

Symmetrical Relationships
in Webern's Op. 27, No. 1 for Piano

Timothy Harenda

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University of North Texas

Dr. David Schwarz

For centuries composers have experimented with the concept of symmetry in music, ranging from small-scale rhythmic palindromes to the large-scale arc form. The dawn of the serial era in the first half of the twentieth century sparked a new wave of interest in musical symmetry, leading to compositions which embodied this spirit in more dimensions than previously attainable. Among the leaders in symmetrical composition at this time was Anton Webern, whose Op. 27, No. 1 for piano will be addressed in detail over the coming pages. In this analysis I hope to show that Webern uses and manipulates the idea of symmetry on the levels of formal structure, serial pitch organization, and surface-level gestures.

I believe it is helpful before addressing the more intricate symmetrical features of the first movement to conceptualize Op. 27 as a whole. The title, *Variationen*, very clearly aligns itself in the long and weighty Western tradition of the “theme and variations,” in which a principle theme is presented in its simplest form, only to undergo multiple mutations. Composers have traditionally used this genre as a method of showcasing technical prowess in a manner that is extraordinarily clear to the listener, effectively saying, “See how much I can do with so little”. Traditionally the theme is presented at the front, followed by each successive variation, often in a manner that temporally distinguishes each variation to accentuate the effect, with score subtitles clearly delineating where each new variation begins. In fact, Webern himself constructs his own Op. 21 much in this regard. In Op. 27, however, the only score reference to the idea of variations is in the title. Webern himself sheds some light on this choice. “[The Variations] are divided into three separate movements. I do not display the thema explicitly (at the

top, like before). It is almost my wish that it could stay as such unrecognized. (But if people ask me about it, I would not hide it from them). Nevertheless it is better that it stay back there. (It is –to you I tell it right away—the first eleven measures of the third movement).” (Webern, *Aus dem Briefwechsel Webern-Steuermann. Musik-Konzepte: Sonderband Anton Webern*, cited in Koivisto: 29). This of course is an odd choice for a theme placement, as the listener will have heard altered versions of the original before ever being presented with the main material. In a way, it could be akin to Beethoven presenting the opening four-note “fate motif” of his iconic 5th symphony partway through the finale rather than so clearly at the opening, leaving us to question which idea truly came first. I believe that by this decision Webern has created a piece as unified and coherent as a set of variations without the listener’s expectation of superficial transformation.

Given that the first movement acts not as a presentation of the main theme, but rather as an initial variation, I will begin by examining symmetrical formal structures present in the form of movement 1. Discussing the formal symmetries found in Webern’s music can often lead to speculation in regards to the relevance of one’s findings to the composition as a whole. In his article in *Music Theory Spectrum* entitled “Webern, Tradition, and ‘Composing with Twelve Tones...’,” Andrew Mead confronts this notion by expressing his belief that Webern’s formal structures are directly tied to his material:

As has been the case with Schoenberg, a number of analysts have concluded that Webern’s large-scale formal plans in his twelve-tone works are a matter of superficial imitation, rather than the outward manifestation of a certain set of possibilities inherent in his underlying material. But Webern, no less than Schoenberg, saw twelve-tone composition as a solution to the problem

of writing extended music in the total chromatic, and his works show an extraordinary sensitivity for the possibilities of the twelve-tone system for embodying the formal strategies of earlier music—possibilities that range from the primitives of the system, through the potentials inherent in a row class, through the way its members are articulated on the musical surface. (Mead: 173)

Mead highlights the importance of the “potentials inherent” in the order of Webern’s chosen row to suggest a relationship between his musical material and his structural devices. This is a notion that will be fleshed out over the course of this analysis.

To give a broad formal picture, I have created Example 1, which presents the first movement as a ternary structure, or A B A’. Webern’s use of this extremely

Example 1: Symmetrical Formal Structure of Op. 27 No. 1

Section	A	B	A'
Measures	1-18 (18 mm)	19-36 (18 mm)	37-54 (18 mm)
Smallest rhythmic denomination	16 th note	32 nd note	16 th note
Number of row statements	8	12	8

common form does not, in and of itself, suggest an emphasis on symmetry any more than a Chopin Mazurka does. I believe that Webern’s craftsmanship and awareness of proportions, however, adds another dimension of symmetry, as seen in the “measurements” of this example. In this movement, A’ is not merely “similar to” A in the way that a recapitulation is similar to an exposition, A’ essentially *is* A under transposition and inversion. This notion will be seen more clearly in later examples.

