Voice Leading as Drama in *Wozzeck*

**Einer nach dem Andern!**

[I originally intended that this first of several quotes from the libretto of *Wozzeck* would be paired with Heinrich Schenker’s motto *Semper idem sed non eodem modo*; the motto was, however, omitted in the published version, in *Schenker Studies 2*, edited by Carl Schachter and Hedi Siegel (Cambridge, UK: Cambridge University Press, 1999), 160–91. Most of the chapters in that book were expanded versions of talks given at the Second International Schenker Symposium, at the Mannes College of Music in New York (March 27–29, 1992), but the talk I gave on that occasion, on the *bacio* theme in Verdi’s *Otello*, proved to be difficult to expand into a full-length essay, and the editors kindly allowed me to substitute the present article for it. In several instances below I have restored some of the comments and jokes that the editors rightly excised from the book; with enviable reputations to protect, they may have thought that they were protecting me from myself, as well, for which I remain grateful. But at this point and in this context, I’d rather be a little less circumspect. Anyway, now that I’m older than the editors were then, I’ve toned down my snarkiness considerably.]

Alban Berg’s *Wozzeck* has been widely discussed since it was first performed—in fact, discussion began before the premiere—and a number of analyses, some going into great detail, have been published. What is perhaps most surprising is the degree of unanimity among analysts, given their divergent analytical approaches; despite some heat, there is sufficient light to speak of a consensus. This is a tribute to the clarity of Berg’s musical thought, which is remarkable considering how complex and how new its idiom was. Leaving aside the truism that there will always be something to say about such a work, the consensus also begs the question of whether much is left to be said.

Given this situation, I must acknowledge that my essay appears to draw more heavily on the work of others than it does. Claims of priority are not the issue; I only hope to have a unity of vision (and not a singularity) about things that a number of us have noticed—a view that illuminates issues that have not been addressed previously.¹ Among these issues is prolongation in posttonal music, which is

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¹ I will cite the first publication of important insights. Minutiae or self-evident points that have long been common currency in the literature will be presented sans apparatus. Whether this paper sinks or swims depends on the reader’s familiarity not just with the opera but to some extent with the analytical literature as well; Appendix A provides an overview.
of interest in connection with many works written in the first quarter of the century, and which ought not to be so settled as it has seemed.

Concerning my title, the question may be raised as to how voice leading can be viewed as drama. The expected, paratactic “Voice Leading and Drama” is a more typical title after all. The allusion to Joseph Kerman’s famous book is of course intentional—but it is far from being facetious. I do mean to assert that much of the musical expression of the drama in Wozzeck takes place in the voice leading, and this cuts to the quick of the difference between my approach and previous ones: others have tended to view some of the same entities as I discuss as static musical symbols submerged in the voice leading; I hope to show that the voice leading itself derives from these symbols and allows them to enact basic elements of the drama in musical terms. To do this, I focus my discussion on a pair of symbols, the first two chords of the opera.

Classic leitmotiv technique, long used by dramatic composers and codified for Berg’s generation by Wagner and his epigones, has been discussed a number of times in connection with Wozzeck. In this technique a musical entity is made to represent or refer to a character or theme in the drama, usually by association. Association is the most reliable and, indeed, almost inevitable means of connecting musical and dramatic elements. What we might call a precompositional transformation is also sometimes used to connect ideas; for instance, the way the “covenant” (descending scale) becomes the “love of the Wälsungs” (descending scale that rises through intermittent leaps of an upward 7th). But in Wozzeck it frequently occurs that the musical element’s connection to the drama is reinforced by its structural embodiment of the dramatic idea. To cite a well-known example: the five-tone chord associated with Wozzeck consists of four pitches from one whole-tone collection and one from the other, which seems to symbolize the man’s status as a misfit. (In contrast, the Drum Major’s motive works through imitation of his preening and slightly ludicrous—though at the same time creepy—goose step.)

Berg’s practice is thus a consolidation and an advance over Wagnerian technique: Wagner’s motives themselves seldom extend even to imitation of an idea; probably the majority work through mere association, the musical symbols having little inherent dramatic meaning. They accrue their great store of meaning by creating a complex web of associative links over time. Furthermore, it

ought to be borne in mind that Berg’s project is very different from Wagner’s, especially in scale. No one could sustain the sort of density Berg achieves over vast Wagnerian stretches of time. But Berg creates density not so much by filling in with more of the same kind of detail as by folding the structure back upon itself—a qualitatively different kind of density that a Schenkerian approach is uniquely able to address. Pitch-class set analysis can reveal significant sets buried like Muscheln in the musical texture (it may even be too good at that), but it is less able to address the ways Berg moved beyond what he inherited from the Wagnerian tradition. Where Berg goes furthest beyond his predecessors (and I hope to go beyond mine) is with a process of compositional transformation of one or more of the musical symbols that mirrors a dramatic transformation.

Lienenkreise, Figuren—Wer das lesen könnte!
Alban Berg was given to introducing symmetries of all kinds into his music—whether or not they could be consciously perceived by listeners—to a degree that one could describe as compulsive. Such games might have been conducive to allowing deeper connections to work themselves out in the music just because the composer was otherwise occupied consciously. In the case of Wozzeck, where all the characters seem trapped in their fates, the symmetries drive home that point, too. Perhaps the drama and Berg’s developing musical practice meshed so well because he could muster his penchant for symmetry by treating symmetry itself as a symbol—for nature, for the hierarchical social order, or for Wozzeck’s obsessions (idées fixes in the medical terminology of Büchner’s time). And perhaps the opera appeals to analysts because we identify with the way Wozzeck sees the world as aflame with deeper meaning.

Yet, despite any seemingly arbitrary features of the structure, the wonderful thing about Berg’s music is how “natural” it is, how expressive: he was, of course, the first member of the second Viennese school to gain some acceptance by the general music-loving public as a result. And—pace Kerman—another reason for Berg’s accessibility is that he endeavors to highlight significant symmetries for the listener. Berg seems to have realized very early that atonality required alternative means for the listener to predict the next event; that the omnisymmetrical chromatic scale needed to

3. See Joseph Kerman, Opera as Drama, rev. ed. (Berkeley: University of California Press, 1988), p.183, for his complaint—apropos Wozzeck—about “analytical abracadabra.” Kerman mentions the connection he finds difficult to accept between the low B at the end of act 2 and the B pedal in act 3, scene 2, which ends in the famous unison crescendos. His mocking the possibility of actually making the connection seems eminently reasonable—until we notice that the B at the end of act 2 and the last B before the crescendos are both played
have axes of symmetry imposed on it compositionally—thus his use of interval cycles that converge on important pitches at key structural points as early as the Op. 3 String Quartet. It is noteworthy that Wozzeck’s “projection” of his obsessions onto nature resembles in this way the composer’s imposition of “meaningful symmetry” on a universe that may be too symmetrical to have meaning. At any rate, although the question remains as to how much the ubiquitous symmetries enhance one’s experience of the music, there is no doubt that for the analyst a symmetry may emit the first glimmer of some part of the work’s musical and dramatic meaning.

. . . zwei auf einmal.

The first two chords of Wozzeck have a number of salient features: They are both five-tone chords. They are mutually exclusive in pitch-class content. Each voice moves through a different linear interval from the first chord to the second. If we follow the convention of numbering pitch classes on the lowest string of the harp. Surely this is distinct enough a sound to aid the memory, particularly since the notes are the last sounds of their respective sections. See also the discussion of J. Peter Burkholder’s “Berg and the Possibility of Popularity” in Appendix A.


5. In other words, they are complementary in the only musically meaningful sense—as opposed to the set-theoretical sense. Perle’s keynote address at the 1989 meeting of the Society for Music Theory in Austin, Texas (published as “Pitch-Class Set Analysis: An Evaluation,” Journal of Musicology, 8, 2 [1990], 151–72) does make a good point concerning the generalization from the hexachordal sets of twelve-tone theory to the variously sized sets of pitch-class set theory: twelve-tone sets can be distinguished only by ordering (Schoenberg) or segmentation (Hauer); we must assume transpositional equivalence because the sets exhaust the universe of tones. Smaller sets, in contrast, can be distinguished by pitch content alone because transpositional equivalence is not necessarily applicable to them. I do not believe Perle is questioning the applicability of transpositional equivalence to smaller sets; he is only questioning whether it is axiomatic. For an example of the peculiar results of the peculiar concept of complementarity as defined by set theory, see note 12 below.
(“pc” for “pitch class” hereafter) so that C is 0, then in the second chord the “odd” whole-tone collection predominates, the chord being a type long recognized as characteristic of the opera, a “whole-tone chord with one extraneous note” (“whole-tone plus” hereafter); in the first chord the two whole-tone collections are as evenly represented as they can be in five-tone chords, with the “even” whole-tone collection having the simple majority (see ex.1a).

