that end in tonic harmony, but whose systems end in their complementary minor third complements: the first movement of Vivaldi's Concerto in C for 2 oboes and 2 clarinets, and the last movements of Beethoven's Fifth Symphony and Schubert's C Major String Quintet. Thus Brahms, along with Schubert and Beethoven before him, open the way to the possibility of an ultimate symmetry, one that displaces the tonic hierarchy altogether.

We see the process of tonal hierarchy further challenged by the symmetries of the tritone matrix in pieces like Brahms's G Major Sextet, where the complementary  $2\beta$  system that displaces the  $1\#$  tonic system (not unlike the opening gambit of the first movement of Beethoven's Piano Trio in D Major, Op. 70 no. 1, discussed in the previous chapter) conditions the design of both its development and recapitulation sections (see Diagram 7.3b), the  $2\beta$  system acting as the goal in both sections of the movement!

The Development displaces the outward expansion from the tonic G – D fifth with an expansion outward from the dominant fifth, D – A

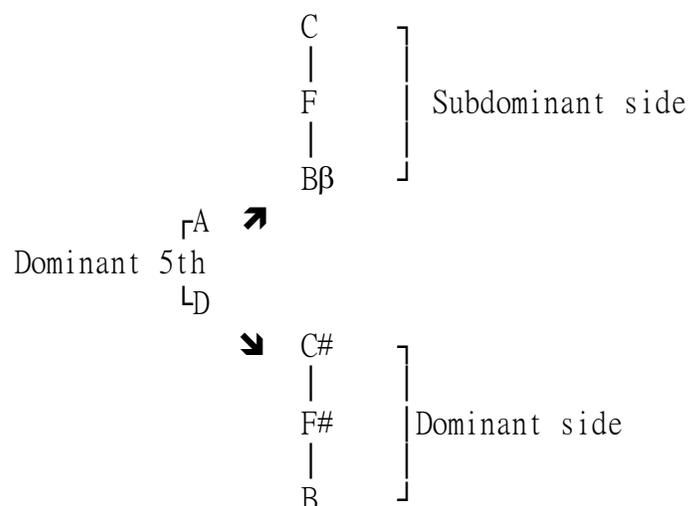
Thematic material is based entirely on the opening theme															
Measure:	217	219		238	240	241	249	253	262	275		291	292		
Active System PCs:		(Bβ/C#)		Bβ			C#						A#		
System	1#			2βs			1#						4#s		
PCA:	<b>D (7)</b>										<b>D# (8)</b>		<b>D# (8)</b>		
Harmony:	dm			Bβ	F	C	A	c#m		f#m		B			
Branches outward harmonically from the D – A fifth															
<b>Climax</b>															
M.:	297	300	301	302	303	305		307	309	311	312	313	315	317	323
ASPCs:				G_	A#						(G_/A#)		G_	Bβ	C#
System:				1#	4#s holds through -----							1#	2βs	1#	
PCA:	<b>E (9)</b>														
Harmony:	Bβ → am		em		bm	f#m		D	am	em		bm	G9	gm	c#07
Recapitulation: 1 <sup>st</sup> Harmonic Area															
<b>Retransition on the tonic minor!</b>															
M.:	327		329	330	331		339	341			(a)	(a <sup>1</sup> )	(b)		
ASPCs	Bβ (C#/Bβ):														
System:	2βs holds through into the recapitulation -----														
PCA:				<b>F_ (10)</b>			<b>F# (11)</b>			<b>G (0)</b>		<b>G (0)</b>		<b>G# (1)</b>	
Harmony:	gm 6/4		G7		gm 6/4		D			G Major		G	F# –	B	E
	i 6/4		V7/iv	iv	i 6/4		V			I		I		III#	

DIAGRAM 7.3b: Brahms, Sextet for Strings in G Major, Op. 36, 1<sup>st</sup> Movement Development and Recapitulation: Systems/PCA

