

*Tristan* sonority (*Schimmer*) which permeates the opening of Opus 11, as well as their respective use of thrice-repeated gestures. But he does not remark upon any of the motifs or pitch similarities I have pointed out.

7. While I shall not do so here, I think one could make a case that the tetrachord which concludes Opus 11, No. 1 is a final allusion to the *Tristan* chord.

8. At the risk of sounding silly, I can't resist pointing out that the opening bassoon solo of *Sacre* begins with the F-E half-step sign identified in *Tristan* and Opus 11 (albeit an octave higher). I wonder if the Jungians would call this half-step some kind of musical archetype, a portent of 20th century modernism, perhaps?

9. See e.g. Schoenberg's article, "My Evolution" in *Style and Idea* (Berkeley: University of California Press, 1984), p. 86.

## On the "Ninth-Chord in Fourth Inversion" from *Verklärte Nacht*

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**F**igure 1 displays a score for measures 38-50 of Schoenberg's *Verklärte Nacht* Op. 4.

The chord over the bass b flat in measure 42 is the subject of a famous commentary by the composer. He says, "I wrote the inversion of a ninth chord . . . without then knowing theoretically what I was doing—I was merely following my ear."<sup>1</sup> His musical example is reproduced here as figure 2. Figure 2a transcribes measures 41-42; figure 2b displays the "root position" of the "ninth chord" at issue.

Schoenberg continues: "What's worse, I see now that it is none other than that particular inversion which the theorists condemned most resolutely of all; for, since the ninth is in the bass, its simplest resolution goes to a six-four chord, and the so-called 'böse Sieben', the forbidden resolution of a seventh to an octave, occurs between two of the voices (figure 2c). But the six-four chord could surely occur as a passing chord, . . . and the 'bad seventh' could be avoided if (as in figure 2d) the tenor skipped to d flat."<sup>2</sup>

About this passage and the commentary, interesting questions suggest themselves. Why does Schoenberg persist in worrying the bizarre harmonic analysis of figure 2b,c,d? Does he really hear it as relevant to the musical effect of the chord in the passage at issue? A partial answer is supplied by his sardonic intent to satirize "the theorists" here; the intent becomes clear when his commentary continues. "Only now do I understand the objection, at that time beyond my comprehension, of that concert society which refused to perform my Sextet on account of this chord (its refusal was actually so explained). Naturally: inversions of ninth chords just don't exist; hence no performance, either, for how can one perform something that does not exist?"<sup>3</sup> But this satire is not the whole story; Schoenberg is perfectly in earnest about the theoretical conclusion he draws from his example: "Therefore, as I said, the ninth chord and its inversions exist today,

Figure 1

Figure 1 shows a musical score for measures 38 to 46. The score is written for a piano and includes various dynamics and performance instructions. Measures 38-40 are marked *ff* and include *rit.* and *tempo* markings. Measures 41-42 are marked *p* and include *dim.* markings. Measures 43-44 are marked *pp* and include *rit.* markings. Measures 45-46 are marked *pp* and include *mit Dämpfer arco* markings. The score is in a key signature of one flat and a 3/4 time signature.

Figure 2

Figure 2 shows a musical score for measures (a) through (d). The score is written for a piano and includes various dynamics and performance instructions. Measures (a) and (b) are marked *pp*. Measures (c) and (d) are marked *pp*. The score is in a key signature of one flat and a 3/4 time signature.

or at least they can exist. The pupil will easily find examples in the literature.”<sup>4</sup>

Schoenberg’s persistence here becomes clearer when one asks another question: since the “a flat ninth chord” is originally the critics’ construction, not Schoenberg’s, why doesn’t the composer respond to them by pointing out that the chord in question is a chromatic passing chord, a formation with no essential harmonic function? The answer is very clear to the reader of the *Harmonielehre*: Schoenberg insists that no tones are “non-harmonic”, and no harmonies are “Zufällige”, i.e. essentially only contrapuntal in *function*, whatever their historical or generative origin.<sup>5</sup> Hence it is vital for Schoenberg the theorist to find a definite harmonic meaning for his chord. It is hard to imagine that he himself was satisfied with his analysis of the music involved; yet it is not at all hard to sense the intensity of his belief that there must be some harmonic explanation for the chord under discussion.

The next question immediately suggests itself: *is there a strictly harmonic function for the chord, and if so how is it to be described?* This question will provide the focus for most of the study which follows.

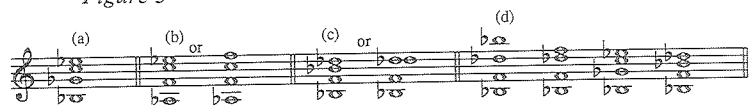
The function I shall propose is actually a network of functions in a variety of contexts; when we consider the matter of context, further questions suggest themselves. Why does Schoenberg cite just measures 41-42, in figure 2a, as a context in which to examine the chord? Why, that is, does he not continue his citation up through the (apparent) half-cadence at measure 43? Or through the progression of measure 45, which reasserts the progression of measure 41? Or through the deceptive resolution at the bar line of measure 46? No doubt practical considerations made him want to keep his musical example short. Yet it would have required only one more chord to bring his example up to the (apparent) half-cadence in measure 43.

That half-cadence is particularly relevant to the issue of context, because the chord of measure 42 over the bass b flat can suggest to a considerable extent some sort of “b flat minor” ambience; the potential is considerably enhanced when the chord is heard in connection with the “dominant ninth of f minor” from measure 43, all the more so when the

latter chord is heard as marking a half-cadence. This ambience is picked up, maintained, and developed in the big new section that begins at measure 50. Indeed, that context for the chord of measure 42 is embedded in a yet larger context, involving a heavy structural role for b flat minor and f minor throughout the composition as a whole. Richard Swift has presented an excellent discussion of the latter context in a very significant critical paper.<sup>6</sup> Swift specifically notes the involvement of the chord from measure 42 in the “b flat minor / f minor” regions of the piece; he discusses measures 41-45 as a central and recurrent thematic element of the piece.

