

Voice-Leading and Harmonic Criteria in the First Phrase of Stuart Saunders Smith's *Rose*

Colin Holter

I. Introductory Remarks

It is a powerful trope in the discourse on twentieth-century concert music that the rapid social and technological developments of modernity gave birth just as rapidly (and effecting just as much psychological havoc) to a shockingly unprecedented musical modernism. In Virginia Woolf's formulation, "human character changed";¹ with it changed the very premises on which concert music was to be written. Observers who held a stake in this aesthetic upheaval were—and are—inclined to imagine the relationship between tonality and a then-nascent atonality according to a historical narrative that privileges the "emancipation of dissonance" as a revolutionary sundering of traditional musical thought.² Continuities between the old music and the new were soft-pedaled, disruptions emphasized.

However, as early as 1922, the prospect of a more dialectical reconciliation of the tonal and the atonal was also visible. Consider the following passage from Arnold Schoenberg's *Theory of Harmony*:

A piece of music will always have to be tonal, at least in so far as a relation has to exist from tone to tone by virtue of which the tones, placed next to or above one another, yield a perceptible continuity. The tonality [itself] may then perhaps be neither perceptible nor provable; these relations may be obscure or difficult to comprehend, even incomprehensible. Nevertheless, to call any relation of tones atonal is just as farfetched as it would be to designate a relation of colors aspectral or acomplementary. There is no such antithesis. [...] If one insists on looking for names, 'polytonal' or 'pantonal' could be considered. Yet, before anything else, we should determine whether it is not again simply 'tonal'.³

Schoenberg's argument that any disposition of pitch-classes in time will suggest internal tensions and hierarchical relations is a useful one to keep in mind when encountering post-tonal music of any sort. However, it is especially valuable in the study of free-atonal music, which resists reconstructive analysis on account of its avowedly non-systematic (and therefore "intuitive," as its adherents often claim) production. Furthermore, because free-atonal music is written without recourse to new technologies, so to speak, of pitch selection—tone rows, spectra, stochastic processes—it represents a diachronic continuity of compositional practice, however opaque, across the twentieth

¹ Virginia Woolf, "Mr. Bennett and Mrs. Brown," *Collected Essays*, ed. Leonard Woolf, Vol. 1 (London: Hogarth, 1966), p. 1.

² In his preface to *The Structure of Atonal Music*, Allen Forte furnishes a perfect example, writing that in 1908 Schoenberg "relinquished the traditional syntax of tonality, which had been the basis of musical syntax for the previous two hundred and fifty years" (p. ix). Allen Forte, *The Structure of Atonal Music* (New Haven: Yale University Press, 1973).

³ Arnold Schoenberg, trans. Roy E. Carter, *Theory of Harmony: 100th Anniversary Edition* (Berkeley: University of California Press, 2010), p. 432.

century and into the twenty-first. The relationship between tonal criteria of harmony and voice-leading and the fruits of free-atonal composition is surely complex and likely to vary widely from composer to composer and indeed from piece to piece. How best, then, to make meaningful analytical observations about free-atonal music without sweeping that variety and unpredictability under the rug?

As a case study, I will address the very first phrase of *Rose* (2006), a solo flute piece by the prolific American composer Stuart Saunders Smith (b. 1948). Naturally, a composer working in 2006 is likely to be informed by a quite different literature of tonal referents than a composer working in 1922 would have been. The combination of Smith's origins as a jazz percussionist with his later conservatory training positions him well to extend, abstract, and extrapolate from jazz harmonies, "arriv[ing] at chromaticism by way of Harlem"⁴ instead of Vienna. What the emancipated dissonances of the early twentieth century have in common with Smith's bop-derived chromaticism is their accountability—a sidelong glance—to the harmonic and voice-leading criteria of earlier diatonic models.

Moreover, in the past few decades the focus of Smith's compositional practice has plainly been the construction of melodic polyphony, even in his many solo pieces. Because the production of *notes* (as opposed to timbres, grooves, performative actions, etc.) accounts for such a significant part of his compositional process and because he disavows systematic means of generating those notes, his catalog is an excellent place to look for evidence of inherited harmonic criteria. *Rose* is a prime specimen: a piece whose substance inheres almost entirely in its realization of melodic polyphony. Its first phrase is shown below (Example 1):



Example 1: The first phrase of *Rose*⁵

Several characteristics typical of Smith's music are in evidence here: large leaps, complex rhythms, little repetition, and the exploration of chromatic, equal-tempered pitch space. The affordances of these features condition our understanding of the phrase when we hear it; they enable the phrase to accomplish certain structural and affective work in the context of the whole piece. My own impression (one which emerged first from listening and which, I will argue, is brought about by concrete particulars of musical material) is that the work being done in the first phrase of *Rose* is chiefly structural: The phrase seems to have a quality of *openness*—meaning simply that the end of the phrase does not seem to be a point of repose. If *Rose* were a piece of tonal music, in other words, its first phrase would not end with an authentic cadence in the home key.