	<b>Counterstatement (a)</b>										<b>C.S. (a<sup>1</sup>)</b>
M.:	381	390	392	393	395 -96	399	400	402	403		407
ASPcs:	(C#/Bβ)		C#↗		Bβ↘	C#↗					
System:			1#		2βs	1#					
<b>PCA:</b>	<b>A (2)</b>	<b>[Bβ (3)]</b>		<b>B_ (4)]</b>	<b>Bβ (3)</b>		<b>B_ (4)</b>	<b>C (5)</b>	<b>C# (6) – D (7)</b>		
Harmony:		gm 6/4 D i 6/4	G	I	Eβ6 βVI	D 6/4	----- V pedal	7/5/3			G I
<hr/>											
	<b>Extension</b>										<b>Bridge</b>
M.:	409	410	411	415	418	424			434		435
ASPcs:	Bβ↘	Dβ↘				E_↗	C#↗				
System:	2βs	5βs sustained	-----			2βs	1# sustained	-----			
<b>PCA:</b>	<b>Eβ (8)</b>					<b>E_ (9)</b>	<b>(F_, pc 10 omitted)</b>	<b>F# (11)</b>		<b>G (0)</b>	
Harmony:	Eβ6 βVI	Dβ 6/4/2 V 6/4/2/ βII	Aβ6 βII6		D 6/4 – 7/5/3 V pedal						G I
bass:	G	Dβ									
	↳System tritone↳										
<hr/>											
M.:	439	440	441	442	446	448	450	451	452		
ASPcs:	(A#/G)		(Bβ/C#)				(Bβ/C#)		(Bβ/C#)		
System:	1# holds through -----										
<b>PCA:</b>		<b>G (0)</b>	<b>G# (1)</b>	<b>A (2)</b>	<b>Bβ (3)</b>	<b>B_ (4) – C_ (5)</b>			<b>[C# (6) – D (7)]</b>		
Harmony:	C#07 (the next 9 mm. arpeggiate the tonic system matrix)										
<hr/>											
M.:	454	455	456	457	458	459	460	466-67			
ASPcs:	(Bβ/C#)	Bβ↘				C#↗	A#↗				
System:		2βs				1#	4#s				
<b>PCA:</b>	<b>C# (6)</b>	<b>D (7)</b>	<b>D# (8)</b>	<b>E (9)</b>	<b>[E# (10)</b>	<b>F# (11)]</b>		<b>E# (10) – F# (11)</b>			
Harmony:	Cello I rises in ½ steps -----										

By setting up the complementary system as the final goal of motion, at least in terms of its systems, and despite the fact that both recapitulation and coda regain the tonic major, Brahms has, perhaps inadvertently, set himself a compositional problem that goes one step further than the one posed by Haydn in the first movement of his Symphony no. 92 (“The Oxford”), also in G major (see Chapter 5 for a detailed discussion of this work). In Haydn’s case, the exposition began “off tonic”, on a dominant seventh chord, making a “normal” recapitulation quite impossible since, every time the opening theme was restated, it began on a dissonant dominant seventh and could therefore not be a goal of resolution. In Brahms’s G Major Sextet, the tonic major in all three of its most significant statements — the opening of the movement, the transition into and including the start of the recapitulation, and the movement’s final cadential period — is undermined by flat-side sonorities that support a  $2\beta$  system, a non-tonic, complementary system that militates against a clear statement of the tonic major.

The exposition of the movement has already been discussed in this regard; the working out of the  $2\beta$  system, and its eventual consequences in motivating the harmonic structure of the development section, is equally, if not more interesting (see Diagram 7.3b). Unexpectedly, the development begins in the minor dominant, eventually raising  $B\beta$  and the  $2\beta$  system by m. 238. The  $B\beta$  itself not only shifts the system, but also forms the root of a disjunct fifth,  $B\beta - F$ , a half-step away from that of the dominant,  $D - A$ :



Thus, the development continues the process of outward expansion from a central fifth already exploited in the exposition, but now transposed to the dominant, here displacing the tonic. (The quality of the dominant is of no consequence here, but the root and fifth degree are). From mm. 238 onwards,  $B\beta$  initiates a fifths cycle from its lower neighbor A and which progresses to F

and then to C. It is important to note that B $\beta$  serves a dual function as simultaneously shifts the system to 2 $\beta$ s, and, as a root, begins the expansion outward from the D – A fifth. The other side of the fifths equation soon follows when C# enters the pitch field in m. 249, continuing the fifths expansion from D a half step down to C# minor, to F# minor, and finally, to B.