Let us continue investigating the chord at issue, then, by exploring more fully just which of its features, in which contexts, make us hear a b flat minor ambience invoked. First we can consider the chord in its own context. If we suppress the a flat in the first cello, we can hear the rest of the chord as a familiar structure in b flat minor (or b flat major with mixture): e flat, c, and g flat, in that order from the top down, over a bass b flat (figure 3a).

Figure 3



The chord in its own context does not suggest one determinate harmonic impression. If one takes the bass as dissonant under the ninth, one hears the resolution of figure 3b implied. 3a and 3b together project the sense of a root progression II V in b flat. The sense of this environment would be stronger if the registration of figure 3a were rearranged with the note C an octave lower: the bass is more likely to sound dissonant with a second over it, than with a ninth. In the spacing of figure 3a, it is not difficult to hear the bass as stable; in that case, the ninth and the eleventh sound dissonant, and one expects the minor sixth to resolve down as well, yielding the resolution of figure 3c. The ninth in the inner voice resolves either down or up, as shown; were the ninth in the top voice it would prefer the upwards resolution more strongly. Hence “eleven-nine-six” rather than “nine-six-four.” To my ear, figures 3a and 3c together project the root progression IV I in b flat; the chord of 3a has somewhat the effect of a IV six-four with “added ninth.”<sup>7</sup>

The chord of figure 3a in its own context will not tell us which of the two environments is at hand, that leading to the resolution of 3b, or that leading to 3c. However, the chord of 3a, together with an only slightly enlarged context, can provide us with such information. Given the chord of

3a, then the environment of 3b will be clear if only we hear the c and/or the e flat as locally more stable than the b flat. And the environment of 3c will be clear if only we hear the b flat as locally more stable than the c and the e flat. Any context for the chord which provides us to a certain extent with either of these added impressions will render the interpretation of the chord more definite to that extent.

Having gone through this preliminary groundwork, I shall now assign a particular name to the chord of figure 3a when heard in a context that makes e flat and/or c sound locally more unstable than b flat. I shall call the phenomenon an “eleven-nine-minor-six chord on b flat.” By this name I distinguish the phenomenon from that of the same chord in a context that suggests the resolution of figure 3b; the latter phenomenon might be assigned its more usual modern name of “ii four-two in b flat minor”. Figure 3d illustrates the eleven-nine-minor-six in action at the beginning of Schubert’s “Einsamkeit” (transposed). The four chords symbolize the governing harmonies of the opening four measures. The musical texture makes it aurally clear, even before we have heard measure 4, that the harmony of measure 3 displaces the middle voices of the progression over the droning bass. Hence the b flat bass sounds decidedly more stable than the ninth c; the e flat above is easily imagined as passing even before measure 4 confirms that idea; we recognize at once the sensation of the eleven-nine-minor-six. Schubert allows the harmony to carry the same motives that the tonic harmony carries; it even introduces a new motive of its own, subsequently taken up by the tonic harmony. Schoenberg would point to all this as substantiating his claim that the eleven-nine-minor-six must be considered as a full-fledged “harmony”, whatever its genetic “origin” in the voice-leading of figure 3d.

Let us now return to *Verklärte Nacht*, and specifically to measures 41-42. I claim that we will recognize the first harmony of measure 42, without the a flat, as an eleven-nine-minor-six chord over b flat. We shall do so because the cadential material of measure 41 gives us two strong clues to trigger the appropriate environment. Specifically, the progression of measure 41 makes us anticipate a cadential arrival of d minor at measure 42. Because of that we shall hear the bass b flat of measure 42 as locally stable: it takes the harmonic weight of the anticipated cadence as a deceptive substitute for the expected d root. Furthermore, in the cadential material of measure 41 we expect the melodic f-e to continue on down to d. The melodic e flat of measure 42 intensifies that expectation chromatically. So we hear the e flat as strongly dissonant; it has a strong tendency to resolve down to melodic d over the stable bass root b flat = d: VI. The stable bass b flat and the downwards-tending melodic e flat enable us to identify eleven-nine-minor-six harmony; so strong are the

environmental clues that we can hear the harmonic function clearly even when it is clouded by the a flat of the first 'cello in measure 42. (We shall have much to say about that a flat later on.)

Figure 4a sketches the implicit deceptive cadence of measures 41-42 in normative form. Figure 4b shows the cadence accented by a triple suspension over the (stable) bass b flat. Figure 4c transforms the suspension harmony chromatically, giving rise to the eleven-nine-minor-six. The transformation adds even greater weight to the already-accented VI harmony, by *tonicizing* it. This comes close to the harmonic effect of the actual passage, except that the expected b flat major harmony never materializes in the acoustic signal, and (of course) the eleven-nine-minor-six harmony is complicated by the a flat in the first 'cello, a tone not represented on figure 4c.

