

## Music Theory, Phenomenology, and Modes of Perception

DAVID LEWIN  
*Harvard University*

Recent years have seen an increasing influence on music theory of perceptual investigations that can be called phenomenological in the sense of Husserl, either explicitly or implicitly. The trend is problematic, particularly in what one might call its sociology, but it is also very promising. Potential or at least metaphorical links with Artificial Intelligence are especially suggestive. A formal model for "musical perceptions," incorporating some of the promising features, reveals interesting things in connection with Schubert's song *Morgengruß*. The model helps to circumvent some traditional difficulties in the methodology of music analysis. But the model must be used with caution since, like other perceptual theories, it appears to make "listening" a paradigmatic musical activity. Composer/performer/playwright/actor/director/poet can be contrasted here to listener/reader. The two genera can be compared in the usual ways, but also in some not-so-usual ways. The former genus may be held to be perceiving *in* the creative act, and some influential contemporary literary theories actually prefer members of this genus to those of the other *as* perceivers. The theories can be modified, I believe, to allow a more universal stance that also regards acts of analytic reading/listening as poetry.

### Part I: Phenomenological Preface

Overtly phenomenological study of music in Husserl's sense begins with the man himself, who made central to his theories of perception a famous analysis for perceiving a sustained tone (Husserl, 1964, p. 43). That analysis is highlighted by Izchak Miller in a recent philosophical commentary which the interested reader will find especially clear (Miller, 1984). Miller puts the heart of the matter as follows:

... whereas it does seem true that I am hearing that tone throughout a certain interval of time, it does not seem it can be true that I am hearing all of it (or an extended part of it) at any given instant of that interval. Yet... throughout that interval I continuously experience the endurance, or the continuity, of that tone, and this requires (contrary to the

*Music Perception* (ISSN 0730-7829) is published quarterly in Fall, Winter, Spring, and Summer. All matters of an editorial nature should be addressed to Diana Deutsch, Editor, *Music Perception*, Department of Psychology C-009, University of California, San Diego, La Jolla, CA 92093. Address subscription orders, changes of address, and business correspondence (including requests for permissions and advertising inquiries) to Journals Manager, University of California Press, Berkeley, CA 94720. Subscription rates in the U.S.A. are \$30.00 for one year for individuals and \$60.00 for one year for institutions. Subscribers elsewhere should add \$3.00 postage. Payment may be made with UNESCO book coupons. Please allow 4 months for delivery of first issue. Single copies are \$7.50 for individuals and \$15.00 for institutions. Second-class postage paid at Berkeley, California and additional mailing offices. Postmaster: Send address changes to *Music Perception*, University of California Press, Berkeley, CA 94720.

Requests for reprints may be sent to David Lewin, Department of Music, Harvard University, Cambridge, Massachusetts 02138.



previous hypothesis) that I experience at any given instant . . . more than a mere instantaneous phase of the tone. How, then, is an instantaneous perceptual experience of the temporal continuity, or the temporal passage, of a tone possible?

Answering this and other related questions about our temporal awareness is of crucial importance to Husserl for reasons which go beyond the mere desire to provide an adequate, or a complete, account of perception. The subject matter of Husserlian phenomenology is our conscious experience, and Husserl presupposes our ability to reflect on our various experiences and discern their structures. However, our conscious experiences, or—as Husserl calls them—our *acts* of consciousness, are themselves processes, albeit mental processes. How do we, then, succeed in being reflectively aware at any given moment of the continuity, or the passage, of our mental acts? How does one, in other words, succeed in reflecting at any given moment on anything more than the corresponding momentary phase of the act reflected upon?

According to Husserl, the structure of our temporal awareness which makes the continuous perception of the temporal passage of a tone possible is the very same structure which makes a continuous reflection on the temporal passage of our mental acts possible. Account for the possibility of the first is, thus, accounting for the possibility of the second (Miller, 1984, pp. 2–3).

Miller also devotes much attention to “Husserl’s Account of Perceiving a Melody” (Miller, 1984, pp. 118–144). This discussion, which includes an account of listening to the opening theme from Mozart’s Clarinet Concerto, does not itself invoke sophisticated music-theoretical apparatus; still, any theorist interested in Schenker, or Kurth, or Leonard Meyer, or Narmour—or serialism for that matter—is sure to find the commentary, in the context of Miller’s book, resonating with familiar mental/aural experiences.

Among explicitly phenomenological writers who do invoke sophisticated music-theoretical concepts, Judith Lochhead is especially noteworthy. Her dissertation in particular projects an avowedly phenomenological view of Western art music from many periods; it comments very suggestively on temporal issues that have to do with our finding much recent music recalcitrant to received analytic approaches, a problem that she finds phenomenological in nature (Lochhead, 1982).<sup>1</sup>

Thomas Clifton also proclaimed a phenomenological approach to music theory, although of a quite different sort. The title of his recently published

book (Clifton, 1983) reflects his stance.<sup>2</sup> Taylor Greer’s perceptive critique of Clifton’s earlier work does not extend to this book, but Greer is well worth reading for anyone interested in the methodological issues raised by applying phenomenology to music theory (Greer, 1984). The book itself has recently been reviewed concisely and perceptively by Nicholas Cook (1983) and by James Tenney (1985).