However, our main concern is how the B $\beta$  as a system-shift motivator controls the harmonic progression of the retransition beginning in m. 327, or rather, what happens a few measures before this point. Before the B $\beta$  regains its function as a system-shift motivator, the passage before its appearance, namely from 323 to 326, arpeggiates the tonic system tritone of G – C# in octaves, all under a 1# system. The B $\beta$  that enters the pitch field in the next measure (m. 327) is made all the more effective, suddenly switching the 1# system down to 2 $\beta$ s and changing the mode into the tonic minor as well. As it happens, the move into the parallel minor was prepared at the climax of the development (mm. 315 ff.) where the G $\ominus$  chord (under control of a 1# system) gave way to a G minor sonority (under a 2 $\beta$  system), only to revert to a 1# system at the point where the tonic tritone is arpeggiated. However, unlike the earlier passage which formed the climax, the switch to tonic minor at the start of the retransition remains in effect up to the point of recapitulation where the tonic is regained. However, as in the exposition, there is no C# to

return the  $2\beta$  system to  $1\#$ , even when the music once more veers into B major harmony (but note the G minor harmony in m. 390). Only in m. 392, a measure before the counterstatement of phrase “a”, does an uncontested  $C\#$  return the system the tonic  $1\#$ . But even this event is short-lived since the counterstatement brings with it the same plunge into  $E\beta$  harmony, and its concomitant  $2\beta$  system.

With the restatement of the second “a” phrase, the recapitulation, which has been literal up until this point by maintaining the same harmonic progressions as in the exposition, now diverges from the path of the exposition, moving deeper into the flat-side of the key, motivated by a system switch from  $2\beta_s$  to  $5\beta_s$ . Comparing the passages between Diagram 7.3a (mm. 69 ff.) and 7.4b (mm. 409 ff.), we note that the harmony at this point in the exposition, an  $E\beta_6$  prolonged by an  $F\#$  diminished seventh, has been reworked at the same spot in the recapitulation, so the progression now veers towards  $A\beta$ , the  $F\#$  diminished seventh chord here displaced by an  $E\beta$  chord in  $6/4/2$  position functioning as an inverted applied dominant of  $\beta_{II}$  with  $D\beta$  in the bass. What is of interest to us is the bass motion underlying this progression in mm. 409-10 which actually arpeggiates the  $G - D\beta$  tonic system tritone, in its flat-side inversion ( $C\#$  spelled as  $D\beta$ ), as the function of the  $E\beta$  chord changes from a  $\beta_{VI}/I$  to a  $V6/4/2$  of  $\beta_{II}$ . The resultant plunge into the  $5\beta$

system caused by Dβ is sustained for no less than twenty-three measures before first E<sub>2</sub> and then C# shift the system back up to 1# in m. 424.

Arpeggiations of any one of the system tritones that form the tonic matrix, either confined to the bass register as the above illustrates, or as a unison passage, or as a complete diminished harmony containing all the tritones of the matrix simultaneously, may be found at any point within a given movement, but they occur most often in recapitulations as a result of transpositions, and/or elaborations, of second- and closing-area material in tonic harmony. As a result, the recapitulation becomes a watershed of resolution into tonic harmony, where all important issues of the movement come together including the matrix that lies behind the tonic key itself. Raising the G – Dβ tritone in mm. 409-10 of the recapitulation, an event that does not occur at that point in the exposition, is just such an example of how the recapitulation can act as a summary of issues and events, way beyond the simple function it is usually accorded of restating transposed exposition thematic material. In fact, it can be argued that composers deliberately plan important events: dyad conflicts, chromatic issues of various sorts, dissonant harmonic relationships, etc., in the expositions of their sonata-form movements that, when transposed in the recapitulation into tonic harmony often as part of a large tonic progression, will automatically transform themselves

into the fundamental issues of the movement.

For example, dramatizing the systems of the tonic matrix as a focal point within the recapitulation can be a simple matter of transposing into the tonic an analogous, even innocuous, harmony or progression that first appeared within the dominant area of the exposition. When transposed, this same harmony achieves the status of a major event. For example, at the end of the exposition bridge passage in the G Major Sextet, there is a moment before the chromatic crescendo that leads into the second harmonic area, that lasts for nine measures and that features a G# diminished leading-tone chord to the V/V (mm. 114 – 122). When transposed into tonic harmony at the analogous point in the recapitulation (mm. 446-54), this unassuming diminished chord now becomes a C# diminished seventh that contains both complementary tritones of the tonic matrix, including the two system-shift motivators that previously had provoked so much of the system activity, and thus the chromatic activity, over the course of most of the movement. More than that, the passage presents both Bβ and C# first as a simultaneity, then as motivating separate system shifts, and, finally, respelling Bβ as A#, causing a sharp-side system shift to 4#s that remains in effect until the recapitulation of the transposed second harmonic area in m. 469 (refer to Diagram 7.3b). Here, G<sub>-</sub> returns the system to 1#. When originally presented in the exposition, this passage contained

only A# as an ineffectual system-shift motivator since G<sub>s</sub> had been pitted against it at each one of its appearances, negating its influence to change the prevailing 1# system. In the recapitulation, all the tritone systems of the tonic matrix are raised, in various combinations, as though to summarize their role in the developmental process of the movement.