Douglas Jarman was the first analyst in print to link the first two chords of the opera with the two main characters, Marie and Wozzeck, respectively. In The Structure of Atonal Music, Allen Forte had noted the connection between the second chord (pc set 5-30) and what George Perle has called “Wozzeck’s entrance and exit motive” (see ex.1b, adapted from Forte, and compare ex. 1c and 1a). In his book on the opera, Perle takes no note of this idea (and in private communication has demurred); other students of the work, however, have no doubts about the identity of the content of the first two chords and the passages during which we see Wozzeck and Marie together for the first and last times. On both occasions, the leitmotiv that Perle, taking a cue from Berg, calls “Marie’s aimless waiting” (as a collection, pc set 5-20) precedes Wozzeck’s entrance leitmotiv.

In digging for symmetry, Jarman unfortunately goes too far, to my mind. Linking the first two chords with the two leitmotivs involves transposition of the chords by the same interval and some

6. The longer formulation is Perle’s; the shorter is mine; Dave Headlam also uses it. Janet Schmalfeldt uses “almost whole-tone”; see Berg’s “Wozzeck”: Harmonic Language and Dramatic Design (New Haven: Yale University Press, 1983), a book based on her Ph.D. dissertation (Yale University, 1979).
7. A fuller treatment of the constraints governing Berg’s choice of chords is given in Appendix B.
9. Allen Forte, The Structure of Atonal Music (New Haven: Yale University Press, 1973), 24; Perle, “Representation and Symbol,” 292 (The Operas of Alban Berg, Vol. 1, 106–107). Forte finds “Wir arme Leut” (4-19) to be a subset of W (5-30), and Jarman concurs (The Music of Alban Berg, 54). While literally true, this is not convincing to me because the leitmotiv always sounds like a “minor-major 7th chord,” which has so little whole-tone character. (It even recurs in chordal form in act 2, scene 4.) See the discussion of my example 3b, where five-tone chords are created from the four-tone subsets of 5-30 that preserve its “whole-tone plus” character. One of these subsets is 4-19, but it is expressed as a “$4_2$” and thus maintains the family resemblance. In the opera we hear the characteristic “whole-tone plus” sound only because of the bass that accompanies “Wir arme Leut”; unfortunately, adding the bass yields set 5-26, not 5-30 (W). Set 5-26, being a member of the “whole-tone plus” family, is therefore aurally related to the chord associated with Wozzeck. It might in fact even be mistaken for that chord; compare the two chords in normal order: 5-26 (0148T) and 5-30 (01468).
quite straightforward composing out of their respective pitches; Jarman, however, wants to connect the first two chords with the cadential chord (or “chords,” as he has it) with which all three acts close (see ex.2a). In order to demonstrate the identity of his “cadential chords A and B” with Marie’s and Wozzeck’s chords (hereafter, M and W), he has to transpose each of his two chords by a different interval; he then has to add to the first an extra tone that is not always present—never at the ends of the acts—as well as having to leave out two other tones. This is his “cadential chord A,” a seven-tone chord that includes all the tones of M. 10 The first instance of his cadential chord sounds more like an appoggiatura chord to the actual last chord of the section where it appears, the transition between act 1, scenes 2 and 3 (see ex.2b). Of the pitches in the latter chord that resolve embellishing tones in the former, three—D, G, and B♭—are the only pitches not included in the three-chord sequence (“X–Y–Z,” to use Perle’s labels) that underlies the preceding scene (see ex.2c). Anyway, as intimated, I find questionable Jarman’s premise of considering the cadential music to consist of two separate chords.

Appoggiatura chord or no, it is more appropriate, I think, to treat Jarman’s chord A as what might be termed a “nonce chord”—that is, one that forges a relationship between two chords not otherwise related, for a local (in this case, programmatic) purpose: Marie is about to appear for the first time in the following scene. (The Captain has alluded to her in scene 1 and she is referred to very obliquely in chords of scene 2, as Jarman and Janet Schmalfeldt have shown; see the discussion of ex.3a below.) As far as there being any connection between M and the cadential chord, it is perhaps most to the point that W can be related to the cadential chord as a tritone transposition—an idea I will discuss further. That Jarman can relate M to the cadential chord is then an inevitable result of the cadential chord’s transpositional relationship to W and another more significant feature of the first two chords already mentioned: They are literally complementary, having no pitches in common. As Milton Babbitt and David Lewin showed in the 1960s, mutually exclusive six-pitch sets are often convertible into each other either by transposition or by transposition and inversion. The same would apply to mutually exclusive five-pitch sets if we supply the missing tones—which is what Jarman does (see ex.2d).

10. Jarman, The Music of Alban Berg, 62ff. Jarman’s transpositions are labeled with the assumption that his cadential chords A and B are at T0; my labels always take M and W at T0 as the referential transpositions. Therefore, the T numbers complement each other (e.g., his T7 is my T3).
The question is, of course, whether the composer actually uses any abstract relationship. As a number of my examples show, Berg frequently relates other chords to W or M by common pitch content. In contrast, he seems to want to keep W and M distinct from each other; for example, in the open spacing of the first chord of the opera and the close spacing of the second, or in the extreme gestural difference between the “Marie’s aimless waiting” and the “Wozzeck’s entrance” motives. Perhaps just because the two chords are so similar as sets, Berg poetically prefers for most of the opera to keep hidden their broken symmetry—that is, that Wozzeck and Marie have more in common than appears on the surface.

Let me pursue this concentration on the characteristics of the two chords a bit further. Just as W is one of a number of chords of a type that pervades the opera, M is part of a family that might be characterized ad hoc as “major 7th chords (plus).” This is even less precise than the “whole-tone plus” description of the W family, and a closer approximation of the source of the family resemblance is the presence of pc set 3-4 (015) as a subset: a “major 7th chord” can be described as 3-4 twice, in prime and inverted forms, with two tones in common.

Oh! meine Theorie!

A digression is now in order, to discuss the issue of pitch-class sets as discrete entities in this music. My impression is that Berg uses chords in looser associative pairings than is allowed by classical set theory—even though Forte’s introduction of genera is undoubtedly intended to address the issue of similarity. Set-theoretical approaches to similarity are, however, problematical. When the pcs of two sets are almost the same, basing similarity on interval content gives trivial results. Conversely, it seems counterintuitive that two transpositions of the same set with no common pcs would be said to be more similar than two different sets with many pcs in common. This is like saying in a tonal context that A major and B♭ major are more similar that A major and A minor. There are really two kinds of similarity, and in a given piece of music both can be equally interesting. For this reason,

Perle’s less specific characterizations might be more apposite to the way Berg composes. For example, twenty-six apparently distinct pitch-class sets fit the “whole-tone plus” description.

In the past, pitch-class set theorists like Schmalfeldt attempted to come to terms with this difficulty by using the inclusion relation; Jarman, though not using Forte’s numbers, takes a similar tack. There is a problem with this approach: when the source sets are large—the cadential set of *Wozzeck*, for example, has eight members—it becomes very likely that smaller sets will be included. In theory, the inclusion of a smaller set in a number of permutations within a larger set signifies a stronger inclusion relation, but the opposite could as reasonably be maintained when the theory is applied to analysis: If there are a number of ways that a given trichord might be derived from a certain octachord, a specific occurrence in a piece of music is that much more likely to be coincidental (or even unavoidable) than it is to be musically significant. I do believe that the maximal inclusion of 3-4 in M (5-20) has some significance. However, the chord at the end of the interlude between scenes 2 and 3 of act 1 (the one that resolves Jarman’s A¹) is reminiscent of the first chord of the opera (M) in part because the chords share four of their five pcs, not because they are reducible to the same set, and despite the fact that 3-4 occurs only once in the former as opposed to three times in M (see ex.2e).¹²

Accordingly, I often find it at least as helpful to pay attention to actual pitches in this music as to the more abstract set relations. This also corresponds to Berg’s practice in the opera of singling out certain pitches as symbols, the dyad B–F, being a well-known instance.¹³ Moreover, Berg seems to favor transpositions of related chords that feature the pitches of M at its original transposition—D, E,

¹² Another aspect of the inclusion relation as defined by set theory that leads to musically awkward results is the proposition that a small set is related to a larger one by inclusion even if it is not a subset of the larger set but only a subset of the larger set’s complement (a direct consequence of making transpositional equivalence axiomatic; see note 5 above). For example, set 3-1 (012) is not a subset of 5-20 (01568) but it is a subset of 7-20 (0124789), the complement of 5-20, so one is supposed to see a relationship to the “complex about 5-20 and 7-20.” It is something one can see but not something one can hear. When one is hearing 5-20, one is not hearing 3-1 (nor does one say to oneself, “If I was hearing the seven tones that I’m not hearing right now, I would be hearing 3-1.”)