Of course, by any definition of "tonal" that is responsible to Western concert music from Corelli to Wagner, *Rose* is not a piece of tonal music. My goal is to investigate how and why the materials of this free-atonal phrase contribute to its structural quality of openness, a quality that is recognizable even in the absence of a

⁴ Personal conversation with the composer, April 29, 2013.

⁵ Used by kind permission of Smith Publications/Sonic Art Editions.

prescriptive or formally defined harmonic system. The phrase's achievement of this experiential function—important not only as a structural building-block in *Rose* but also as evidence of its own "musicality"—results from the meeting of harmonic and voice-leading criteria whose heritage is ultimately diatonic.

II. Observations: Harmony and Voice-Leading

Two superficial traits of the phrase are immediately apparent. First, like many of Smith's instrumental lines, it seems to be a compound melody. In fact, a two-voice interpretation would conform to a number of David Huron's generalized rules of voice-leading:⁶ There is no pitch overlap between the voices, the lower voice leaps in larger intervals than the upper voice, and so on. (The large leap in the upper voice from E5 to F6 that occurs toward the end of the phrase is legible as a displacement of that voice by an octave—not an uncommon voice-leading move even in common-practice-era music—rather than the introduction of a new voice altogether.) Second, it is highly chromatic. By the end of this twenty-one-note phrase, a full twelve-tone aggregate has been completed; additionally, segments of the chromatic set are in evidence at the beginning of the phrase in pitch classes [1, 0, E, T] and toward the end in pitch classes [5, 4, 3, 2].

The phrase's chromaticism can be described with greater specificity in terms of its interval-class and pitch-class content. The distribution of note-to-note interval classes is tilted heavily toward ic 1: There are eleven instances of ic 1, three of ics 2 and 3, two of ic 4, and only one of ic 5. No linear tritones are directly stated in the phrase. Furthermore, pitch-class space (i.e., the clock-face) is filled in first between 2 and 7 on the northwest side, then between 2 and 7 on the southeast side. Thus, the first half of the phrase (from the initial C-sharp5 to the G5) presents pitch classes [7, 8, 9, T, E, 0, 1, 2], and the second half of the phrase (from F5 to G6) presents pitch classes [2, 3, 4, 5, 6, 7], effectively apportioning separate expanses of pitch-class space to the two halves of the phrase (see Example 2 below). The chromatic aggregate is completed by the E-flat4 close to the end of the phrase.

However, all of these observations pertain to the phrase taken as a single stream of pitches rather than as a compound melody with two voices. Segmentation of the phrase into two voices affords two more pitch-streams for interval-class analysis. Example 3 below shows the upper and lower voices individually.

Among note-to-note adjacencies, the upper voice's ic distribution is heavy on 1 and 2, including five instances of each (as well as one instance of ic 4, two of ic 5, and none of ics 3 and 6). To put it another way, the upper voice shows almost all stepwise motion; the only leaps occur to and from the early D6 and from the later D6 to G6. Per Huron, this fluidity reinforces the integrity of the upper voice.⁷ The lower voice interval-class distribution, on the other hand, is more balanced. It includes one instance apiece of ics 1, 2, 5, and 6, two instances of ic 4, and none of ic 3. The disjunct quality of the lower line should not be surprising: Lower contrapuntal voices often make more leaps than upper voices.⁸

⁶ David Huron, "Tone and Voice: A Derivation of the Rules of Voice-Leading from Perceptual Principles," *Music Perception: An Interdisciplinary Journal* 19 (Fall 2001), pp. 1-64.

⁷ Huron, p. 35.

⁸ *Ibid.*, p. 33.

Example 2 is a musical score in treble clef with a key signature of one flat (B-flat). It consists of several measures, with some measures grouped by brackets and labeled with "5:" and "7:". A tempo marking "♩ = c. 48-52" is present at the beginning. A dynamic marking "mp" is also visible. Below the score, a series of circular diagrams, each divided into 12 segments representing pitch classes (E, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, T), are shown. Arrows point from these diagrams to specific notes in the score, illustrating the filling-in of the pitch-class space. The first instance shown has segments 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 filled, while the others show progressively more segments filled.