Figure 4

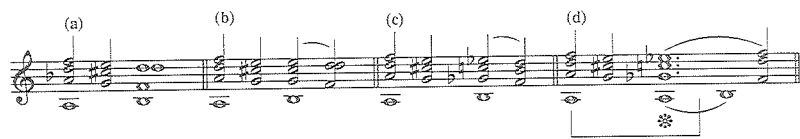
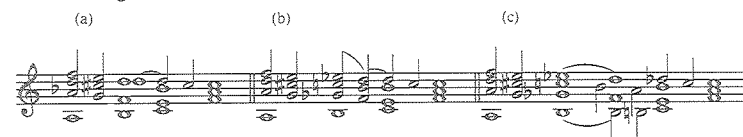


Figure 4d elaborates the tonicization even farther, imagining the suspended eleven-nine-minor-six already prepared over the preceding a natural in the bass. The imagined idea can be to some extent inferred from the chromatically related norm of figure 4b. The imagined diminished seventh chord of figure 4d, marked by a star, is not sounded acoustically in the music; it is nevertheless a syntactic plausibility. When the e flat, the c, and the g flat of the eleven-nine-minor-six chord are heard as if prepared over the bass, a progression is implied which we shall have occasion to discuss in the future, the progression involving the first three harmonies of figure 4d. We shall call this the "star-progression"; it is bracketed on the figure.

The effect of figures 4c and 4d, as already noted, is to tonicize the b flat root. The root, as a deceptive substitute for a cadential tonic, will easily bear the tonicization. But the question still arises: what harmonic purpose does the tonicization serve? The deceptive cadence clearly does not require it. The question brings us back, finally, to the matters discussed by Richard Swift: b flat minor, and f minor, are to play central roles in the composition as a whole. That implicates the tonicized b flat (minor) root of measure 42 in very large-scale contexts. But there is also a local context, in measures 41-43, that makes the tonicization functional.

I mean the modulation to f (major or minor, III of d minor) that is

Figure 5



heard in the environment of those measures. Figure 5a sketches a normative progression for the modulation. The deceptive cadence in d, represented by the first three chords of figure 5a, accents the b flat harmony as VI of d. The b flat root then becomes a pivot for the modulation, becoming reinterpreted locally as IV of f major. Notice the diatonic *Züge* in the outer voices: f major 8-5 in the soprano and f major 3-5 in the bass.<sup>8</sup>

Figure 5b shows our eleven-nine-minor-six chord tonicizing the pivot harmony b flat. A local function for the tonicization is thus manifest: it is always appropriate to tonicize a pivot for a modulation, and it is especially appropriate to do so when the pivot itself is a deceptive substitute for the tonic of the opening key.

Figure 5c puts more accent on the tonicizing eleven-nine-minor-six harmony, an accent roughly commensurate with its effect in the music. The subdominant of f major thereby acquires very substantial weight. The fifth harmony of figure 5c can be understood from that point of view: to get to a cadence in f, a countertonicization on the dominant side of that key is highly welcome. The harmony over the b natural in the bass accomplishes just such a tonicization; one can identify its harmonic function in this (!) context as VII-seven of V in f major, leading to the big dominant ninth chord of f that follows. The dominant ninth is minor (with d flat), not major (with d) as in figures 5a-b. A certain level of chromaticism having been attained, it must be maintained to push on to the cadence in the new key at the last chord of figure 5c. In particular the d flat makes both outer voices completely chromatic. The *Züge* in f major, 8-5 in the soprano and 3-5 in the bass, are now completely filled in by the chromatic steps.

Figure 5c lies very close to the actual harmony of mm. 41-43, minus the last d flat in the bass, and it would seem that we have now substantially heard what there is to hear about the first chord in measure 42. But nothing in fact could be farther from the case; as so often, Schoenberg begins his real work just where a lesser composer would be finished. True, figure 5c does represent important aspects of the harmony. But it does not address at all what the a flat of the first 'cello, at measure 42, is doing in the middle of our "eleven-nine-minor-six" chord. Nor does it address the issue of why Schoenberg, in our figure 2 earlier, chose to cite measures 41-42 *alone*, rather than going on one chord farther to the c ninth harmony. As it turns out, these issues involve still new contexts for the harmony we are investigating, contexts which will take us on through the

aborted *f* cadence, to the return of the *d* minor material in measure 45, and even beyond that.

We can begin by listening to the effect of the context Schoenberg actually cites in figure 2a, the context of measures 41-42 alone. Figure 6a sketches the progression involved.

Figure 6

We are quite puzzled as to the meaning in *this* context of the chord over the bass *b* flat, but we do have a clear impression of where we are at the end of figure 6a: we are on a *II*-seven chord of a minor, a chord which implies a dominant of a minor to come. Figure 6b sketches one plausible way in which our harmonic expectations might be realized.

These ideas suggest we consider the flatted harmony of measure 42 in connection with the idea of tonicizing *V* in *d* minor. And that suggests considering the two chords of measure 42 in a constellation about an implied diminished seventh harmony *b* natural, *g* sharp, *f*, and *d* (reading up from the bass). Figure 6c works out the suggestion; the idea is to hear figure 6a as an elaboration of this model. Here the “a flat” of the first ‘cello in measure 42 is revealed as a functional *g* sharp.

And indeed the context of measures 41-45 bears out just this interpretation of measures 41-42. Exactly the diminished seventh harmony constructed in figure 6c does in fact “return” in inversion, to govern the acoustic signal of measure 44; there then ensues at measure 45 just the tonicized *V*-of-*d*-minor we are waiting for. Figure 6d sketches the sensation. The model is especially cogent because the “*V*-of-*d*” that occurs in measure 45 is projected by precisely the cadential material that we heard

in measure 41, spaced somewhat differently over the same bass.<sup>9</sup> The implied cadence on *d* that we expect after measures 41-45 is symbolized by the diamond-shaped noteheads at the end of figure 6d.