¹³ Schmalfeldt seems to dismiss Perle’s considering certain pcs as referential “only on the basis of [their] presence . . . at the end of Act I/Scene 1, in the closing measures of each act, and in the Prelude to Act II” (*Berg’s “Wozzeck,”* 45), but has to acknowledge the role that specific pitches play in the work (e.g., see pp.59–63).
F, A, B♭—as members of the characteristic trichord 3-4 (see ex.2f). At any rate, a “flexible” set-theoretical approach is especially appropriate to analysis—as distinct from theory—because it responds to a fact of the compositional process: that musical relationships that were unsought or unplanned for sometimes “come to hand” in the course of composition.

**Man kann viel seh’n, wenn Man zwei Augen hat und wenn Mann nicht blind ist, und wenn die Sonne scheint.**

Such a flexible approach is better illustrated in practice than described; to do so, I will discuss the sequence of three chords (“X–Y–Z”) underlying act 1, scene 2. While both Jarman and Schmalfeldt have demonstrated that the first of the three chords combines elements of W and M (see ex.3a), I have not seen a satisfactory explanation of what Perle calls the “curious ‘rightness’ ” of the sequence, though his example goes some of the way.¹⁴

A flexible set-theoretical explanation begins with the fact that each of the chords contains a different one of the three possible four-tone subsets of W that preserves its “whole-tone plus” character (see ex.3b); the addition of the fifth tone of each chord makes it inversionally symmetrical! This suggests the following programmatic explanation: W is eminently unsymmetrical, being characterized by the inclusion of a “wrong note” in the symmetrical whole-tone collection—again, to symbolize Wozzeck’s role as a misfit. In act 1, scene 2, Wozzeck projects his own obsessions onto the natural world; thus the use of three different subsets of his chord that preserve its essential character and their conversion into symmetrical—that is, “natural”—chords. Chords Y and Z also contain four-tone subsets of M (see ex.3c), but none of the three chords contains a subset of 5-20 that characteristically maximizes 3-4 (either 4-20 or 4-8). So I don’t find any special significance in the presence of the subsets of 5-20 or in the fact that Z contains the shared subset of W and M (4-16).

One ought to be cautious about asserting the significance of inversional symmetry unless the composer uses it compositionally—but here Berg does just that. There are explicit references to the axis of symmetry of X—that is, D—in bars 201ff., and the music in bars 210–12 converges symmetrically on the D that commences Andres’s first arioso.

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Even though inversional symmetry has been an important topic of the literature concerning this repertoire, I am not aware of much attention paid to its perceptibility—in particular, the perceptibility of the axis of symmetry; even less, shifts in the axis of symmetry. Yet this passage persuades me that though verging on pure abstraction, they may be perceptible and account in part for both the “rightness” that Perle finds and its “curious” quality (which I take to imply “hard to explain or put into words”).

How are we to understand the choice of the three transpositions of W that become the basis of X–Y–Z? Perhaps some of the factors involved are the following: E♭(D#) is the one pitch in common to all three chords, and it is also the axis of symmetry of the shifting axes of symmetry of the sequence: D–D#/E♭–E♭ (refer again to ex.3b). This “motion” [recalls a line from the very opening of the opera and then] is recalled in turn by the beginning of Andres’s song in bars 212–15 (see ex.3d). In his 1929 lecture on the opera, Berg says that the tenths were “the basis” of the three chords, comparing the effect of the individual members of the sequence to the tonal I, V, and IV, respectively.\(^{15}\) Berg’s reasons for invoking the tonic for X, based on C–E, and the subdominant for Z, based on F–A, are obvious enough; describing Y—with E♭–G♭ for its lower tenth—as a dominant seems odd, though it could be compared to some sort of “applied-dominant function” chord like a common-tone diminished 7th.

Even if one doesn’t hear the specific functions Berg ascribes to the chords, it is clear that if X is tonic, then Y and Z are both nontonic. As Perle mentions, both chords Y and Z contain the tritone B–F, while X does not: X is based on an odd transposition of W and so features the even whole-tone collection; the others, based on even transpositions, feature the same odd whole-tone collection as both W in its original transposition and the cadential chord at the end of each act.\(^{16}\) It may or may not be a coincidence, therefore, that what we might call (for want of a better term) the “roots” of the three transposed subsets of W—C, B, and E♭(D#)—are themselves a characteristic subset, 3-3 (014), of W, figuring in both the “Wir arme Leut” and “Marie as mother” leitmotifs (see ex.3e). Chords Y and Z represent harmonic motion away from chord X—as the dominant and subdominant do from the tonic in tonal music—because they are built on the other whole-tone collection. So Berg’s comparison with

a tonal progression is less superficial than it might seem at first: the sort of subtlety that characterizes harmonic relations in tonal music is here imported into an atonal context, within the structural unit (the scene) but, more important, also at a higher structural level, because the local “tonic,” C, is a member of the “nontonic” even whole-tone collection.

The choice of C–E as the lowest notes of chord X may have been conditioned by the presence of B–F in Y and Z, C–E being the traditional resolution of that tritone. Of greater significance, though, is that the C of scene 2, as a member of the “nontonic” whole-tone collection, also inflects the C# that governs act 1, scene 1, and ends the interlude between the scenes in the bass; then, in the motion from X to Y the innermost voice echoes the bass, D♭(C♯)–C♭, and the motion is echoed again in the triplet-thirty-second-note figure (see ex.3f). When the chord sequence recurs in disguised form in act 1, scene 5—where nature in the form of Marie’s sexual attraction to the Drum Major really does threaten Wozzeck’s domestic arrangement—pitches of X–Y–Z recur a half-step higher because scene 5 is, like scene 1, organized around the G–C♯ tritone (see ex.3g).

This transformed repetition (which to my knowledge has previously escaped notice) of the X–Y–Z sequence as the opening chords of the interlude acts as a link between the second scene of the opera and later scenes. Jarman points out that the opening chords of the interlude before the last scene of act 1 prefigure the Drum major’s motive, then recur in the tavern scene, act 2, scene 4 (played by the onstage band), and provide the basis of the rondo motive of act 2 scene 5. The X–Y–Z sequence recurs in that scene as well, initially as the “breathing” of the sleeping soldiers, and then as the pitch source for the rondo theme. (And notice how the B above the staff in bar 656 links scene 5 of act 1 to its dramatic fruition in act 3, scene 2!)

This cycle of motivic links helps make an unusual dramatic structure at the end of act 2 more convincing. The bass of the nightmarish conclusion of the tavern scene in the interlude between act 2, scenes 4 and 5, could have led to what would have been a conventional second act curtain: it unfolds the cadential set (bars 724–35) in two interlocking transpositions, T₀ and (T₁₁)–E♭ (D) F (E) G (F♯) A (A♭) C♯ (C) F♯ (F) B (B♭)—but stops just short of the last two tones, D (C♯). Then the last scene begins with the chorus of sleeping soldiers (X–Y–Z at T₉). The repeated staccato D of the oboes in act 1, scene 2, is now a swell on g♯¹, first by a solo contrabass and then by Wozzeck, crying out in his sleep. Wozzeck awakens and reiterates the bass pattern of the preceding interlude (b.746 and 750) but

17. Bass organization in scene 1 coincides with axial organization; in contrast, scene 2 is organized around C in the bass but axially around E♭.

completes the unfolding of the cadential set to D (C#)—on the word “Messer!” (b.751)—at which point X–Y–Z comes back in the orchestra at its original pitch (b.755). The pairing of G# and D here is related to the function of D in the cadential chord of the opera as an “extraneous” element like the Ab(G#) in W (the cadential chord being based on W at T_6). The link adumbrates harmonic features of the final scenes: the D is the last tone of the embellishing harmony (based on W at T_0) to be unfolded in the middle section of the orchestral interlude (refer to ex. 4a and 4b below); its relationship to Ab in W is also made explicit by the voice exchange in the final scene, in which C# and G trade positions (refer to ex. 6 and 7a below).