Significantly, the Bβ that is raised in this process, once more becomes an effective controlling pitch class whose presence becomes ever more prevalent as the movement draws to its close. At first, Bβ creates a shift into the 2β system, supporting the G minor harmony that surrounds the start of the transition that leads to the closing area (mm. 485-7). (Considering the important position of Bβ as a pitch class and the source of so much of the developmental processes throughout this movement, it is not surprising that the tonic minor keeps popping up at odd places.) The transition provides another example of how a transposed section from the exposition can play into the continuing developmental process of the movement. Originally, in the exposition, this passage centers around the minor dominant. In its transposed version, the minor dominant becomes the minor tonic, again raising the important issue of Bβ, both in terms of its ability to cause system shifts, but also in its role of a member of one of the movement's most important dyad conflicts, Bβ/B<sub>-</sub>. One can see this conflict most clearly in mm. 530-42, where

the second viola oscillates between the two pitch classes, moving in and out of G major/G minor parallel harmonies at the same time; both the first viola and first cello parts are in quasi-imitation, arpeggiating the same major/minor harmonies.

Both exposition and recapitulation transition periods are chromatically intense and the second cello part unfolds complete secondary chromatic arrays in both instances. However, in its transposition, the recapitulation transition also unfolds, in counterpoint with the second cello, eight of the PCA's pitch classes in rapid succession in the second violin part.

Recapitulation sections unfold complete PCA ascents, covering the tonic octave. In fact, there may be any number of such chromatic rises, complete and incomplete, depending on circumstances. The reason for so many possible repetitions rests on the fact that the harmonic plan of the recapitulation repeatedly goes from tonic to tonic, not just tonic to dominant (exposition) or dominant back to tonic (development). Thus, the restatement of the opening harmonic area at the recapitulation leads to a second harmonic area that is often transposed into the tonic as well. This goes additionally for the closing and codetta periods, each of which also compose out tonic harmony. Each time the PCA progresses from one structural area to the next, it invariably returns to the same tonic from which it began, thus encompassing a

full PCA ascent each time. (The rhythmic unfolding of each pitch class of the PCA may be as quick or as slow as the composer wishes it to be.) At this point, we should add that Brahms's exposition is somewhat unique in that the opening period of the exposition and its counterstatements are extraordinarily spacious before the bridge period even begins. Because of its unusual length, Brahms unfolds a complete preparatory tonic PCA which culminates at the authentic cadence that starts the bridge period (see Diagram 7.3a).

In the recapitulation, the two pitch class system-shift motivators, B $\beta$  and C#, more or less have the field to themselves, the one contradicting the system tendencies of the other, that is, until the coda (mm. 547 ff.). Here B $\beta$  returns as pc 3 within the final unfolding of an almost complete PCA. The first time B $\beta$  enters the pitch field, the 2 $\beta$  system remains in effect for eleven measures before C# reverts the system (m. 587). Significantly, the C# itself, similar to the B $\beta$  before it, is unfolded as part of the final PCA as pc 6. Pitch class 7, D, enters in m. 591 as part of dominant harmony, but then the next pitch class in the series, pc 8, E $\beta$  (introduced ten measures before the end of the movement), is the very one that initiated the chromatic expansion at the beginning of the movement. As an inverted  $\beta$ VI chord, E $\beta$  generates B $\beta$  as the fifth degree, once more — and for the last time! — shifting the system down to 2 $\beta$ s. The B $\beta$ /B $_$  dyad conflict is again played out

as Eβ and G major triads oscillate, until the first violin swoops up the Eβ arpeggio as the other parts sustain the βVI6 sonority underneath. Only now do we realize the full import of that first inversion sonority: the Eβ triad invariably was presented in first inversion whenever it made an appearance: with G in the bass and Eβ and Bβ above it, we get as close as we can to the opening two fifths, G – D juxtaposed with Eβ – Bβ, played as a simultaneity. It is, then, only fitting that the movement should end with this sonority as an elaborate subdominant substitute, emphatically resolving into the final V - I cadence of the movement. And, if one takes the two adjacent fifths as a single sonority, the conclusion of the movement within the 2β system that had always shadowed the tonic, is here completely justified.<sup>6</sup>