Before going any further, I believe it is necessary to address the row itself. As Webern has explicitly stated that the third movement contains the theme, I find it only logical to look here for the prime form of the piece's tone row. Indeed, the first twelve notes of movement three produce a series that can govern the rest of Op. 27, listed in order as <3, E, T, 2, 1, 0, 6, 4, 7, 5, 9, 8>. A matrix built off this row can be seen in Example 2.

Example 2: Matrix of Webern's Op. 27

Based off the set 3 11 10 2 1 0 6 4 7 5 9 8

	I ₃	I ₁₁	I ₁₀	I ₂	I ₁	I ₀	I ₆	I ₄	I ₇	I ₅	I ₉	I ₈	
P ₃	3	11	10	2	1	0	6	4	7	5	9	8	R ₃
P ₇	7	3	2	6	5	4	10	8	11	9	1	0	R ₇
P ₈	8	4	3	7	6	5	11	9	0	10	2	1	R ₈
P ₄	4	0	11	3	2	1	7	5	8	6	10	9	R ₄
P ₅	5	1	0	4	3	2	8	6	9	7	11	10	R ₅
P ₆	6	2	1	5	4	3	9	7	10	8	0	11	R ₆
P ₀	0	8	7	11	10	9	3	1	4	2	6	5	R ₀
P ₂	2	10	9	1	0	11	5	3	6	4	8	7	R ₂
P ₁₁	11	7	6	10	9	8	2	0	3	1	5	4	R ₁₁
P ₁	1	9	8	0	11	10	4	2	5	3	7	6	R ₁
P ₉	9	5	4	8	7	6	0	10	1	11	3	2	R ₉
P ₁₀	10	6	5	9	8	7	1	11	2	0	4	3	R ₁₀
	RI ₃	RI ₁₁	RI ₁₀	RI ₂	RI ₁	RI ₀	RI ₆	RI ₄	RI ₇	RI ₅	RI ₉	RI ₈	

Several elements of this example warrant mention for this analysis. First, the prime form of the row features two hexachords belonging to set class (012345), the first

six pitches [TE0123] and the last six pitches [456789], although ordered differently in each case. These hexachords are then separated by the interval of a tritone in the center, the only time in which that interval occurs in the row. Finally, a close examination would show that the matrix is indeed all-combinatorial, as R9, I3 and RI4 all share the same hexachordal pitch class sets as the prime form. I believe that Webern's construction of the row in this fashion will allow for several levels of symmetry to develop on the form and surface of the music, for as Mead has noted, the material has symmetrical "potentials inherent" in its very construction.

Moving now from overarching concepts to more specific uses of the row, I find that Webern uses a remarkably elegant solution for choosing which transpositions of the row are used at various points in the piece, a diagram of which is shown in Example 3.

Example 3: Appearances of the Tone Row in Op. 27, No. 1
Shown as the row beginning in Left Hand/Right Hand

A Section	B Section	A' Section
P ₁₁ /R ₁₁	I ₄ /RI ₄	R ₃ /P ₃
I ₁₁ /RI ₁₁	R ₅ /P ₅	RI ₃ /I ₃
R ₁₁ /P ₁₁	I ₉ /RI ₉	I ₈ /RI ₈
I ₁₁ /RI ₁₁	I ₁₀ /P ₁₀	R ₈ /P ₈
	I ₂ /RI ₂	
	R ³ /P ₃	

There are several items here of interest to symmetrical analysis. First, Webern religiously uses rows in pairs, and always combines a prime with its retrograde (or an inversion with its retrograde inversion). This choice will allow him to develop symmetrical surface gestures, as will be seen later in Example 4. Second, and

perhaps most visually obvious, the A section uses exclusively rows from the 11 family. While a glance at the A' section initially seems perplexing with its lack of continuity with the process in A, a closer look at the matrix from Example 2 sheds some light on Webern's choice. Rather than repeat his use of P3 and R3, as would be expected given the structure of A, Webern uses two *different* rows beginning with pc 3, rows I8 and RI8. The piece rounds out with R8 and P8, ostensibly chosen for their relation to the previous rows. I find that Webern's structure lends itself well to composing an aurally perceivable symmetrical surface, as will be discussed later.