The crucial diminished seventh chord of figure 6d is marked by a dagger on the sketch. The dagger harmony, together with the subsequent cadential six-four and dominant seventh chord, constitutes a characteristic progression of our present reading. The progression is marked by a bracket on figure 6d; we shall call it the “dagger progression.” Characteristic in this progression is the use of the dagger harmony to *prepare* the cadential six-four and dominant seventh. Our interpretation of measures 41-45, in figure 6d, is much fortified when we inspect measure 40 of the score. We find that measure 40 itself elaborates the dagger harmony, which thus prepares the cadential six-four and dominant seventh of measure 41, as well as the analogous harmonies of measure 45. That is, measures 40-41 already instance the dagger progression; not only does measure 45 rework measure 41, but the dagger progression of figure 6d reworks the dagger progression of measures 40-41. In this hearing, measures 42-45 as a whole extend and rework the cadential progression of measures 40-41, more or less along the lines of figure 6e.

Figure 7a elaborates that reading, showing how the dagger harmony of measures 42-44 is prolonged by the voice leading. Within the bracketed dagger-prolongation on the figure, the open noteheads are members of the dagger harmony; the solid noteheads are accessory tones of various types

Figure 7

in this hearing. The slurred segment of the tenor voice on the figure coincides with the first 'cello's notes in the music, except of course that the 'cello has a written a flat rather than a g sharp.<sup>10</sup>

Between the two chords of measure 42, figure 7a interpolates an understood German sixth chord: the bass b flat and the tenor g sharp remain; the e flat and g flat of the upper voices resolve to d and f. The c natural in the music is understood to resolve to b flat, doubling the bass of the German sixth.

Figure 7b focuses on some large-scale aspects of figure 7a, and shows how the German sixth chord fits into the picture. The cadential progression of measure 41 makes us await f and d in the upper voices at measure 42; the same progression makes us hear the bass b flat as harmonically stable; all of this was already discussed before in another context. Just as the b flat arrives in the bass, the augmented sixth g sharp appears over it; the chromatic e flat and g flat in the upper voices intensify our understanding of d and f above; the net effect is to make us understand the German sixth chord on figure 7b. As the bass moves from b flat to b natural, we understand the dagger harmony, marked as such on the figure. Both the German sixth and the dagger harmony prolong both the tones d and f. During the prolongation of the dagger harmony, shown on figure 7a, the tone f is tonicized. This reinforces our understanding that the structural line does not close on d (= 1 of d minor) at measure 42, but is rather still on f (= 3 of d minor) hereabouts: the subordinate *Zug* (3-2-1), shown in parentheses on figure 7b, composes out a passing motion from the f of measure 41 to a structural inner voice on d at measure 42; the primary tone f is regained at the same time, now transferred an octave lower. When the dagger harmony disappears at measure 45, the cadential progression starts again from the *Kopftön* f = 3 of d (now yet another octave lower). The notes at the end of figure 7b are diamond-shaped, and the "1" of the large-scale 3-2-[1] appears in brackets on the figure; this models our expectation, not the actual deceptive event of measure 46.<sup>11</sup>

We can now sort out two principal senses for the first harmony of measure 42. Figure 8 displays them. In figure 8a, the harmony is shown

as an augmented sixth on b flat, inflected by an eleventh and minor sixth above that are about to resolve to a tenth and fifth in the manner of a standard six-four chord. The augmented sixth, the tenth, and the fifth form a German sixth chord. In figure 8b, the eleventh and minor sixth are shown as arising from a standard eleven-nine-minor-six configuration over the bass b flat; the tonicized b flat functions as VI of d minor in a deceptive cadence, and it pivots to IV of f, supporting a modulation to f. The tonicized d and f *Stufen* help us understand the notes d and f on figure 8, which appear in the music temporally skewed away from the bass b flat of our chord.

The total effect of the chord may thus be somewhat understood in the sense of figure 8c. The chord is a type of augmented sixth chord; hence the annotation "#6" beneath the bass staff. It is specifically related to a German sixth chord in the same way that an eleven-nine-minor-six chord is related to its resolving five-three chord; hence the annotation for the eleven-nine-six chord between the staves. The total effect of the figuration, including both a sharp-6 and a flat-six, would be incomprehensibly fantastic to one who had not carefully gone over an analysis of the sort we have just undertaken.<sup>12</sup>

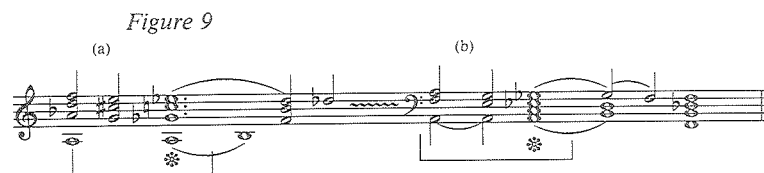
Central to our understanding of the German sixth harmony, and the related dagger harmony, was our understanding of an analogy between measure 41 and measure 45. Figure 6e, in particular, showed how the analogy expanded to relate a dagger progression in measures 40-41 with an understood dagger progression governing measures 42-45. We can develop further analogies between measure 41 and measure 45 as well. In figure 4d earlier, we conceptualized a "star progression" that could be imagined from the context of measures 41-42. We can now note that the cadential material of measure 45 actually continues into the deceptive resolution of measure 46 so as to produce the star progression. The g flat of the star harmony is spelled f sharp at measure 46, and the f sharp spelling is apparently "correct": the harmony represents an expected cadential d tonic, so one hears f sharp as the raised third of the d root. This context is certainly very clear, and yet there is a larger context in which one can hear g flat, rather than f sharp, within the star harmony of measures 46-48. That is the context sketched in figure 9.