As the final scene of act 2 continues, the chord sequence is stated X-Y-Z-Y-X at its original transposition (b.755–57), then a descending chromatic series of parallel X chords restores the tritone transposition, with the contrabass swell on G# (b.760), signaling that Wozzeck has gone back to sleep (although the stage directions do not say so). The G# acts, however, as a harmonic pivot because the opening motto of the rondo, which accompanies the Drum Major’s entrance at bar 761, is based on X–Y–Z at T_0. (Chord Y is actually at both T_0 and T_6, but these have four tones in common, the subset 4-9 [0167], whose pc content is unchanged under tritone transposition; refer back to example 3g.)

Now that we have seen that classical pitch-class set theory can hinder certain kinds of insight into voice leading because of its focus on the identity of pc sets, and that a more flexible approach allows other connections to be revealed, we can return to our main topic, voice leading as drama, and examine an illustration of the application of such an approach.

With the inflection of the C# of act 1, scene 1, to C_s in scene 2, C comes to represent Wozzeck himself.19 Although the “extraneous” note in W was originally Ab, C plays the role of misfit more often throughout the opera, once established in act 1, scene 2. Even at the start, C is the first note after

19. Though, to paraphrase Dorothy Parker’s famous description of the young Katharine Hepburn’s acting, Wozzeck’s behavior runs the gamut from the C# of “Jawohl, Herr Hauptmann” to the B of the murder scene. The tone most associated with B is F—right from the linear motion in the first two chords, f^1–b—and Perle points out (“Musical Language,” 218; The Operas of Alban Berg, Vol. 1, 140) that F is associated with Marie in many ways: as the tonal center of the sonata-allegro movement, act 2, scene 1; as the tonality of one of the two passages in the opera notated with a key signature (act 3, scene 1, bars 33–42—the other is the final orchestral interlude); and as the note that dominates Wozzeck’s death scene (act 3, scene 4), as his B dominates Marie’s (act 3, scene 2).
the introductory chords and the first and last note in the solo oboe phrase that corresponds to the rise of the curtain—though distinctly extraneous to the prevailing odd whole-tone harmony and clearly a melodic appendage of the C# and B that frame the ambitus. When Wozzeck asserts himself later in the first scene, breaking out of the military discipline of the reiterated C#s of “Jawohl, Herr Hauptmann,” his aria, “Wir arme Leut” (b.136ff.) moves from C# to C♮ in the bass: At the beginning, C# is the lowest note of a twelve-tone harmony arpeggiated upward and ending on c3; this is answered in bar 147 by a downward arpeggio on the same chord except with the C# on top and C in the bass. The high c♯4 in the solo violin corresponds to the line “It would be a fine thing to be virtuous.” [Es muß was Schönes sein um die Tugend.] Then the music plummets to C in the bass for the line “But I’m just a poor guy.” [Aber ich bin ein armer Kerl.] The bass then moves on to B, foreshadowing the end of the action, as Wozzeck sings, “The likes of us suffer in this world and the next.” [Unsereins ist doch einmal unselig in dieser und andern Welt.]

With such associations of pitch and of the motion between pitches in mind, one can hear the bass motion from C# to C at the beginning of scene 2 can be heard as depicting Wozzeck’s release from military discipline—whereupon he is possessed by his visions.20 In act 3, when Wozzeck tries to pull himself back to normality after the murder, the B of the murder scene, scene 2, moves up to C in the bass at the start of scene 3.21 The motion C#–C♮–B then recurs in the bass in the final scene of the opera (see ex.6 below).

He, bist Du toll?

Having broken ranks with set theory, [a discipline that can fathom an atonal equivalent of Wagnerian leitmotiv technique but be too rigid to deal with much that goes beyond it,] we can turn to several

20. Leo Treitler’s idea that the first and last scenes of the opera represent everyday reality and are therefore detached from the drama, while dramatically apt, is thus not valid musically; see “Wozzeck and the Apocalypse,” in Music and the Historical Imagination (Cambridge, MA: Harvard University Press, 1989), 242–63.) Moreover, the first two scenes are linked in another way. Treitler’s new motive in scene 2, the top voice of “X–Y–Z,” is an unfolding of the pitches of W minus the tritone G–C#: note the identical spelling, A♭–B–D♭.

21. On an autographed picture of himself, Berg once used the C major chord of act 2, scene 1, as a “quotation.” This could be taken for a witticism, or seen in the light of the meaning of C outlined above, it could have—typically—greater significance. The picture is reproduced in the photo insert of Perle’s The Operas (plate no. 20).
large-scale features of act 3 that relate to the first two chords. Another of Berg’s symmetries, a
programmatic one, was first noted by Perle.\(^{22}\) The orchestral interlude between scenes 4 and 5 of act 3
omits any reference to leitmotivs associated with Marie, although it recalls material associated with
everyone else of any consequence in the story—especially material connected with Wozzeck,
naturally; the final scene then concentrates on Marie’s leitmotivs (and a key chord from two of her
earlier scenes—act 1, scene 3, and act 3, scene 1—is featured; refer to b.385 in ex.7d). Taking Perle’s
perception a step further, it seems to me that the last two musical sections of the opera are a gigantic
expansion of the first two chords: If none of Marie’s leitmotivs are heard in the interlude, it is only
because the entire number prolongs her chord, M; even if her leitmotivs make up most of the material
of the final scene, W is the underlying harmony.

Perhaps the idea of prolongation in the interlude will not seem as problematic as it does in the
final scene (see below). Many would agree that the interlude is tonal, if only in some very loose sense
(its beginning and ending derive from an early uncompleted piano sonata in D minor).\(^{23}\) As my
graphs will show, I think it is tonal in quite a strict sense; Berg evidently thought it tonal enough to
use a key signature of one flat (despite continuing to follow the atonal style of ubiquitous
accidentals—including B♭).

Turning to the analysis of the final interlude, note that a skeletal I–III–V–I still governs this
number (see ex. 4a and 4b), but there is more than just an intense chromaticism obscuring the tonal
organization: quintessentially atonal processes are superimposed on the structure; for example, the
converging and diverging semitone cycles implicit in the first period (ending with the tonicization of
V of III, motivically marked, in bars 333–34; see the cycles in ex.4c). Perle has pointed out the
importance of whole-tone collections to the interlude, noting how the two whole-tone collections are
combined to give the complete chromatic in bars 368–70 (see ex.4d).\(^{24}\)

Moreover, the structural motion from I is paralleled in the foreground by a carefully gradual
[apparent] dissolution of tonality that culminates in the twelve-tone chord of bar 364. The chord is
then made to serve as V by the marked bass A in the trombones and timpani on the upbeat to bar
365—maybe the most extreme illustration in the repertoire of Schenker’s idea that the Stufe can be

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23. The first page of the autograph on the sonata is reproduced in Jarman’s Cambridge Opera Handbook on
Wozzeck, p.91.
example slightly.
represented by the bass alone. The process of dissolution leading up to the twelve-tone chord can be summarized in this way: After the first four introductory measures (b.320–23), which are almost diatonic, the next four end with a D major chord standing for I, D minor (it supports the arrival of the top voice on 3). The 4 is obscured by being transferred down an 8ve; this is compensated for by the reiteration of 4–3 in the violins, bars 328–30; later, the motion 2–1 is reiterated in a similar way in bars 342–45. Motivically, these reiterations help tie the early piano sonata to the climactic statements in bars 365–67 of Wozzeck’s fugue theme from act 2, scene 2 (b.313–14 of that act).