The B section features a slightly different pattern, but one that remains consistent with the outer sections. After leading with I4 and RI4, Webern applies a transposition of +1 and uses the prime and retrograde versions. This is followed by another transposition of +4 and a return to the "I" and "RI" forms. The process continues, alternating between I/RI and R/P, with the transpositions mapping out to a symmetrical transformational process of +1, +4, +1, +4, +1.

Another way of viewing the transposition relationships is under the broader umbrella of T_5 , as seen in Example 3-a. Here the B section is divided into three subsections, rather than six.

Example 3-a: Transpositions of the Tone Row in Op. 27, No. 1

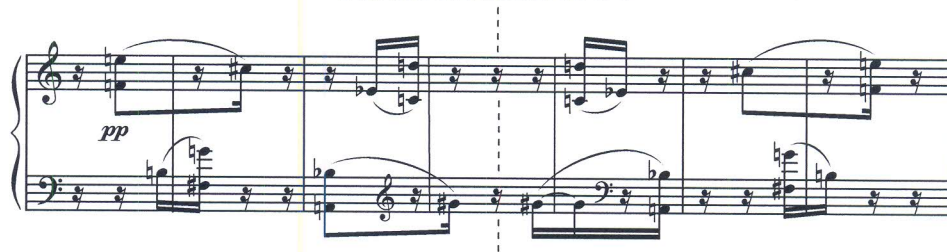
A Section	B Section	A' Section
P ₁₁ /R ₁₁	T ₅ I ₄ /RI ₄	T ₀ R ₃ /P ₃
I ₁₁ /RI ₁₁	R ₅ /P ₅	RI ₃ /I ₃
T ₀ R ₁₁ /P ₁₁	T ₅ I ₉ /RI ₉	T ₅ I ₈ /RI ₈
I ₁₁ /RI ₁₁	I ₁₀ /P ₁₀	R ₈ /P ₈
	T ₅ I ₂ /RI ₂	
	R ³ /P ₃	

Viewing the B section this way then allows for a similar T_5 relationship to be applied to the second half of A' (Koivisto: 44). Under these transpositions, I feel that Webern has created a series of rows that shows symmetry over the entire movement in a way that closely mirrors the form.

Up to this point, the symmetry discussed has primarily existed on conceptual or large-scale formal levels, which may or may not have immediate aural implications. Perhaps the most visible (and audible) use of symmetry is found on the music's surface in the crafting of musical phrases from gestures. I have laid out in Example 4 the material for section A in four phrases, with each phrase being derived from a complete pair of row as shown back in Example 3.