Figure 9a depicts a perceptual construction from the events of measures 41-43. This is essentially a copy of figure 4d; the d flat coming up at measure 43 is also shown. Figure 9b depicts an analogous construction from the events of measures 45-50. The cadential progression at measure 45 is followed by the star harmony; this projects the star progression. The star harmony is elaborated by the music of measures 46-48. Then, at measure 49, the bass moves up from a to b flat, while the g flat of the star harmony

Figure 8

Figure 8 consists of three musical staves labeled (a), (b), and (c).  
 (a) Shows a G6 chord with notes G, Bb, D, F, Ab, Cb.  
 (b) Shows a German sixth chord (d: VI) with notes Bb, D, F, Ab, Cb, G#. The figured bass notation is 11, 10, 9, 8, b6, 5. Below the staff is the annotation (= F: IV).  
 (c) Shows a sharp six chord (#6) with notes Bb, D, F, Ab, Cb, G#.

is suspended above. This exactly parallels the model of figure 9a, except that in measure 49 (figure 9b), the e flat of the star harmony resolves at once to d over the bass b flat, instead of suspending over the b flat, delaying its resolution. The d natural of measure 49 moves on down to d flat at measure 50 (figure 9b), just as the d natural of measure 42 moved on down to d flat at measure 43 (figure 9a).



The star progression can be heard as well governing the last quarter of measure 38 and the first quarter of measure 39. Figure 10a reduces the voice leading of measures 39-40, together with the last quarter of measure 38. The voice leading follows the "law of the nearest way." The star progression is psychologically audible here because of the way the end of measure 38 is approached in the music. Measure 34 and measure 36 had essentially the same material as measure 38, but the cadential six-four and dominant seventh on the last two eighths of measure 34 did not really lead anywhere: a deceptive IV six-three at measure 35 led back to the II seventh harmony of measure 36. In similar fashion, the cadential harmonies on the last two eighths of measure 36 did not really lead anywhere: measure 37 was essentially a variation of measure 35, leading us back to the II seventh harmony at the beginning of measure 38. The cadential harmonies on the last two eighths of measure 38, then, are the third attempt to get somewhere with this material. Consequentially, measure 39 is experienced as a breakthrough, and we pay close attention to where we are going. In particular, the star progression depicted in figure 10a will leave its psychological mark on us.

Figure 10

Figure 10a takes us from the star progression to the dagger harmony of measure 40, the harmony that initiates the dagger progression of

measures 40-41. A bracket representing this dagger progression links figure 10a with figure 10b. Figure 10b displays the outer voices of the music over measures 41-44. The soprano of figure 10b recapitulates the soprano of 10a; the bass of 10b retrogrades the tenor line of 10a. In figure 10c, we see the "chaconne" idea beginning yet a third time. 10c, in its relations to 10b, condenses somewhat telegraphically the relations discussed earlier in connection with figure 9. Soprano and tenor lines of figure 10a span intervals of the dagger harmony, as do the soprano and bass lines of figure 10b.

The "chaconne" idea is useful: it enables us to bring together a good deal of apparently disparate material from measures 38-50. The idea is also suggestive, in that it reveals the composer already employing "developing variation," a technique of which he was to make so much in his later works.<sup>13</sup> Still, we should not allow the conceptual utility or the musicological interest of figure 10 to divert us from the original point of our business here, which was to explore the first chord of measure 42. It would be far from the spirit of Schoenberg, and wrong besides, to breathe a sigh of relief and write off the chord as a "voice leading event," attributing a measure of control to figure 10 that it does not have. To repeat myself perhaps once too often, we must attribute to the formation symbolized by figure 8c an essential harmonic function, if we want to listen to the music in Schoenberg's spirit.

Indeed, if we go back to figure 8, we can hear now that the component of the chord symbolized by 8a reflects the chord as it relates to the dagger progression (preparing a cadential d minor six-four to come), while the component symbolized by 8b reflects the chord as it relates to the star progression (resolving deceptively from a cadential d minor dominant seventh and moving on). Thus the chord of figure 8c contains both star and dagger elements at once: as a star phenomenon, it yearns deceptively away from the recurrent d minor cadences, propelling the music on past them; as a dagger phenomenon, it begins the preparation for a new d minor cadence, urging us toward such cadences rather than away from them.

The chord thereby summarizes in one instant, among other things, the propulsive force of the star and dagger progressions that keep the "chaconne" of figure 10 turning over upon itself. The poetic effect is masterful, reflecting for me the ambivalent feelings of the woman in the poem: she feels the urge to *avoid* revealing her secret; at the same time, she feels that she must *force* the matter to a head.

The supercharged texture at the instant we hear the chord of measure 42 is an unmistakable hallmark of Schoenberg's music. Looking back

from 1948, the composer wrote:

I personally do not find that atonality and dissonance are the outstanding features of my works. They certainly offer obstacles . . . . But why then did even the works of my first period always meet resistance at the first few performances . . . ? . . . the true cause must be found in my tendency to endow every work with an extravagant abundance of musical themes. . . . Already my early works show some traits of my mature style, but seldom are all the so-called difficulties crowded into one single place. If, for instance, heterogeneous units of a work are juxtaposed, the unit itself might not be too condensed or its harmonic background might be rather comprehensible; in other cases, a slightly varied repetition might support the memory; in still other cases, subsequent elements might function as belated connectives.<sup>14</sup>

The chord we have been studying shows the composer at the very limits of these early stylistic restraints.

Its simultaneous yearning away from d and striving (back) towards d is heard at other characteristic harmonic moments in the piece. Indeed the phenomenon is experienced at the moment the bass first leaves the pedal d that saturates the opening measures of the music. Figure 11 transcribes that moment, halfway through measure 9. Because of the b flat root over the first half of the measure, we can hear the bass c sharp as a d flat, urging us into Swift's realm of b flat minor; the sensation is powerful because we hear that the tonic bass, which has been droning on for eight measures so far, is finally displaced. Thus the d flat harmony, in the context of preceding events, is *yearning to move away* from the tonic. At the same time the c sharp, *as c sharp*, is the strongest possible melodic means for expressing a *striving to return* to d, a striving which we hear achieved in the context of figure 11 as a whole.