After bar 327, the chromaticism intensifies, and by bar 335 the foreground is largely whole-tone—though a vestigial I–IV–V–I tonicizing III, F, is still audible in bars 335–38. In structural terms, the upper voice has reached an interrupted 2 and the bass has reached III at this point (the 7th over III having been consonantly prepared by V of III—the middleground being, as one might expect, more conservative than the foreground). On the surface, tonality seems to have dissolved, but a motion to an inner voice, 2–1–7, continues in the deep middleground. (If D minor represents Marie in some sense, the assertion of the equivalence of D and D♭ in bar 327 and then its reinterpretation as a motion, D–C♯, is highly suggestive, particularly given the pororative context. Berg draws Wozzeck and Marie together, via M and W, even more explicitly in the final scene, as the discussion of example 7d will show.) After a doubly chromatic exchange of voices, D–C♯(D♭) and B♭–B♮ (b.342–46), the main tones of the outer voices unfold a seven-tone collection that includes all the pitches of W at T₀ (b.346–64). The two added pitches are F, a member of the whole-tone collection that predominates in W, and D, which is the last pitch unfolded and acts as an anticipation of the return of the tonic. In bars 352–59, the three diminished-7th chords (4–28) are unfolded in the same order as they are subsequently “stacked” to form the twelve-tone chord of bar 364 (see ex.5). If we take the bass pedal G of bars 352–59 into account, as we surely must when listening, a hierarchy is willy-nilly created in which G♯ moving to G♮ in bar 355 is heard as a resolution. Once we are hearing this way—and I think we can hardly keep ourselves from doing so—it is a small leap to hearing the motion of F

25. As far as the tonality of the interlude goes, is it a gesture toward tradition on Berg’s part or some kind of ploy that he ends in the same key as he began? (It “works,” on the surface at least, to substitute A♭ for A in the bass of bar 364 and proceed with everything transposed down a half-step.) The outer “diminished-7th chords” do, however, seem to function like applied chords to a dominant A: The lower acts like a common-tone diminished 7th, the upper like a VII7 of V.
to E in a similar way, especially given its quasi-traditional rhythmic displacement of the “tone of resolution.” Thus, in bar 355 we hear the embellished unfolding of a subset [47T] of a 4-28 and not 5-4 [4567T] at all.26

An aspect of tonality that allows us to connect distant events, discounting intervening ones, or even to disconnect simultaneous events (Schenker poetically calls it “aural flight”), also continues to hold for this music. The result is that a note can belong more to a set that is not present than one that is. The three transpositions of 4-28 are prominent in bars 352f., 354f., and 356f., respectively. While they are seldom explicitly present in the intervening measures (b.358–61), they are sustained (in three distinct registers) as the 12-1 of bar 364 is built up over the course of the two preceding measures. Therefore it makes sense to segment the intervening measures in ways that take into account the context established by the three 4-28s, even if this contradicts the more obvious segmentations on the surface of the music, such as 4-17 (0347).27

The canonic entrances in bars 349–51 of the Captain’s theme from act 1, scene 1 (used as his fugue theme in act 2, scene 2), establish a duple meter. This persists, and the three 4-28s are introduced successively on the downbeats of the implicit 4/4 rather than coordinated with the notated 3/4 bars. When both the 4-28s and the motivic references begin to pile up phantasmagorically in bar 356, the 4-28s already occupy discrete registers (which do, however, continue to shift). Thus the line that carries G (a member of 4-28) from the bass to an inner voice in bars 356–58 is initially embellished by members of 4-280, but then by members of 4-282 as it ventures into the middle register (see ex.5c). The embellishments of this ascent derive from the top voice in bars 323–25 and

26. It can limit pc set theory as an analytical tool to apply its positivistic outlook too wholeheartedly because the basis of analysis is an act of hearing, which is typically contextual [—in other words, we do not hear sets as individual entities without taking context into account. A salutary effect of the literary theory of the past twenty-five years may have been to reaffirm that the positivist approach is ultimately untenable—though by now we seem to have overdosed on the breathtakingly thoroughgoing skepticism that the “French connection” had to offer.] Context is admittedly a slippery slope on which to build an argument and can therefore make for bad theory—but experience is so conditioned by context that avoiding the slippery slope can just as readily make for bad analysis.

27. With traditionally tonal music, for instance, few objections would now be raised to describing an upper-voice 3, supported when it arrives after an initial ascent by III#, as more associated with I—even though the tonic is not sounding and would be dissonant if it was, and even though the 3 is the root of the chord that is sounding. This is so in part for the simple reason that the piece begins and ends with I.
twice act as harbingers of the contrapuntal setting of the climactic quotation of Wozzeck’s aria “Wir arme Leut” in bars 361–62.

The end of this passage parallels quite closely the first phrase of Wozzeck’s aria, “Wir arme Leut,” in act 1, scene 1—except that the aria is at $T_{10}$, if the orchestral passage is arbitrarily considered to be $T_0$. In the aria, too, the melody is accompanied by the stacking of the three 4-28s. The first phrase of the aria ends with the words “Wer kein Geld hat” set to the “Marie as mother” leitmotiv and accompanied by $M$—also at $T_{10}$. This supports the identification with $M$ of the D minor 9th chord of the final orchestral interlude because it takes the same role as $M$ does in the earlier scene, the resolution of the twelve-tone harmony. The climactic passage of the orchestral interlude is paralleled even more closely—because of canonic imitation of the melody—by the end of the development section of the sonata form of act 2, scene 1; there a twelve-tone chord abruptly disappears to reveal Wozzeck’s C major triad (V of $F$, the tonic of the scene).²⁸

²⁸ Allen Forte provides a very detailed analysis of the last interlude in “The Mask of Tonality: Alban Berg’s Symphonic Epilogue [sic] to Wozzeck,” which is included in Alban Berg: Historical and Analytical Perspectives, David Gable and Robert Morgan, eds. (Oxford: Clarendon Press, 1991), 151–200. I find many of the local set unfoldings at least potentially convincing (the unfolding of 5-30 [W] in the bass, bars 324–27, for instance). Overall, however, I disagree with Forte’s analysis, which rests on his belief that chromatic motivic features and the tonal structure are necessarily in conflict, and with his conclusion that only by removing “the mask of tonality” can the motives be analytically integrated (p.176). This [is not a prima facie argument, and indeed it] represents a shift from the position expressed in his earlier study (see the quotation in n.29 below). [As always, Forte is amusing about other approaches, stating that elisions and substitutions are the “usual analytical baggage that travels with analytical studies of unusual tonal music of the later nineteenth century,” as if those ideas were best cast aside like masks at this late hour (p.193). One trope it might be best to set aside, though, is “everything is up-to-date in New Haven,” since aspects of the philosophical basis of the analytical approach themselves have some of the “antiquarian flavor” ascribed to other analyses. Forte is quite correct to aver that such concepts as substitution are used as convenient outs in analytical difficulties, but they are not always invoked that way, and they can derive from honest attempts to deal with how the music sounds. Forte may prefer to set that issue aside, but he ought not to dismiss it, for by doing so, he in fact avoids two problems he would otherwise have to face: (1) because we hear this music as initially tonal (which he does not deny), putative motivic references that do not fit the tonal framework are what ought to be questioned, not the tonal framework; and (2) that, far from being “reassuring . . . to recalcitrant tonalists among the readers” (p.176), his tonal analysis is unnervingly “impoverished,” to adopt Anthony Pople’s description (Pople’s review is cited in Appendix A): if Forte wasn’t the analyst in this case, one might suspect a “straw man.” To do tonal analysis of
The “problem of prolongation in posttonal music” has been well summarized by Joseph Straus in his article of that name. He finds the difficulty to be in essence one’s inability to distinguish between harmonic and nonharmonic events. I feel he is mistaken in assigning the difficulty to the music, however—it is rather a problem of the state of our theory of posttonal music. For tonal music, we have two theories that stand in a metatheoretical relation to each other: that is, harmony and counterpoint. While we have in set theory a working theory of harmony for posttonal music, we hardly have the barest beginnings of a theory of counterpoint. Straus rightly describes prolongation as the sense of the continuation of a musical object, particularly when it is not literally present—in other words, prolongation is a cognitive act of the listener, not something that inheres in the fluctuations of atmospheric pressure we refer to as music. Therefore, I find it reasonable to start with the assumption that we process posttonal music in a manner at least akin to the way we process tonal music, which means including prolongation and the concomitant structural levels.