Example 2: Filling-in of pitch-class space (first instances only shown with arrows)

Example 3 shows two staves of music. The upper staff is in treble clef and the lower staff is in bass clef. Both staves have a key signature of one flat (B-flat). The music consists of a sequence of notes, primarily half notes and quarter notes, with some rests. The notes in the upper staff are generally higher in pitch than those in the lower staff, illustrating the relationship between the two voices.

Example 3: Upper and lower voices

Example 4: Notes to be removed

Example 5: "First-species" reduction

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In order to comment more insightfully on the piece's voice-leading, it will be helpful to establish a hierarchy of importance among the phrase's notes, particularly those in the upper voice (which outnumber those in the lower voice significantly). With a grasp on that hierarchy, a reduction relating each note in the lower voice to a note in the upper voice can be produced to make vertical harmonic relationships easily visible. However, in the context of free-atonal music, no prescriptive rule exists for gauging hierarchies among notes—the very crux of the problem this paper seeks to address.¹¹

My initial guiding principle will be note duration. This may be a somewhat controversial choice: In music of the common practice era, it often happens that short notes are given great structural significance. Moreover, rhythms in Smith's scores are not always realized as written (due in part to their often abstract relationship to the tactus); this is simply a part of his performance practice and in no way indicts Smith's notational ethics or the capability of his performers. Nevertheless, it has been my experience—having heard many renditions of Smith's music live and on record by performers ranging from students to seasoned specialists—that short notes tend to stay short and long notes tend to stay long in performance, and that (in the absence of other rhetorical signposts) the perceptual import of notes in this very texturally transparent music is governed in large part by duration.

Some of the notes (shown in Example 4 in dashed circles) will be removed because they are extremely short, under 200 milliseconds at 48 beats per minute: These include the early B-flat5 and D6, the G5, F5, and F-sharp5, the G4, and the D6. Moreover, other notes (shown in dashed squares) will be removed because they can easily be read as ornamentations to longer tones. These include the C-sharp6, an incomplete neighbor tone to the preceding C6, and the F6, a complete neighbor tone to

⁹ Huron, p. 35.

¹⁰ *Ibid.*, p. 33.

¹¹ In his 1987 article "The Problem of Prolongation in Post-Tonal Music," Joseph Straus confronts this problem: "Without a pitch-based way of distinguishing structural from non-structural tones, it will be impossible to reveal a prolongational middle-ground" (p. 5). However, the structures that ultimately come to govern Straus's concept of "association" (a weaker form of the prolongation characteristic of tonal music) are pitch-class sets, which have continued to dominate Straus's writings on atonal voice-leading; the utility of pitch-class set analysis in the present case is limited by the phrase's clear two-voice segmentation. Joseph N. Straus, "The Problem of Prolongation in Post-Tonal Music," *Journal of Music Theory* 31 (Spring 1987), pp. 1-21.

the E5/E6.¹² The E-flat4 in the lower voice represents passing motion between the preceding lower-voice D4 and the subsequent lower-voice F4.

The remaining notes can be grouped into the five dyads shown in Example 5. Although the purpose of this analysis is not to aggrandize my personal interpretation of the piece, this "first species" reduction comes close to describing the harmonic structures that are suggested to me by the phrase. These harmonic structures, in turn, might bear a likeness to familiar patterns from the world of jazz, the font of Smith's chromaticism.

If the phrase's rhythms are quantized into a simpler 6/8 framework, the two-voice reduction suggests a sketch of a not-inconceivable jazz progression (shown in Example 6 above) that reinstates the removed notes. The first dyad suggests a D-flat major 7 chord, an upper neighbor to the second dyad's C major 7 chord. The third dyad suggests an A-flat 7 chord with lowered ninth, a tritone substitution that leads to the fourth dyad, a D9 chord. The fifth dyad suggests an F 6/9 chord. These chords could be construed to relate to each other in the key of G major: The first two dyads are part of a predominant region, and the last four form a dominant region that starts with a tritone substitution, which proceeds to the normative dominant, then moves through a passing flat VI chord to get to flat VII. Alternately, they could represent an elaborated tonic-predominant motion in C major; which key to apprehend this material in (and indeed whether it is appropriate to use the term "key" at all in the context of atonal music) is largely a matter of personal judgment, but in *neither* case is the F-G dyad that closes the phrase legible as tonic.