Figure 11



### Theoretical Appendix

The discussion of d flat and c sharp in measure 9 has just availed itself of a useful theoretical discourse constructed by Raphael Atlas to analyze enharmony.<sup>15</sup> In this discourse the word "context" appears as a formal term. The acoustic signal given by the bass on the third quarter of measure 9

(figure 11) "means" one thing—d flat—in a context that extends backwards to the beginning of the piece; the same signal "means" something else—c sharp—in a context focusing on the second half of measure 9. Atlas's theory is also useful for discussing the enharmony at the barline of measure 46. There, the bass "means" f sharp in the context of its own chord plus the cadential material of measure 45 that precedes it. However, the bass "means" g flat in perceptual contexts corresponding to figures 9 and 10: in *those* contexts, we are sensitive to the star progression leading into the barline of measure 46, and we hear the star harmony there.

In recent work I appropriated Atlas's usage to formulate a general theory of musical perception.<sup>16</sup> In this theory, a formal perception can not be referenced by merely pointing to this or that event (span of events), as what we are "perceiving" in a piece of music. One must also specify a formal context in which the event is being perceived, often including a heavy theoretical context, and often including a mentally constructed context of some complexity. To reference the perception, one must usually also specify certain relationships to other perceptions, relationships that are part of what the given perception is perceiving. Finally, one must also list specific statements that fix the nature of the perception in a specified language. The perception *p* is modeled by the event(s) *EV*, the context *CXT*, the list of perception-relations *PR-LIST*, and the list *ST-LIST* of pertinent statements, all considered in conjunction; formally, I write  $p = (EV, CXT, PR-LIST, ST-LIST)$ .

According to this theory a given *Event*, as something to which one can point on a musical score or in an acoustic signal, may very well participate in a number of *distinct perceptual objects* *p*<sub>1</sub>, *p*<sub>2</sub>, *p*<sub>3</sub>, . . . , depending on the ways in which the *Event* accrues about it a variety of *Contexts*, *Perception-Relations*, and *Statements* in such a way as to satisfy the formal model. Should the different perceptions *p*<sub>1</sub> and *p*<sub>2</sub> assign different harmonic functions to the given *Event*, the theory argues that it is improper to argue a priori that one must "choose" between the perceptions because "the harmony of the *Event*" cannot be both this and that "at the same time." First of all, there is no such thing as "the harmony of the *Event*," marking *one* phenomenological object. Rather, there are *two* phenomenological objects under consideration, *p*<sub>1</sub> and *p*<sub>2</sub>; in that connection we can properly speak of "the harmonic function assigned to the *Event* in *p*<sub>1</sub>," and "the harmonic function assigned to the *Event* in *p*<sub>2</sub>." Furthermore, we should not say of *p*<sub>1</sub> and *p*<sub>2</sub> that they are intended by a listener "at the same time." Formally, these different objects occupy different locations in phenomenological space-time. Less abstractly the two perceptions, probably involving different *Contexts* in this situation, may



very possibly impinge upon a listener at *different* "times" during the Newtonian time-flow of a pertinent acoustic signal. These matters, I argue, underlie familiar discomforts we sometimes feel in traditionally conceived musical analyses, when we confront an apparent choice as to whether "the harmony" of a given Event "is" this or that: we erroneously constrain our conceptual apparatus by stipulating one phenomenological object at one moment at one present-tense temporal location, when we sometimes actually sense several objects at several locations in phenomenological space-time.

In writing the foregoing study of Schoenberg's chord, I tried to frame my discourse so as to conform to the theoretical ideas just outlined, so far as I felt able to do so without dragging along a load of cumbersome verbal baggage. That was, for example, the sense of my remark on page 4 above, when I wrote: "The function I shall propose [for the chord] is actually a network of functions in a variety of contexts." That was also the sense of the word "*somewhat*" when I wrote (on page 22) that "The total effect of the chord may . . . be somewhat understood in the sense of figure 8c." The figure is useful because it suggests a number of Contexts for the chord which are very active during measures 38-50 in a number of perceptual structures. Still, the figure only suggests *some* of those structures, and it does not fully engage their Contexts, their interRelationships, and the sorts of Statements which the text commentary has to make about them. If I were to set down a really formal treatment of the chord in the sense of my model, I should have to spell out more formally all the relevant perception-structures I tried to suggest informally by my text, specifying more explicitly the various contexts, perceptual interrelationships, and perceptual statements involved. The result would have read something like the analysis of measure 12 from Schubert's *Morgengruß*, in the phenomenological paper of note 16.

The interested reader can consult that analysis and work the discourse of my Schoenberg study into its form without too much trouble; I shall start the process off shortly. It is the uninterested reader who concerns me: I do not want to give the impression that I consider my own theoretical ideas to be the subject of this study, rather than Schoenberg's art. That is why I have saved these theoretical remarks for an appendix here; I only produce them now because several people who read the study in draft felt that some such theoretical background would be helpful.

The theory can specifically help in rendering organized and consistent a variety of observations I have made about Schoenberg's chord as Event, observations which might otherwise appear sporadic and mutually contradictory. For example, figure 6a can be read as a symbolic Statement within a perception-structure p6a; in this structure, which addresses the

Context of measures 41-42, the Event of our chord is chronicled as a "chromatic passing harmony." p6a hears the last chord of measure 42 as II of V in d minor, or II in a minor. These aspects of p6a are in a relation of denial to a perception p4c, a perception for which figure 4c is a symbolic Statement. p4c addresses the first chord of measure 42 in a Context comprising the chord itself, plus the two preceding chords within measure 41, plus a protensively constructed ("expected") continuation symbolized by the fourth harmony of figure 4c. In order to assert the rationality of the protensive continuation, p4c must assert itself in special Perception-Relations to other perceptions p4a and p4b, about which figures 4a and 4b are respective symbolic Statements. p4a in turn must assert itself in a Perception-Relation to a perception generated in the Context of measure 41 plus an "expected" d minor chord; we might call the latter perception "d minor cadence coming up." p4c asserts itself in Relation to p4b as a chromatic variant; p4c asserts itself in Relation to p4a as a tonicization of the b flat deceptive-cadential harmony. Among the Statements adhering to p4c is the remark: "What about the a flat in our chord?" Such a Statement, NB, does not adhere to perception p6a, which hears the a flat as chromatic-passing along with the other notes of the chord in which it appears.