The putative prolongation in the final scene cannot be said to rely on the presence of a tonal structure—this clearly is atonal music. Yet it relies on features that, though found in tonal music, can be said to be a priori to it. Neighbor-note motion, for instance, while clarified by a tonal context, does not really depend on tonality so much as on a more general gestalt phenomenon. Passing motion, in

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29. Joseph N. Straus, “The Problem of Prolongation in Post-Tonal Music,” *Journal of Music Theory*, 31, 1 (Spring 1987). Some of Fred Lehrlal’s comments in regard to this article are similar to mine (see Appendix A), although his conclusions are quite different. Christopher Lewis, in “Tonal Focus in Atonal Music: Berg’s Op. 5/3,” *Music Theory Spectrum* 3 (1981), 84–97, attempts to reassert the possibility of a kind of tonal prolongation in atonal works but proposes an unconvincing dual structure. I find Forte’s conclusion regarding the variations of act 3, scene 1 (in “Tonality, Symbol, and Structural Levels in Berg’s *Wozzeck,*” *Musical Quarterly* 71, 4 [1985], 474–99, more congenial: “[The music is a] synthesis: . . . the main structural pillars of the variations are tonal . . . while the foreground and middleground are a composite of atonal and tonal elements, with precedence at the middleground level given to tonal voice-leading structure” (p.499).
contrast, would seem to entail some sort of tonality (as would incomplete neighbors, for that matter). An uninflected exchange of voices could be said to be a priori to tonality (whereas chromatic inflection requires a tonal context). Another voice-leading effect usually associated with tonality that could well be a priori to it, at least in part, is the difference in interpretation we give to the following two cases: (1) alternation of a minor $\frac{5}{4}$ with a major $\frac{5}{3}$ caused by a half-step motion in the bass; and (2) alternation of a major $\frac{5}{4}$ with a minor $\frac{5}{3}$ caused by half-step motion in the top voice. Although when the triads are viewed as sets the two cases are identical, in fact we interpret them in opposite ways: Even out of context we tend to hear the $\frac{5}{3}$s as more stable. It might be objected that the different interpretations are not a priori to tonality, and I must admit that our tonal upbringings have much to do with them. What is a priori to tonality is that motion in the bass and motion in the top voice with the same “sets” causes different resultant harmonic intervals. In sum, I think one can refer to prolongation in atonal music if one can show two things: first, that a large structure seems to be organized around a single musical object—be it a chord, an interval, or a single pitch; second, that a listener could, in principle at least, cognitively organize the surface of the intervening music so as to be able to connect distant points.

As the graph in example 6 shows, the final scene of Wozzeck involves the unfolding of a subset—G, Ab, C♯—of W at the same pitch level as that chord first appears, the only level that preserves the pitches of both characteristic and unique intervals: the tritone G–C♯ and the semitone G–Ab (see ex.7a below). More interesting, the unfolding takes the form of an exchange of voices. The label “PR” is used to avoid “I”—but it means the governing harmony, that which is prolonged, in a closely analogous way to what the tonic represents in tonality. It is worth noting that the structural embellishing chords (EM) in the last scene belong to the same family as M. In other words, just as W

30. Of course, set theory asserts the identity of these inversionally equivalent intervals with respect to atonal music. The history of music shows, however, that 4ths were perfectly consonant until people started using 3rds as consonances as well, which seemed to “force” composers to treat 4ths as dissonances. An ancestor of a set theorist in the fourteenth century might have asserted that there was no reason why we couldn’t just assume that 4ths were still as consonant as 3rds, but surely it is the case that there are certain facts of how we perceive that art (and theory) cannot escape.

31. My assumption is that the somewhat static bass in Berg’s music is functional in the sense that it is intended to act as an anchor amid extreme chromaticism. While not usually functional in the tonal sense of defining Stufen, it still has a more than equal share in defining the harmony. Even though Berg “liberates” inner voices to greater significance at times, the total equality of voices usually assumed in set theory does not yet obtain in
served as the goal of motion away from D minor in the interlude governed by M, chords of the M family serve to embellish the prolongation of W in the last scene.

The listener can draw the connections implied (and can therefore be said to experience the prolongation) because on the surface the total chromatic is divided into pairs of pitches a half-step apart: F# and G, A♭ and A♯, B and C (though on a deeper level B is paired with C♯), C# and D, E♭ and E♮ (see the foreground graph in ex.6a). The voice leading consists largely of oscillations between the members of each pair, and in most of these pairs, one of the pitches wins out in the end; for instance, A♭ disappears in favor of A, C in favor of B, and so on. Because the oscillations occur at different moments, many different combinations result. It could be argued that the listener has no means to predict the eventual outcome of the sum of all the oscillations and so has no way of cognitively organizing the prolongation, but providing a secure basis for prediction is precisely the role of context—played here by the exchange of voices. The larger structure is also clarified on the surface by the hemiola that marks the two outer members of the voice exchange. (The brief appearance in bars 380–81 of a related chord as an embellishment of the central embellishing chord is also marked by hemiola.)

In set-theoretical terms, the cadential chord can be understood as W at T₆ with three added pcs. Of these three, F♯ is an embellishment of F♮, D♯ can be heard as embellishing the D♮ of the G–D pedal point, and B adds a note in common with the original transposition, that is, in addition to the pitches G and C♯. (These last two form the only tritone of the original chord at T₀; the only other transposition that preserves them is T₆.) Two tones that continue to be involved in embellishing motion and therefore maintain ambiguity till the end, D and F♯, are tones whose motions in the bass—to C♯ (b.370–72) and G (b.385–90), respectively—frame the final scene (refer again to ex.6a).

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32. Besides, inability to predict the outcome of a prolongation is often the case with tonal music as well. It is usually masked by our mostly unconscious repertoire of reasonable expectations, based on our early exposure to other tonal music. “Dropping the needle” in the middle of this prolongation would indeed make it very hard for a listener to predict the outcome, but no more so than in the case of a tonal prolongation heard by a listener as lacking in early life experience of tonal music as most of us are of atonal music.
Even though the cadential chord is based on the tritone transposition of $W$, it is voiced with $G$ in the bass, as $W$ was (see ex. 7b). The voice exchange in effect restores the position of the voices to that of the opening chords—$E–D, G–C#$—after their inversion in the interlude and at the beginning of the final scene—$D–E, C#–G$ (see ex. 7c). The objection that $W$ has $D#$ rather than $C#$ on top is worth addressing, if only to remind the reader that the tritone $G–C#$ is of much greater significance in all that follows $W$ than is the interval between the literal outer voices.

The embellishing harmony (EM) unfolded in bars 379–85 comprises a number of sets associated with Marie (see ex. 7d). $M$ itself, at $T_7$, is featured as the resolution of its own embellishing chord (6-Z28), whose pc makeup relates it more to the harmony prolonged by the voice exchange (PR)—note the common tones, indicated by asterisks, $C#$, $E$, and $G$. The later appearance of the same set a whole-step higher, however, is the last stage of the unfolding of the embellishing harmony. In other words, two transpositions of the same set here have markedly different structural functions based on their transposition level (i.e., their pc content). The chords that constitute the unfolding harmony are arranged so that each succeeding chord contains four common pcs with the previous chord. Several of the pcs are retained throughout and several are dropped; the latter all come back in the final cadential chord (which is 7-33, not 8-24, as in Jarman and Schmalfeldt: I cannot hear the $F#$ as integral to the last chord after its resolution to $G$ in the bass and its reiterated resolution to $F_n$ in the closing oscillation).

The transposition ($T_7$) of the central chord of the embellishing harmony, $M$, seems designed to maximize its similarity to $W$ at $T_6$ (plus $B_n$) while avoiding $C#$, one of the pcs involved in the voice exchange being embellished. (Obviously $T_6$ would maximize its dissimilarity.) The only transposition with more common pcs, $T_9$ [E1267], includes $C#$; two other transpositions have the same number of common pcs: $T_0$ [2459T], which has already been featured in the orchestral interlude, and $T_5$ [79T23], which includes $G$, the other pc involved in the voice exchange. By maximizing the common pcs of and related chords with $W$ in the final scene, Berg emphasizes their closeness, where previously he had disguised it. What is more, he lays out the similarity by in effect turning $M$ into $W$ note by note.

Further evidence of a quasi-traditional role for the bass can be found in bars 381–86. The descending lines of these bars are composed so that almost any four consecutive tones include at least
once the trichord, 3-4, associated with the M family. There are twenty-four unordered trichords 3-4. Of these, twenty occur in the descending lines; two sound as a result of the descending line in combination with the sustained chord (4-18). Example 8b shows the descending line in “exploded” form to reveal the various transposed occurrences of 3-4. The two trichords 3-4 that do not occur at all are those that include both F and F#, [56T] and [156]. Since the bass is governed by a motion from F to F# in this passage (refer back to ex.6a), this exclusion is understandable. Note also how the motivic parallelism F–E–D and F#–E–D# (bars 383 and 384) mirrors the prevailing bass motion (F–F#).