Example 4: Symmetry in A Section Gestures

Phrase 1: Measures 1-7

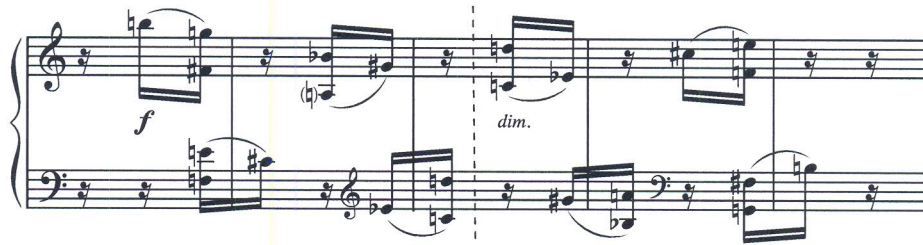


Phrase 2: Measures 8-10

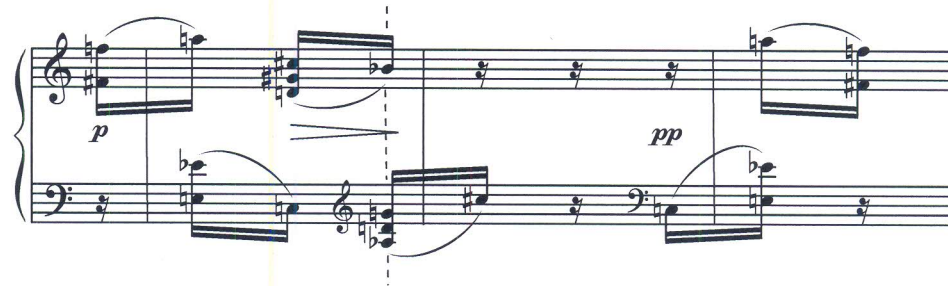


Example 4 (cont.)

Phrase 3: Measures 11-15



Phrase 4: Measures 15-18



Each phrase exhibits symmetry around a slightly varying axis. Phrase 1 and 3 use more traditional “reflecting points,” with the former reflecting on a rest, and the latter reflecting in between beats 1 and 2 of measure 13. Phrases 2 and 4 reflect around the innermost gesture. In Phrase 2, measure 9 acts *as* the reflecting point; in Phrase 4, the same gesture from Phrase 2 acts as the axis, but Webern has off-set the rhythmic symmetry slightly by “front-loading” the phrase. Phrases 1, 2, and 4 all begin with each row distinctly in opposite hands, and “switch places” at the midpoint, in some cases overlapping at the center. This choice allows for the visual component of symmetry to be most striking.

The relationship of Phrase 3 to Phrase 1 also shows a bit of reflective symmetry. First, Webern has switched the right and left hand material, in a sense acting as a registral reflection of Phrase 1. Also, rather than having the row statements switch hands at the reflecting point, they continue forward in the same

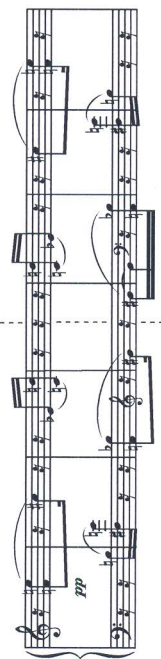
hand in which they begin, resulting in yet another registral reflection at the phrase midpoint. Webern curiously inverts the left hand dyadic intervals after this point (M. 12, beat 2, right hand: minor 9th becomes M. 14, beat 1, left hand: major 7th), but *not* the right hand intervals (M. 13, beat 1, left hand: major 9th = M. 13, beat 2, right hand: major 9th).

It appears that Webern conceived rhythmic symmetry in these examples in a slightly different manner than pitch symmetry. Whereas the pitches are symmetrical by individual notes, the rhythms are symmetrical by individual gestures. For example, in M. 1-2, the right hand has the rhythm of: 16th rest, 8th note, 16th rest, 16th note, 16th rest. If Webern continued his pitch palindromic reflection into the rhythmic domain, then the right hand at M. 6-7 *should* read: 16th rest, 16th note, 16th rest, 8th note, 16th rest, but it does not. Instead, the rhythm here matches the original order from the first two measures. This method consistently continues throughout the movement, seemingly affirming that Webern desired that both individual notes and individual phrases be perceived as reflecting across the axis.

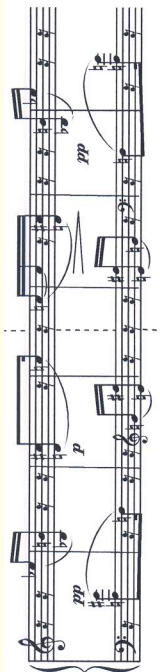
One might expect when viewing Example 4 in light of the overall form in Example 1 that the A' section beginning in measure 37 would have a similar symmetrical construction as Example 4, an expectation which I believe is unmistakably fulfilled, as seen in Example 5 (displayed on next page). Notable differences do exist between the two sections, including the change of tone row material in the second half of A' (as discussed earlier in this analysis), and the expansion of dyads into trichords in the piece's last measure. The latter change reflects Webern's need to finish a complete statement of the rows, as the end of the