The Statement about the a flat, however, *does* adhere to perceptions p5a, p5b, and p5c, corresponding to figures 5a, 5b, and 5c respectively, even though the acoustic Context for those perceptions, measures 41-43, does not close until well after the acoustic Context for p6a. p5a and p5b enjoy relations of "confirmation" with p4a and p4b respectively; p5b involves an additional Statement to the effect that "the tonicized b flat harmony becomes a pivot for the modulation." p5b, in confirming p4b, denies p6a. p5c denies p6a even farther by analyzing the last chord of measure 42 as VII of c major, asserting a tonicization of V in f: p6a, we recall, analyzes the same Event as II of a minor, tonicizing V in d by inflecting V/V.

The value of the theoretical model is especially clear as regards the last chord of measure 42: we reify different objects p6a and p5c, objects that occupy different portions of phenomenological space-time and that impinge upon a listener at different moments during the processing of the acoustic signal; thereby we avoid having to assert that the last chord of measure 42 "is" a II-of-a, tonicizing V-of-d, and "is" also a VII-of-c, tonicizing V-of-f, "at the same time." We further can avoid having to vote for one or the other interpretation of "the" chord as if it were a single phenomenon-in-itself. At first our methodological benefit might not seem to be very hefty here; we might be tempted to dismiss p6a as of small aesthetic significance compared to p5c, despite Schönberg's own construction

of figure 2a. However, as we come to formulate perceptions to which figures 6d, 6e, 7, and 10 pertain as symbolic SStatements, we shall want to rehabilitate p6a, if only posthumously, in Relations to the later p-structures. The notion of tonicizing V in d, suggested by p6a, gains enormous weight as we extend ConteXTs outward before and after measures 41-42, specifically coming to sense the roles played by the dagger harmony and the dagger progression as mental constructs. (The inference of figure 6c from figures 6a and 6b is not very convincing in my analysis; figure 6c should probably be inferred "retroactively" from figures 6d, 6e, and 7b as well.)

The value of the theoretical model is also strong as regards the varying harmonic weight sensed on Schoenberg's "ninth-chord", when the chord is perceived in different p-structures. In the particular p-structures about which figures 4 and 5 make SStatements, the bass b flat of the chord takes the weight of a cadence; the following b natural in the bass is not an object of these perceptions at all until figure 5c, where b natural is perceived in transit from the already-established b flat. In contrast, the p-structures pertaining to figures 6 and 7 all make the bass b flat subordinate to the b natural which follows. The essential harmony following measure 41 in these perceptions is the dagger harmony, a diminished seventh chord over the bass b natural; b flat in the bass is perceived in transit to the b natural of the dagger harmony, to which a mentally constructed German sixth chord passes. Our p-machinery allows us to entertain both families of perceptions, and to hear all the pertinent aspects of our chord with some precision, relieving us of any nagging anxiety that "the" b flat, in relation to the following b natural, cannot be both essential and passing "at the same time," and that we should perhaps vote for one family of hearings, suppressing the other in the interests of some imagined theoretical consistency. Indeed our p-machinery allows us precisely to integrate conflicts e.g. between p6a and p5c, or between p5c and p6e, into our study of the chord-as-EVent-within-varying-p-structures; when we listen to the music, our appreciation of these conflicts and of other fluctuating p-relationships becomes a central aspect of our rhythmic response to the passage. In that sense, one can say that "the chord", as unifying EVent taken in through varying p-structures that develop to address it, is among other things a *large-scale rhythmic* phenomenon. This notion can be fruitfully brought to a review of figure 10 as a whole; there, we can hear how "the chord" is involved in perceptual filaments that interlock star and dagger progressions, keeping the chaconne turning over. The star progression, as indicated by figure 5d, is part of the "weighty b flat" complex of perceptions.

Besides helping us out in such technical affairs, the p-model helps us maintain a decent critical stance before Schoenberg's own pronounce-

ments. We have already noted how it is worth our while to take seriously his context of figure 2a. It will not hurt us, either, to expend some thinking and listening once more upon his perception of the "ninth chord in fourth inversion," as constructed in a d flat major context. To be sure, the idea of d flat major seems bizarre in the environs of measures 41-42, or measures 38-49. It is quite possible to *dissent* from Schoenberg's asserted perception here. That is, presented with his perception p, one may well respond, "I myself do not entertain perception p." However, there is no way to argue the *abstract non-validity* of his perception, provided only that it is in some sense sense well-formed—which in this case it is. (The article of note 16 goes into such matters at some length.) Presented with Schoenberg's assertion, "I am perceiving p," one cannot sensibly argue, "No, you're not." Nor is it much to the point to argue, "Well, you shouldn't be." Instead it makes good sense, given the situation, to ask oneself: "What is Schoenberg hearing that I am not?" The p-machinery makes it comfortable to explore this question without the necessity of hostile confrontation: what I am sure I hear will not be invalidated by what Schoenberg hears; conversely, I need not presume to declare Schoenberg's hearing invalid in order to assert my own. More specifically, the p-machinery can move the locus of such tensions inside the music-perceptual process itself, as various p-formations come to deny and to support one another over a variety of more or less local and global ConteXTs. I then still have the option of ignoring (dissenting from) Schoenberg's proposed p-structure in my own critical investigations; but I also have the option of entertaining it along with the rest of what I hear.