*IV. Pyotr Il'yich Chaikovsky: Symphony no. 4 in F Minor, Op. 36, 1<sup>st</sup> Movement*

Rounding out this chapter is a discussion of Chaikovsky's Fourth

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<sup>6</sup>Brahms was quite possibly influenced by Schubert's closing passage in the last movement of the latter's C Major String Quintet, Op. 163. There the entire quintet ends in a 3β system, with a strikingly similar arpeggiated violin figure, only in the Schubert on the Neapolitan, Dβ. The Neapolitan is a sonority that is always associated with the complementary 3β system throughout this work. However, with Brahms, the Neapolitan has been shifted to the dominant.

Symphony composed in 1877, the same year as Brahms's Second Symphony. The two works could not be more dissimilar in their general mood, key, approach to sonata form, chromatic issues, and in their use of systems. Brahms's Second Symphony lies in a direct line stemming from Schubert and his so-called "three-key expositions," including Schubert's tendency to arpeggiate either the major or minor triad over the course of the exposition. In the first movement of Brahms's Second Symphony, an arpeggiated D major triad is responsible for an intermediate area in F# minor and a closing in A. Brahms's symphony is also closer to the classical developmental tradition, especially Haydn's, in that Brahms works out pc 3, F<sub>-</sub>, as the main "issue" throughout the first movement. For example, at the end of the opening statement leading into the extensive bridge period, a unison arpeggiation of the V7 chord ends unexpectedly with an arpeggiation of an incomplete B diminished chord whose last note is F<sub>-</sub>. Naturally, the system now shifts into 1β which is sustained until a formal tonic cadence, preparing the start of the bridge period itself, raises the G# necessary to return to the tonic 2# system. What makes this preparatory passage so relevant to our discussion is how the 1β system is dramatized by the ominous timpani role following the F<sub>-</sub>'s appearance (m. 32 in the score), as if the orchestra itself realizes the seriousness of the situation (the passage is illustrated in Diagram 7.4).

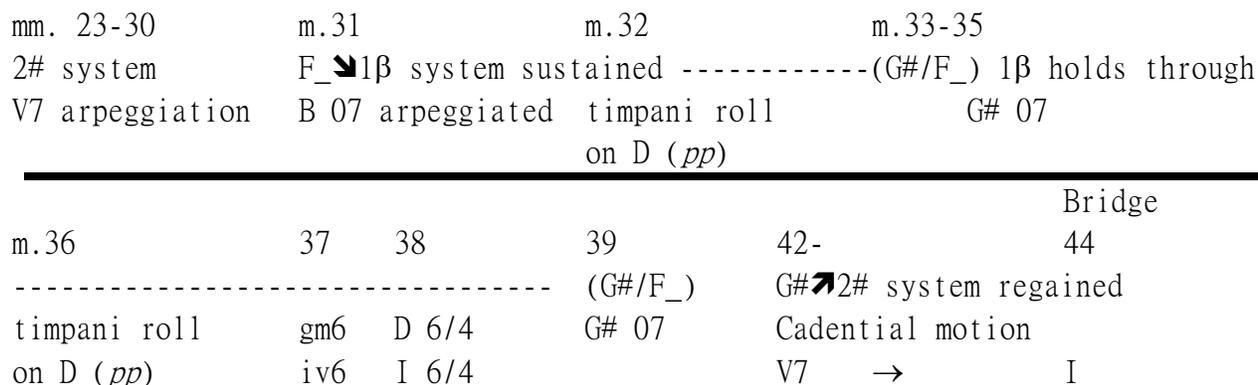


DIAGRAM 7.4: Brahms, Symphony no. 2 in D Major, 1<sup>st</sup> Movement: Exposition System

Shifts (mm. 23-35)

As the above diagram shows, the entire passage centers around the disrupting influence of F\_ in the harmonic scheme. Immediately after the timpani roll on D, the very next pitch heard is G# in the bass (cellos and trombones) as the root of a diminished seventh chord, which also includes F\_, which prevents the G# from shifting the system back up to 2#s. The same timpani gesture is heard again, and this time is followed by a minor subdominant chord, a sonority motivated by the prevailing 1β system that governs this passage. The G# diminished chord returns in m. 39, again with F\_ canceling its potential to redress the system; but this is followed in m. 42 by an uncontested G#, acting as a leading-tone embellishment to A, finally shifting the system back up to 2#s and thus preparing for the bridge to begin

again on tonic harmony.