Another trichord, 3-3 (014, i.e., “Marie as mother”), associated with Marie in her relationship to Wozzeck—which sets both Wozzeck’s words “Ach, Marie” (act 1, scenes 1 and 4) and Marie’s “Komm, mein Bub” (scene 3)—occurs repeatedly in the same passage. This trichord is not included in M, being a characteristic “whole-tone plus” subset of W and the smallest member of the W family (a Bergian joke perhaps). It is introduced in tandem with 3-4 in the first music Marie sings (the trio of the military march played by the offstage band in act 1, scene 3; see ex.8a), which Schmalfeldt convincingly proposes as the source of “Marie’s pitch-structural matrix.” When Marie slams the window and the pit orchestra interrupts the offstage military band, its first chord is not M (5-20), however. Schmalfeldt relates the first simultaneity to M as a subset (4-16)—literally true—but can only do so by ignoring the second note in the melody, f₂, which is clearly part of the same harmony, being approached by leap and occurring within the same metric subdivision as the first chord. Berg could have composed the passage using M, either by making the lowest note of the first chord D♭, or by changing the second melody note to E♭. The latter would have eliminated “Marie as mother” but would have referred to Marie’s characteristic perfect 4ths—including the child’s last words in act 3, scene 5, “Hopp, hopp,” at precisely the same pitch level, a♭/g♯2–e♭2/d♯2! The chord we actually do hear is 5-29, the chord of resolution of the passage at the end of the previous scene, now at T₁₀. The reader will recall that at T₀, 5-29 shares four of five pcs with M (refer back to ex.2e).

33. 6 times 12 divided by 3 equals 24: There are 6 trichords 3-4 for each pitch class (the pc can appear as bottom, middle, or top [3] of the prime and inverted forms [x 2]), times 12 pcs, divided by 3 to eliminate duplications (since there are three pcs in any given trichord that trichord will appear three times, once for each pc).

34. See Schmalfeldt, Berg’s “Wozzeck,” 123ff. [In other words, Schmalfeldt is absolutely right—but gives the wrong explanation for what she hears.]
**Hopp, hopp!**

Joseph Kerman attempts to undermine the effect of the interlude by revealing that it is a slow and rather Mahleresque waltz, but this is really quite beside the point. 

(Does he the sort of person who points out flaws in the plots of Hitchcock movies to his friends?) The pathos bordering on bathos of the interlude is effective in the theater, especially after the distancing of the audience that Berg enforces by various means throughout the opera. If it is granted that M is being prolonged in this number, to verge on bathos seems apt in another way: this is how the sentimental and self-pitying Marie would have us see the story—as a romantic tragedy. (Note the distant echo of her line from act 1, scene 3, bars 456–57, “Der Mann! So vergeistert!” at bars 343–44 of the interlude.)

Although Berg identified with his protagonist on some levels, the ironic (echt modernist) last scene shows that he ultimately does not see the story as a tragedy. The second chord of the opera had a similarly ironic effect—made more comic by extreme compression: the first chord, the yearning M, spanning an 8ve and a minor 7th and consisting of 4rds, 4ths, and 5ths, was suddenly deflated into W, spanning an augmented 5th and consisting of 2nds. Berg’s music gives the last scene the inevitability lacking in the drama by making it the needed deflation of the overblown rhetoric of the interlude. Then at the end, the stage is left empty, a world suspended between the poles of Wozzeck’s behavior, B and C#. In this state of suspension, one last symmetry unfolds. Earlier interpretations of both the play and the opera tended to see the theme as the destruction of the individual by the social order (not an unlikely interpretation given Büchner’s political radicalism and Berg’s own statements about the work). Recently, Jarman has proposed that it is more apt to describe the natural world with its mechanistic cycles and its indifference to human affairs as Wozzeck’s true nemesis—pointing out how the ubiquitous symmetries symbolize such a natural order (also convincing, given Berg’s interest in the theories of Wilhelm Fliess). In fact, I think it is precisely between these forces that we see Wozzeck trapped—one might say a Freudian rather than a Flissian interpretation.

The obsessive guilt Wozzeck feels over the murder is symbolized by the *Hauptidehymus* of act 3, scene 3: Wozzeck cannot escape his consciousness of guilt—practically every note in the orchestra and every word he or anyone else utters is contained by the obsessive rhythm (every single instance is labeled in the score by Berg, as well). The rhythm is introduced subliminally by the staggered

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35. Kerman, *Opera as Drama*, 188f.

entrances of the instruments during that first crescendo on B at the end of scene 2. After scene 3 it is dissolved (though still recognizable in the first rhythm of scene 4). The rhythm is marked by Berg only once more, during scene 4, at the moment when Wozzeck realizes that he must find the knife and dispose of it—the rhythm would then seem to die with Wozzeck, naturally enough.

Yet, isn’t it recalled—as subliminally (and as unmarked by Berg) as it was introduced—by the 8ve G’s in the final measures of the piece? This recollection is prepared by the similarity of harmonies between the openings of scenes 3 and 5 (see ex.9a); moreover, the first consciously audible pitched rendition of the rhythm was on G (in association with a prominent G#/A♭), in the pianola solo at the beginning of scene 3.

The circle closes—like a trap. This very cinematic opera ends like one of those science fiction movies in which the monster survives (and the final title asks “The End?”). The murder will continue to follow the child—can we doubt that he will grow up to be another Wozzeck? (Others have felt this, but no one has previously pinpointed the source of the feeling.) Berg’s obsessively exact prescription of the stage movement fits: the curtain is to begin to fall as the child rides off on his hobbyhorse; the stage should be empty on the beat that the oscillation of B and C# begins; the curtain must hit the stage at precisely the moment when the recollection of the Hauptrhythmus starts. The anguish that haunted Wozzeck from the beginning, which was only crystallized in the guilt over the murder, does not die with him but continues to hang over the world like a pall: Berg’s empty stage seems to include the audience in the plight of the characters, and then the closing curtain keeps us from escaping the plight of the characters, as if to say that we are all suspended between the C# of society’s constraints and the B of instinct.

37. Perle shows how this variation on the rhythm is in fact derived from the last overlapping statements of the rhythm in the brief orchestral interlude between the scenes. See The Operas of Alban Berg, Vol. 1, 181, example 186, in the section on rhythm and tempo added to the reprint of “Musical Language.”

38. Although the rhythm is somewhat distorted in the final recollection, it has in fact appeared in a number of variants (see Perle, The Operas of Alban Berg, Vol. 1, 174–81). The distortion of the rhythm as it surfaces at the very end was prepared at a point in scene 3 where F# moves to G in the bass (see ex.9b, and cf. Perle’s example 184)—just as it does before the putative recollection.
Appendix A

Of all the treatments of the opera, the first extensive and analytically sophisticated study remains in many ways the best: George Perle, “The Musical Language of Wozzeck” (first cited in note 14 above). Douglas Jarman’s treatment comprises several sections in his book, The Music of Alban Berg (see note 8 above); both the book and the sections on the opera are models of their kinds. I discuss my areas of disagreement with Jarman in the main body of this essay. Though considerably longer, Janet Schmalfeldt’s book (see note 6 above) represents something of a retrenchment—despite the author’s evident musicality and sensitivity to all aspects of the work—because of its too rigorous reduction, also discussed above. More recently, Allen Forte has published two studies of the opera, “Tonality, Symbol, and Structural Levels in Berg’s Wozzeck” (cited in n.29 above), and “The Mask of Tonality: Alban Berg’s Symphonic Epilogue to Wozzeck”; the second study’s analysis of the orchestral interlude between scenes 4 and 5 of act 3 is discussed in note 28 above. Most recent of all is another survey, The Music of Alban Berg by Dave Headlam (New Haven: Yale University Press, 1996), which discusses Wozzeck at some length, if not in the depth that Jarman does.