III. Consolidated Analysis

The progression shown in Example 6 allows us to account for most of the phrase's notes that do not appear in the first-species reduction. Example 7 above uses dashed lines to show the paths of the upper and lower voices and slurs to show hierarchical inter-voice relations among notes (a dashed slur shows deeper-level passing motion from D4 to F4 in the lower voice). Importantly, those notes that are not clearly explicable through those hierarchical relations can be accounted for by superimposing the earlier pc and ic analysis over the voice-leading analysis—specifically, the phrase's tendency to fill in chromatic bands. Most of the harmonically unexpected notes according to Example 6's progression (such as the B-flat5 toward the beginning of the phrase and the D6 close to the end) are explicable as chromatic complete or incomplete neighbor tones or chromatic passing tones. The G5 and F5 roughly halfway through the phrase form a chromatic band with the preceding A5 and G-sharp4, one which is then resumed after the D4 in the lower voice by the following F-sharp5. The G4 in the lower voice continues this segment.

¹² For a defense of ornamentation (including neighbor tones) as an analytical principle in atonal music, see Michael Buchler, "Understanding Ornamentation in Atonal Music," *Proceedings of the 12th International Conference on Music Perception and Cognition and the 8th Triennial Conference of the European Society for the Cognitive Sciences of Music*, http://icmpcescom2012.web.auth.gr/sites/default/files/papers/171_Proc.pdf, accessed July 24, 2013.

Example 6: A hypothetical lead sheet. The notation shows a single staff in 6/8 time with five measures. Above the staff are chord labels: D \flat maj7, Cmaj7, A \flat 7(\flat 9), D7(9), and F \sharp 9. The notes are: Measure 1: D \flat 4, F \flat 4, A \flat 4, C \flat 5; Measure 2: C \flat 4, E \flat 4, G \flat 4, B \flat 4; Measure 3: A \flat 4, C \flat 5, E \flat 5, G \flat 5; Measure 4: D \flat 4, F \flat 4, A \flat 4, C \flat 5; Measure 5: F \sharp 4, A \sharp 4, C \sharp 5, E \sharp 5.

Example 6: A hypothetical lead sheet

Example 7: Exhaustive graph. The notation shows a single staff in 6/8 time with five measures. The notes are connected by solid and dashed lines, representing an exhaustive graph of the melody. The notes are: Measure 1: D \flat 4, F \flat 4, A \flat 4, C \flat 5; Measure 2: C \flat 4, E \flat 4, G \flat 4, B \flat 4; Measure 3: A \flat 4, C \flat 5, E \flat 5, G \flat 5; Measure 4: D \flat 4, F \flat 4, A \flat 4, C \flat 5; Measure 5: F \sharp 4, A \sharp 4, C \sharp 5, E \sharp 5.

Example 7: Exhaustive graph

Additionally, the points of articulation in the voice-leading analysis relate in telling ways to the texture of the pitch-class and interval-class analysis: The seam between pitch-space segments (i.e., the F5, which is more important as a location than as an event in itself) precedes immediately the D4 that Example 5 connects to the D7add9 chord. That chord, meanwhile, is the most substantial hint so far that the one-sharp diatonic collection is the normative harmonic setting of the phrase and that chromatic departures from it are elaborations. This point in the phrase, approximately its halfway mark, is meaningful both as the fulcrum of the phrase's pitch-class space exploration *and* as the location at which the normative diatonic collection of the phrase is most identifiable.

After the diatonic collection of the hypothetical lead-sheet progression settles on one-sharp at the proposed D7add9 chord, the passing E-flat4 which completes the aggregate coincides with a shift *away* from the one-sharp collection to the two-flat collection; it initiates the mode-mixture that pushes the "exit door" of the phrase open. In other words, this E-flat presents new harmonic information that is meaningful both as the completion of the phrase's aggregate—a kind of *openness-in-flatness* (as in, an "open field" with no holes in chromatic pitch-class space)—and a shift away from the consolidating one-sharp diatonic collection—a kind of *openness-in-aperture* (as in, an "open door" through which a new structural harmonic background can enter). Openness is also in evidence in the registral and gestural disposition of the phrase: The pitch ceiling and floor move away from each other, literally "opening" the gap between the voices, and the final note of the phrase is the highest.

The inductive nature of these conclusions makes them somewhat circumstantial, admittedly. However, several counterexamples (see Example 8) that alter features of the phrase and consequently produce quite different structural impressions will buttress the arguments made above.