The passage is itself a preparation for the main event of the exposition, the F<sub>-</sub> used at first as a βVI and then as an augmented sixth chord (mm.114-117) that subsequently drops to a unison octave E as V/V of the closing period that functions as the “third key”. Just as this chord operated in many of Haydn’s symphonies as an enormous voice exchange with the opening tonic major tonic triad, the augmented sixth here signals the end of tonic harmony, which in this case, includes an entirely melodic intermediate harmonic area in F# minor (F# and F<sub>-</sub> form the most important dyad conflict of the symphony). It is this kind of developmental detail of F<sub>-</sub> as a controlling pitch, including the working out of its large-scale contrapuntal relationship to tonic harmony, and its concomitant shifts into the complementary 1β system, that tie this work to Brahms’s classical predecessors. Chaikovsky, however, takes a more radical approach to systems in that the basic issue for development in his Fourth Symphony is not confined to the machinations of a single unruly pitch class, but to the entire tonic system matrix itself, a tall order indeed.

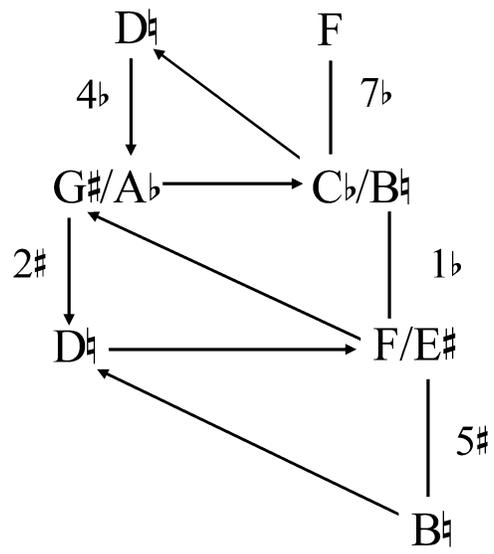
Our purpose in this study is not so much to detail Chaikovsky’s undoubted emotional symbolism in his Fourth Symphony; that has already been done

extensively in the literature,<sup>7</sup> but to explore how Chaikovsky builds an entire sonata-form movement based solely on the tritone symmetries of the tonic system matrix, each pitch class of which is used as root of a structurally significant harmonic area. First we should illustrate the tonic matrix as Chaikovsky uses it in the first movement of the symphony.

FIGURE 7.3: Chaikovsky, 4<sup>th</sup> Symphony, 1<sup>st</sup> Movement, Tonic 4β System Matrix

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<sup>7</sup>Richard Taruskin's analysis of the hidden symbolism in the first movement of the Fourth Symphony is especially convincing. See his *Defining Russia Musically* (New Jersey, Princeton University Press, 2001): 297-302.





2 <sup>nd</sup> Theme Group (7β system)	Lyrical Transition (5# system)	Closing	C.S.
aβ minor	B Major (enharmonic Cβ)	B Major	BM
iii	III/iii	-----	-----

Codetta Development (follows fourth-related sequences that arpeggiate the f diminished chord)  
 Retransition

	(2# system)	(1β ---)	(4βs --)	(7βs)	(2#s)	(4βs)	(2#s)
B Major	b minor	em	am gm	cm fm	eβm	aβm	[aβ/g#] am bβm- bm --

	Recapitulation (4β system)	(1β system)
(4βs -----) 1 <sup>st</sup> Theme Group (A)	Bridge	2 <sup>nd</sup> Theme Group
Dβaug.6 – Bβaug.6 a pedal ( <i>fff</i> ) returns]		Lyrical Transition
	d minor (completes the minor 3rds cycle) → d minor	F Major
		I

Codetta Coda (sectionalized) (begins in a 4β system but the movement ends in 7βs)  
 Polonaise motive returns  
 [D\_/Dβ conflict raised for the last time and resolved into F minor]