Example 5: Symmetry Between A and A'

Section A, Phrase 1, Measures 1-7



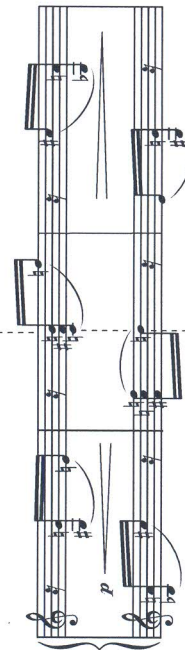
Section A', Phrase 1, Measures 37-43



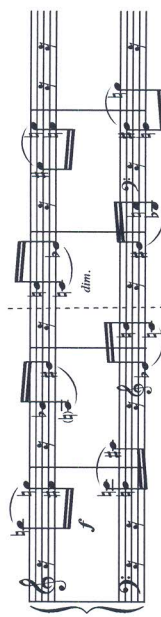
Section A, Phrase 2, Measures 8-10



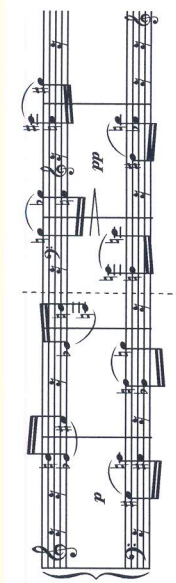
Section A', Phrase 2, Measures 44-46



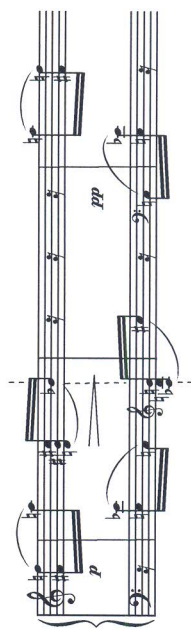
Section A, Phrase 3, Measures 11-15



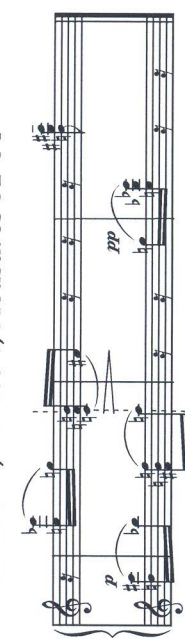
Section A', Phrase 3, Measures 47-51



Section A, Phrase 4, Measures 15-18



Section A', Phrase 4, Measures 51-54



piece precludes his tendency to overlap the start of a new row with the end of an old one. Otherwise, Webern maintains the integrity of virtually every rhythm and gesture of A in A', adding an extra dose of symmetry by registrally reflecting the material from the right hand onto the left, and vice-versa. In a sense, an imaginary axis (not pictured) was placed *horizontally* under the staff of A to reflect the gestures and rhythms onto A'. At this point, Webern has created seven-fold symmetry: note onto note, rhythm onto rhythm, gesture onto gesture, phrase onto phrase, register onto register, tone row onto tone row and section onto section, a truly remarkable achievement of creativity, ingenuity, and craftsmanship.

The B section of the first movement contains a similar structure to and undergoes similar transformation as the outer sections, but with different material. A quick visual survey of the material in the B section, suggests the presence of two subsections, displayed as Examples 6-a and 6-b (next page). I find it relatively easy to distinguish these aurally based on the gestural shapes used, but the mirror point location (between notes for phrases 1-3, while directly on a note for phrases 4-6) also provides a nice point of distinction. In both Examples 6-a and 6-b, three phrases are noted by the presence of brackets in the score, with the mirror point of each phrase noted with a dashed line. Both examples show nearly every reflective technique displayed in the outer sections, as pitches, rhythms, and gestures reappear in perfect retrograde at the axis of each phrase. Webern even goes as far as to switch left and right hand material at the point of reflection, although the registral placement is the same, making the technique an inaudible one. Also, as he did between phrases of A and A', Webern reflects phrase onto phrase, as each

bracket is then mirrored onto the next as each row begins a new statement under a new transposition. This pattern reflects the symmetrical transposition pattern that Webern initiates with his tone rows, as discussed earlier.