Although some find Perle’s approach too ad hoc, among his strengths as an analyst are a willingness to treat different elements separately—“tone centers,” “vertical sets,” “chord series,” and so on—and an admittedly old-fashioned flexibility of terminology that responds to the music instead of trying to make it respond to established theoretical categories. For myself, I do not find pitch-class set theory sufficient as an analytical tool, as my being in the present company may have already led the reader to suspect. (Others, including Headlam, who are not primarily Schenkerians have also felt the lack of a distinction between the harmonic and the nonharmonic in set theory.) [After some of the rancorous exchanges between Allen Forte and others, notably Richard Taruskin (where Forte cast himself as a fly in Taruskin’s borscht) and George Perle (where thankfully a swinish persona did not suggest itself),] I think I ought to establish what status the theory has in my own work, since I do make use of it, at least as a lingua franca. I do this to clarify for the reader my orientation, not to suggest any revision of the theory—a job that is already well undertaken by others, including Forte.
A thread running through the debates has been what Forte rightly sees as a misapprehension of his purpose in creating the theory and a more general misunderstanding of the relationship between music theory and analysis. The strongest suit of pitch-class set theory is its abstraction. In his article, “Pitch-Class Set Analysis Today,” based on his talk at the King’s College London Music Analysis Conference, 1984, and published in *Music Analysis*, 4, 1/2 (1985), 29–58, Forte put it bluntly: “Music theory is abstract; music analysis is concrete. The power of a theory resides in its ability to provide a general background against which an analytical statement may be measured.” I believe I differ from Forte in thinking that theory and analysis can have no such settled relationship; that there is always the need in analysis for the ad hoc. In effect, I question whether theory really is a priori to analysis.

Be that as it may, pitch-class set theory can be seen as Forte’s attempt to avoid the epistemological issues that, as an eminent Schenkerian, he well knew plagued the early reception of that theory in the United States. Yet criticisms have fallen back on a recurring question: Does set theory tell us anything about what we hear? I have left my work open to this sort of criticism because I believe an analysis ought to do so, but set theory is not open to it, and I hope to have avoided spotlighting some of the analytical problems that result from the theory’s rigor as if to imply that they invalidate the theory. For it is beyond question that a theory does not stand or fall on a given analytical application made of it. Perle’s work on *Wozzeck* was criticized by Kerman on just such grounds (see note 3 above), so it is ironic that Perle allowed himself to use perceptibility as a criticism of set theory in his 1989 SMT keynote address (see n.5 above).

There is, however, a related issue in the analytical application of pitch-class set theory to *Wozzeck* in particular that, as far as I know, has gone unraised. What is the status of the supposed *representation* of a character in a music drama by a given set, if the set cannot itself be perceived as such? This is not to question whether sets can act as leitmotifs, which it will be evident I fully accept, but whether a particular instance of a given set can have any *dramatic* relevance if its identity cannot be heard but can only be seen by putting inside a closed curve. [(I have it on good authority that a “shmoo” is the correct, if informal, term.)] Both Schmalfeldt’s and Forte’s analyses are full of such instances. It is understandable and appropriate that one wants to talk about dramatic issues in discussing an opera, and the equivalence of set and leitmotiv works well in musical terms, but sets that are imperceptible have at least theoretical respectability, whereas imperceptible leitmotivs are ludicrous. [As one who finds much more to be perceptible than many others do, I am perhaps not in the best position to raise this issue, but I do have my limits.]
In connection with prolongation in posttonal music, see Straus (the citation is in n.29 above) and Fred Lerdahl, “Atonal Prolongational Structure,” in Stephen McAdams and Irène Deliège, eds., “Music in the Cognitive Sciences: Proceedings from the Symposium on Music in the Cognitive Sciences, 14–18 March 1988 Paris,” Contemporary Music Review 4 (1989), 65–87. Straus is discussed briefly in the body of this essay. Lerdahl declares that any prolongational theory that applies to atonal music must “shed its Schenkerian origins” (p.68). His reason for saying so is explicitly that he prefers his own generative theory of tonal music (GTTM) to Schenker’s as a cognitive theory. It ought to go without saying that if Schenker’s is a cognitive theory (as I believe it is)—and not merely a theory of tonal music—it is at best a cognitive theory in ovo. It does, however, give better analytical results than GTTM, in part because it calls for a performative integration of both top-down and bottom-up analysis. In contrast, GTTM is almost exclusively top-down and, as a result, relatively static, responding with less agility than an analytical method requires when dealing with art music. (Diana Raffman’s Language, Music, and Mind [Cambridge, MA: MIT Press, 1993] adopts GTTM as a theory of modular first-order cognition, i.e., she shows how we parse music as a kind of “natural language”; but GTTM tells us little about how we perform the higher-order cognition required by art music.)

Headlam, despite his welcome acknowledgment of the analytical limitations of set theory’s exclusive concentration on harmonic structure, explicitly eschews prolongation (pp.63–64) and as a result has to be content with offering an alternative harmonic explanation that relies on cyclic sets (though not entirely following Perle). He does thereby make a needed distinction between harmonic and nonharmonic tones but has to conclude his book with a frank admission that he cannot explain the latter (p.388).

It ought to be borne in mind that in Berg’s case at least, the “break” between late-nineteenth-century tonal music and what is assumed to be “atonal” music is far from clear. Berg obviously was involved in rethinking the basic means at his disposal, and the resulting music is very innovative—but it is an extension of the tradition nonetheless and tonal in some way yet to be adequately defined. (Forte, in the earlier of his two studies cited above, makes this point.) J. Peter Burkholder’s essay, “Berg and the Possibility of Popularity,” in Gable and Morgan’s book (cited in note 28 above), 25–53, addresses the issue of Berg’s links to the past, taking off on Mozart’s trope about writing to please both the general public and the connoisseur, and finding a key element of Berg’s solution to be his reliance on associations with older music. There is little to disagree with in the essay, but superficial resemblances to older music cannot be the extent of Berg’s connection to tradition, for dozens of his
contemporaries maintained such resemblances without either the popular success or the scholarly attention Berg has received. Burkholder’s essay seems subject to a prevalent oversimplification that innovation has to be radical. Berg not only retained much that was traditional but also was innovative on all levels of structure. Therefore, we cannot build a theory of the music from scratch but, what is more demanding, must rethink the best existing theory in much the way Berg and others rethought tonality.

Appendix B

If we assume that Berg started with second chord (W)—since it is of a type so characteristic of the opera—and that he deliberately imposed the features mentioned (pp.4–5, above; summarized below) as constraints on the constitution of the first (M), we can narrow down the choice from hundreds of possibilities to a more manageable number. By adding a few other, less obvious constraints, the choice can finally be narrowed down to the one Berg in fact made, with the assertion that just those constraints were determinative. The hypothesized process is sketched in what follows.

Given the constitution of the second chord, there are fifty-one possible initial chords if we assume the constraints mentioned in the text, to wit: the chords have to be mutually exclusive with respect to pitch class, there are to be the maximum number of linear intervals in the motion between the two chords, and one of the linear intervals has to be the tritone F–B (see Perle, “Musical Language,” 210–18; The Operas of Alban Berg, Vol. 1, 135–41); Perle always refers to this as B–F because of the characteristic vertical position of the pitches, even though the first chord, Marie’s chord, contains Marie’s note F and the second, Wozzeck’s chord, Wozzeck’s note B—see also note 19 above).

Since there are six linear intervals but these are five-tone chords, one linear interval has to be left out. Berg evidently wanted to include all the pitches of the “tonic” (odd) whole-tone collection, meaning that he had to have six odd and four even pitches in the ten-tone aggregate of the two chords. In other words, the total number of even and odd pitches are both even. If we think of intervals as the results of subtraction, it is clear that even-even and odd-odd subtractions will have even results, and even-odd and odd-even subtractions odd ones. With an even number of both even and odd pitches, each even-odd or odd-even subtraction will necessitate another, so odd results will always come in pairs. Since there are three odd intervals, this means that either one odd interval will have to be duplicated or omitted. Omitting linear interval 5—which is what Berg did—brings the number of possible initial chords down to thirteen.
If we extrapolate interval cycles from the outer voices of the thirteen two-chord progressions that omit linear interval 5, only four converge on G and C#, the pcs that form the cadential tritone, and with those four progressions only one initial chord contains no F#. As I have shown, the initial chord can be identified with D minor—a key that had special significance for Berg, according to Jarman (The Music of Alban Berg, 18, note 1)—so the lack of F#, a pitch that would create modal ambiguity, is a good possibility as the deciding factor.

Even though interval cycles do not play a major role in the opera, several succeeding intervals of the putative cycle in the outer voices of the first two chords do mark points of stasis in the first six measures: B♭–E, bar 3; and D♭–F, unfolded in bars 4–6. The poles of the melody in bars 2–5 are C#/D♭ and G, the tones on which the cycle converges to a unison.

Though the linear tritone between the first two chords is in the innermost voice, it is subtly exposed: it is played by the undivided second violins, while the two higher lines are played by the divided firsts, and the largest vertical interval of both chords lies below this innermost voice.