F Major	f minor
I	i

The opening slow introduction is of the Romantic type in its operatic, almost overture-like, style: Chaikovsky himself remarked about the operatic nature of this symphony in letters to his friend and patron, Nadezhda von Meck . Unlike other more Romantic symphonic slow introductions (the slow introduction to Schumann's First Symphony in B $\beta$  of 1841, the heroic brass fanfares of which served as a model for Chaikovsky's opening, is of much greater length and far more harmonically static), Chaikovsky's introduction is relatively short and harmonically unstable. The instability of the introduction stems from its arpeggiation of the F diminished chord, which also raises the main dyad conflict of the movement, D $\beta$ /D $_$ . This same diminished chord is, in fact, a preparation for the harmonic plan of the movement itself which arpeggiates the chord in structurally significant areas (see Diagram 7.5): F minor for the first harmonic area, A $\beta$  minor for the second harmonic area, B major for the closing area, and D minor for the transposed first and second harmonic areas of the recapitulation, the whole movement arpeggiating the pitch classes that form the 4 $\beta$  matrix of the tonic key.

Such a background harmonic plan begs the question of whether or not the tonic as a background key has any relevance at all; the internal harmonic areas relate only to each other and have no voice-leading function to that of the tonic . Beethoven had previously come close to achieving the same result

in the exposition of the first movement of his own “Appassionata” piano sonata, a work in the same key (see Chapter 6), and with aspects of design that obviously appealed to Chaikovsky. Most notable in this regard was Beethoven’s daring move to have the closing area, not in the relative major, the tonality of the second harmonic area, but in the minor of the relative, thereby removing the closing from any harmonic relation to that of the tonic. Chaikovsky must also have been influenced by the harmonic design of Beethoven’s “Pathetique” sonata, whereby two structurally significant harmonic areas follow each other in the minor mode: the first area in C minor and the second in E $\beta$  minor, the latter giving way to the “correct” key of the relative major only at the closing period.

In both Beethoven examples, however, all this seeming harmonic eccentricity is eventually justified and resolved into tonic harmony within the recapitulations of both movements, a solution quite unlike the one Chaikovsky has chosen to follow. In the recapitulation of the Fourth Symphony, the transpositions are *at the level of the tritone* as follows:

Harmonic area:	2 <sup>nd</sup> Harmonic area	Closing area	Codetta
Exposition:	A $\beta$ minor	B major	B major
Recapitulation:	D minor	omitted	F major

The D minor of the transposed second harmonic area ends the minor thirds cycle of “keys” and in no way relates to the tonic. Even the raising of F major in the recapitulation, as a tritone transposition of the B major area in the exposition, does not immediately relate to the tonic, F minor, but simply moves, almost by force, into the tonic minor at the coda. Thus, we may deduce that all of Chaikovsky’s eccentric harmonic motions relate locally, each harmonic area a minor third away from the other, and each operating without reference to any specific background tonic. For example, within the exposition the B major area that comprises the transition, closing area and codetta, is heard, in its enharmonic equivalent as Cβ, as the major relative of the Aβ minor area that directly precedes it, and certainly not as βV of the tonic F minor.

Because of the unique harmonic plan of the movement; that is, a diminished thirds cycle in which every other harmonic area forms a tritone relation – F minor with B major, and Aβ minor with D minor – it is no surprise then to find that each harmonic area is governed by a complementary system of the tonic tritone matrix (see Fig. 7.3), a situation common enough, albeit to a lesser extent, in all chromatic tonal music. What makes the Fourth Symphony so outstanding is that Chaikovsky employs *five* of the tritone systems of the matrix *in structurally significant areas* (see Diagram 7.5), whereas one most

often encounters only two or three of the many possible tritone complements governing these areas; specifically, the primary tritone system, its minor third flat-side complement, and/or the enharmonic respelling of the minor third complement as a sharp-side complement.