In the first counterexample, the lower voice has been transposed up a step to G major, the "key" of the upper voice; this transposition produces a very strong closure in G at the end of the phrase. The second counterexample maintains the original's pitch classes but redistributes them between the two voices arbitrarily, in this case producing a D-G in the lower voice at the end. That bass motion also points much more strongly toward a resolution in G. Thus, if the pitch classes had remained the same but been differently allocated to the upper and lower voices, the effect of the phrase would have been wholly different; it is not just Smith's choice of notes but his disposition of those notes between voices that is crucial to the effect of the phrase. Finally, the third counterexample transposes all of the notes into a much narrower registral ambitus. By moving all of the notes into a single augmented octave, the distinction between voices is dampened, and the impression of G as a modal "final" is strengthened. The single pitch stream that dominates the end of the phrase does much less to suggest background harmonies than does the original's two-voice stratification.

Three musical staves illustrating counterexamples. Each staff begins with a treble clef, a key signature of one sharp (F#), and a common time signature (C). The first staff is labeled "c. 48-52" and contains a sequence of notes with dynamic markings: a forte (f) dynamic at the beginning, followed by mezzo-piano (mp) and forte (f) dynamics. The second staff is also labeled "c. 48-52" and features a mezzo-piano (mp) dynamic. The third staff is labeled "c. 48-52" and features a mezzo-piano (mp) dynamic. Each staff includes numerical annotations (11, 5, 7) with arrows indicating specific intervals or groupings of notes. The notation includes various note values, rests, and slurs.

Example 8: Three counterexamples

Example 9: The second phrase of *Rose*

Example 10: Root motion in the first two phrases of *Rose*

Another way to assay the phrase's openness is to briefly examine the phrase that follows: What harmonic behavior does this consequent phrase show?

The second phrase (Example 9) is more languorous in pace, but on its face it shares many characteristics with its antecedent, notably large intervals and heavy chromaticism. However, the nature of its chromaticism differs substantially from the first phrase's in ways that collude with a noticeably longer average note value to suggest a slower harmonic rhythm: The lingering D4 that follows the grace-note E5 is connected to the D5 halfway through the bar, prolonged via an F-sharp major 7 chord with a raised fifth (spelled G-flat, B-flat, D, and F) related to the deeper-level D as a kind of chromatic mediant; after that, a diatonic ascent (C-sharp, D-sharp, E) with an octave displacement points to E as the next central pitch class. Together, then, the first and second phrases form a kind of progressive period that moves from C-centricity to E-centricity. The roots—in some cases respelled for clarity—of the major harmonic areas in this period are shown below (Example 10):

From this broader perspective, the "openness" of the first phrase emerges from its ending in the middle of a prolongation of D that itself embellishes passing motion from C to its mediant.

IV. Concluding Remarks

I propose that the analytical observations made here have ramifications that extend beyond Stuart Saunders Smith's compositional practice. Compositional decisions—even very concrete ones like which note to write next—are informed by a variety of criteria; jazz and early atonal concert music are precisely the literatures that Smith's biography might suggest would furnish criteria for those decisions. Moreover, the relationships between the pitch-class observations and the voice-leading observations that *Rose* invites us to make point to a significant philosophical question in the area of atonal music: Are tonal relations latent in our apprehension of intervals, or are intervals imagined strictly as distances?

Let me illuminate the question by returning, finally, to Schoenberg. David Lewin recounts an anecdote in which a frustrated Roger Sessions interrupts a lesson to ask Schoenberg what a perfect fifth really *is*—to which Schoenberg replies, "slightly more than half an octave."¹³ I would argue that in order to get to the bottom of the first phrase of *Rose* (and quite possibly of a great deal more free-atonal music), it will be necessary to understand intervals in both senses, as distances and as symbols. In the case of *Rose*, we might ask whether a major seventh is "almost an octave" (and the inversion of "just slightly more than a unison") or the bounding interval of a major seventh chord. Clearly it is both; the way in which it is both is what is at issue in Smith's negotiation of compositional criteria. Competing conceptions of intervals, voice-leading, and harmony in free-atonal music produce fascinating concordances and contradictions that account for much of its aesthetic richness but are difficult to articulate clearly—difficult, but by no means impossible. If free-atonal composition is undertaken with a plurality of models and influences in the composer's mind, then a provisional, individual, and *ad hoc* analytical scheme has the best hope of addressing it responsibly.

¹³ David Lewin, "Some Ideas About Voice-Leading Between PCSets," *Journal of Music Theory* 42 (Spring 1998), p. 26.