In fact, I do not (yet) clearly hear Schoenberg's p-structure involving the first chord of measure 42 with a mentally constructed d flat six-four chord. But I do believe that the composer had more in his mind, and his ear, than a formal harmonic exercise premised on immersing the abstract set (b flat, a flat, g flat, c, e flat) in an abstract ConteXT of fundamental bass theory. I believe specifically that he was hearing something from Swift's b flat minor and/or f minor regions within his own composition, and I look forward to discovering some day a whole new family of perceptions involving the chord from measure 42 in those relationships. Some recent personal communications from Fred Lerdahl encourage me in that expectation. ■

#### Notes

1. Arnold Schoenberg, *Theory of Harmony*, trans. Roy E. Carter (Berkeley and Los Angeles: University of California Press, 1978), 346.
2. Ibid.

3. Ibid.
4. Ibid.
5. Ibid., 309-331.
6. Richard Swift, "1/XII/99: Tonal Relations in Schoenberg's *Verklärte Nacht*," *19th Century Music* 1,1 (Summer 1977), 3-14
7. To my knowledge, Schoenberg himself never admitted the theoretical possibility of an "added sixth" chord, so far as root function was concerned. He did, of course, take these sorts of voice-leading possibilities into account as a historical-genetic basis for "freer treatment" of dissonance in a "seventh-chord" (*Harmony*, 137-140).
8. This feature of the passage exemplifies Roger Sessions's advice on constructing modulatory harmonic progressions: "The principle . . . lies in conceiving both of the outer voices in . . . the key of destination from the outset of the modulation, including the point of departure in the first key." *Harmonic Practice* (New York: Harcourt, Brace and Company, 1951), 271.
9. Measure 41 is syncopated off the written strong beats; measure 45 is not. The way in which the syncopation works itself off, during measures 41-45, is an integral feature of the phrase. Unfortunately there is not space to do justice to its analysis in the present article.
10. The a flat belongs to other contexts discussed before, contexts in which the music "modulates to f major/minor" at measure 43. It would be revealing for the first 'cellist to experiment in rehearsal with a variety of intonations for the a flat / g sharp in measure 42, and for the one in measure 44. One could change the intonation of either note while it was sounding. The crescendos would abet that tactic, but I myself do not like the idea, though I cannot say just why at the moment.
11. The f sharp (or g flat!?) of the deceptive cadence at measure 46 is yet *another* octave lower. It connects to the low pizzicato f natural in the same register at measure 50. We shall have more to say about measures 46-50 later on.
12. In this connection the reader is most earnestly urged to reread *all* of Schoenberg's remarks on "non-harmonic tones" in *Harmony*, 309-331.
13. Schoenberg's essay "A Self-Analysis" (1948) seems to date his discovery of "developing variation" only from after the composition of *Pelleas*, in connection with the First Quartet. However "My Evolution" (1949) refers to developing variation (already) in *Verklärte Nacht*. The citations appear in *Style and Idea* (New York: St Martins Press, 1975), 76-79, 80.
14. "My Evolution," 77-78.
15. Raphael Eric Atlas, *The Diachronic Recognition of Enharmonic Equivalence: A Theory and its Application to Five Instrumental Movements by W. A. Mozart* (New Haven, Yale University Ph.D. dissertation, 1983).
16. David Lewin, "Music Theory, Phenomenology, and Modes of Perception," *Music Perception* 3.4 (Summer 1986), 327-92.

## From the Archives: The Felix Greissle Collection

R. WAYNE SHOAF, ARCHIVIST

**I**n the Fall of 1986, Jacqueline Greissle-Lowen, the widow of Felix Greissle, made a generous gift of a large portion of Greissle's legacy to the Archive of the Arnold Schoenberg Institute. This donation consists of more than 500 items which includes correspondence, music, books, photographs, recordings, manuscripts for a book on Schoenberg, programs, and various ephemeral material. This collection helps to bring into clearer focus the relationship between Schoenberg and Greissle in his roles as student, performer, copyist, transcriber, son-in-law, and finally compatriot, as well as music publisher.<sup>1</sup>

In a series of BBC interviews recorded in 1965, Hans Keller interviewed Felix Greissle who recounted an early experience with Schoenberg:

After his first wife died, and when he felt very lonely, my wife and I offered him to live with him. Which we did for a couple of months, you see. And he was very, very difficult. We used to have fights almost every day about really minor matters, you see. So that one day it was impossible to live further with him. We packed and moved out into our apartment which we still had, you see, with a child which was about a year and a half or two and Schoenberg loved very much (by the way, a boy). And we moved out and it was [inaudible] we didn't talk to him. Nothing. We left. We said good-bye and he nodded, feeling his eyes. And it was sometime on a mild Spring day.

The same day, at night, at nine o'clock, I lived on the second floor close to the street, somebody threw pebbles on my window. I opened the window and down there was Schoenberg. And he said very meekly, "May I come up?" So I said, "Oh, please do come up, by all means!" And he came up. He apologized and he said, "I am sorry. Of course, you're absolutely right, you cannot live with me. That's impossible. I am impossible, and the whole situation is impossible. But, of course, we can come to see each other, you see, I am over the worst." After his wife died . . . and a very nice and a wonderful man.<sup>2</sup>

1. For a fuller description of Greissle's career see *Journal of the Arnold Schoenberg Institute* IV/1 (June 1982): 4-7.

2. Unedited tape transcription.