Every aspect of this movement, encompassing all structural levels, whether harmonic or motivic, is based on the tritone. It has already been pointed out that the slow introduction as well as the exposition arpeggiate the tonic diminished chord, but this is also true of the development section (see Diagram 7.5). Within the various fourth cycles that run throughout the development, is embedded a large-scale arpeggiation of the F diminished chord, here bounded by B minor and its 2# system. Each harmonic area along the tonic matrix projectory is firmly established within its own tritone system. Thus F minor, the first step after the opening B minor area, is subsumed under a 4β system, Aβ minor within a 7β system, and both B minor areas (at the beginning and at the end) under a 2# system. Each tritone system is prepared by the missing pitch of the previous system, and, in addition, each harmonic area within the arpeggiation is given structural support (dynamic, rhythmic, metric placement, etc.) that gives the area a stronger emphasis than the less significant areas surrounding it. For instance, the F minor passage culminates the sequence of fourth-related areas that began with B minor at the beginning

of the development section. The change of design initiated by the F minor passage leads, in turn, to the A $\beta$  minor area that is set apart from the E $\beta$  minor area that precedes it by changing the system from 4 $\beta$ s to that of 7 $\beta$ s, the most extreme flat-side system shift of the development. In addition, the A $\beta$  minor area is the only one to undergo an enharmonic change, here into G# minor, which area sets the stage for a return to the 2# system that opened the development. The G# minor area (also part of the matrix arpeggiation) is climactic in itself, and the most active in terms of its extreme system shifts, moving rapidly within three measures (mm. 245-247) from 7 $\beta$ s to 8#s (C## substitutes for D), 5#s and then, finally to 2#s!

The only variable within the unfolding of the matrix systems within the development is the 4 $\beta$  system that starts the recapitulation in D minor (see Diagram 7.5), a carry over from the 4 $\beta$  system that supported the previous augmented sixth chords on D $\beta$  and B $\beta$ . Ironically, a 4 $\beta$  system would naturally occur at this point, since the harmony would have been, under normal circumstances, the tonic, F minor. The D minor of the recapitulation is actually a displacement of the tonic, which harmony is only achieved at the coda, along with its rightful system of 4 $\beta$ s. As it happens, the D minor area does correct itself, system-wise, at the transposition of the second harmonic area, also in D minor. Here, the proper system of 1 $\beta$  not only supports the

harmonic area, but also that of the subsequent F major areas as well, the transition material and the codetta.

Perhaps the most ironic gesture in a movement characterized by ironic gestures, is how the movement ends. If one had to pick one pitch class that determines the character of any one system matrix, it would have to be the minor third. In the first movement of the Fourth Symphony, C $\beta$  (and its enharmonic, B $_$ ) plays a crucial role in the harmonic design of the exposition. But the pitch could also have a psychological meaning for Chaikovsky as a symbol of complete despair, a result of fate, or *fatum* as Chaikovsky describes it, an element of destruction in his life, preventing any chance for a normal, happy existence.<sup>8</sup> The C $\beta$  in this symphony operates symbolically as it forces, almost as an agent of fate, the harmony to move in all the “wrong” directions. The only period of hope in the movement is the moment during the recapitulation that the prevailing D minor harmony finally gives way to the tonic major in the lyrical transition that leads to and includes the codetta.

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<sup>8</sup>Chaikovsky wrote about his life and its relationship to “fate” in a famous letter that he wrote concerning this symphony to his benefactress Nadezhda Filaretovna von Meck. Richard Taruskin, *op. cit.*, discusses the aspect of “fate” in the first movement of the Fourth Symphony in detail. The following discussion is based on Taruskin’s perceptive psychological analysis.

But the coda that ends the movement smashes this last hope, reverting the harmony to the tonic minor, along with a system shift back into  $4\beta$ s. The final destruction accompanies the last restatement of the opening theme (a theme associated with Chaikovsky himself) which is stretched out beyond recognition, accepting the polonaise rhythm of the “fate” motive of the introduction. During this final passage (mm. 395 ff.), the harmony suddenly moves into  $D\beta$  and then into  $F\beta$ , at which point the  $C\beta$  is reintroduced for the last time, but now with telling effect: the  $C\beta$  not only modulates the prevailing  $4\beta$  system into  $7\beta$ s, it is left uncontested, no  $D_$  appears to redress the system. Thus, although the movement ends in the tonic minor, its system is that of  $7\beta$ s, a fittingly symbolic ending for a work so emotionally driven.

Where do composers go from here? Towards the end of the nineteenth century, composers become ever more interested in exploring the potential of symmetrical systems to inform the design aspects of their works, pushing tonal hierarchy ever closer to the outer perimeters of the composition. Led by Franz Liszt, whose latter experiments in symmetrical forms influenced a host of composers coming after him, most notably Claude Debussy, and, ultimately, Arnold Schoenberg, the stage was set for the most radical transformation of the tonality yet perceived. It is to these composers that we turn for our last chapter.