While I believe it is clear that Webern intended the visual effect of such elaborate symmetry to be a source of intellectual enjoyment (why else would he initiate a “silent” registral shift as discussed in measure 21?), I personally find that

Example 6-a: Symmetry in Section B, 1st subsection

The musical score for Example 6-a, "Symmetry in Section B, 1st subsection," is presented in four systems. The first system (measures 19-21) begins with a tempo marking of "tempo" and a dynamic of *f*. Measure 20 is marked "rit." and measure 21 is marked "tempo". The second system (measures 22-24) begins with a tempo marking of "tempo" and a dynamic of *f*. Measure 23 is marked "rit." and measure 24 is marked "tempo". The third system (measures 25-27) begins with a tempo marking of "rit." and a dynamic of *p*. Measure 26 is marked "tempo" and measure 27 is marked "rit.". The fourth system (measures 28-30) begins with a tempo marking of "tempo" and a dynamic of *f*. Measure 29 is marked "rit." and measure 30 is marked "tempo". The score includes various dynamics such as *f*, *sf*, *p*, and *mf*, and features a "silent" registral shift in measure 21.

Example 6-b: Symmetry in Section B, 2nd Subsection

The musical score is presented in three systems. The first system contains measures 28, 29, and 30. Measure 28 is marked 'tempo' and 'f'. Measure 29 is marked 'rit.' and 'p'. Measure 30 is marked 'tempo' and 'f'. The second system contains measures 31, 32, and 33. Measure 31 is marked 'p'. Measure 32 is marked 'f'. Measure 33 is marked 'ff'. The third system contains measures 34, 35, and 36. Measure 34 is marked 'ff'. Measure 35 is marked 'f'. Measure 36 is marked 'pp'. The score is written for piano and features a high degree of symmetry, with measures 28-30 and 34-36 mirroring each other. The key signature is one flat (B-flat).

the aural result is just as noticeable. When Schoenberg began writing music for twelve-tones, he desired that all twelve scale degrees be equalized, with no one pitch class having superiority over another. While Webern continues this tradition, the immediate repetition of pitch material around the axis of each phrase acts as a huge aural signpost in the context of total chromatic saturation. This feature continues throughout the latter movements of Op. 27, perhaps most notably in the second movement's haunting recurrence of pitch class 9.

Along the lines of aural intelligibility of symmetrical structure, I would like to offer an alternative method of harmonic analysis. While Op. 27 was not composed with set class theory as its primary process, I find that a broad analysis in this vein sheds some interesting light into how the piece may be initially heard and aurally interpreted. Example 7 shows a graph of set classes of the A section, with segmentation determined by Webern's own phrase markings, and modeled after the phrase groupings in Example 4.

Example 7: Set classes in the A section of Op. 27, No. 1

(012368)	(012467)	(012467)	(012368)
	(012369)	(01367)	(012369)
(012368)	(012467)	(012467)	(012368)
	(012369)	(01367)	(012369)

The symmetry apparent in this example does not come as a surprise (nor is it meant to), given the symmetrical phrase structures of the A section seen in earlier examples. One may even argue that the symmetry presented here exists merely as a by-product of the processes discussed up to this point. Instead, I feel that this example provides insight into how sonic relationships would *actually be perceived* by a listener who has neither read this commentary nor performed a serial analysis. Throughout these 18 measures, Webern aurally floods his audience with slight variations in symmetrical form of the set class (012368) initially presented. Webern makes these relationships possible by his approach to only using rows with their

inversions in simultaneous pairs, but I believe he makes a conscious decision to emphasize these specific groupings through the construction of his phrases so that the listener is presented with a consistently unified harmonic environment. Of course, given its relationship to the A section, A' would yield an almost identical analysis, save the ending for reasons that have been discussed previously.

As this analysis shows, Webern uses an arsenal of compositional techniques to create symmetrical structures in this short movement. These symmetrical devices are more than superficial imitation on the musical surface, but stem from a deeper level of symmetry latent in his compositional material. Through these methods Webern is able to create an almost mystical musical landscape of visual and aural symmetry.

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