Few professional music theorists have proclaimed so explicitly phenomenological a program or approach as have those just mentioned. However, phenomenological thinking is implicitly manifest in the work of others as well. Jonathan Kramer’s temporal studies (e.g., Kramer, 1981) engage such modes of thought.<sup>3</sup> So do Christopher Hasty’s (e.g., Hasty, 1981). So, in a less obvious way, does a recent study of my own (Lewin, 1981). The cited article builds a numerical model which counts, at each “now”-time  $t$ , the number of time-spans I recall from the pertinent recent past that have (had) duration  $d$ .<sup>4</sup> In this way I construct a function  $W(d,t)$  that gives me an “unfolding durational-interval vector” as the “now”-cursor  $t$  advances. The concept underlying my construction engages a Husserlian two-dimensional model of perceptual time, a model that allows both for Husserl’s “primal impressions,” impressions that follow the now-cursor  $t$ , and also for Husserl’s “retentions,” projections of remembered past times (and past durations) into my present consciousness. Later in my article, I even become involved with something much like Husserl’s “protensions,” projections of future expectations into present consciousness.<sup>5</sup> Since writing the article, I have found the idea of an “unfolding rhythmic interval vector” highly suggestive in connection with a great variety of other rhythmic formalisms.<sup>6</sup>

2. Unfortunately, further development of Clifton’s thought was cut short by his untimely death.

3. Kramer is a consulting editor for *Music Theory Spectrum*, volume 7 (1985), an issue devoted entirely to time and rhythm in music. The volume contains much material of relevance to this article. Its editor is Lewis Rowell, who has himself done extensive work on temporality in music. Of phenomenological interest (and of wider interest too) is his article, “The Subconscious Language of Musical Time” (Rowell, 1975). Rowell notes in particular that “the terms for temporality in music . . . denote physical gesture as well as the more abstract thing that is measured by the gesture” (pp. 102–103); his elaboration of this idea ties in suggestively with remarks I shall make much later concerning performance as a mode of perception.

4. For the model, it is perfectly workable to replace the exact number “ $d$ ” by the idea, “more-or-less- $d$ , as distinguishable from other durations I retain in my awareness at time  $t$ ,”

5. Husserl’s terms and pertinent diagrams are explained in Miller (1984), p. 120 and following.

6. That will be manifest in my forthcoming book, *Generalized musical intervals and transformations* (New Haven: Yale University Press, expected 1987).

1. Lochhead worked extensively with the philosopher Don Ihde, who authored an important work on the phenomenology of hearing (Ihde, 1976).



Marvin Minsky—like myself I suppose—is not popularly considered a phenomenologically oriented thinker. And yet the following quotation would find itself very much at home in Husserl's *Time-Consciousness*: "... to really understand how memory and process merge in 'listening' we will simply have to use much more 'procedural' descriptions—that is, the kinds that can describe *how processes proceed*." (Minsky, 1982, p. 6).<sup>7</sup> Minsky makes his statement in connection with a critique of "generative" and 'transformational' methods of syntactic analysis." He means neo-Schenkerian methods. The same species of criticism is voiced by Eugene Narmour when, protesting what he calls the "schemata" and "archetypal patterns" of Schenkerian theory, he writes that "... the true 'genetic' basis in musical process is to be found by discovering what patterns imply in prospect ... in relation to what they realize in retrospect." (Narmour, 1977, p. 40). This sort of discourse jibes well with Husserl's vocabulary: primal impressions are patterns doing Narmour's work of presently-implying-and-realizing; retentions are retrospective contexts brought into present perception; protensions are prospective contexts brought into present perception.

The works of the non-phenomenologists just cited suggest but do not formulate and examine very adequately the idiosyncratically *recursive* aspects of Husserl's perception-structures. By the italicized term I mean to suggest the way in which such structures characteristically involve themselves in loops with other perception-structures that are among their objects or arguments. The other perception-structures are typically in characteristic *relationships* to the given structure (e.g. of retention, protension, implication, realization, denial), and those relationships, as well as other sorts of relations between perceptions, can also enter into recursive configurations as objects or arguments of perception-structures.

Let me illustrate the sort of loop I mean by a simple example using English text. Consider a thing we might call a perception, that is  $p$  = Siegmund's watching Sieglinde's watching Siegmund's watching Sieglinde's watching ... (etc). We can study the infinitely recursive aspect of  $p$  by using a pair of finite perceptions SGM and SGL, defined in a mutually recursive relationship. SGM = Siegmund's watching SGL, and SGL = Sieglinde's watching SGM. The pair SGM and SGL can also generate another infinite perception  $q$ ;  $q$  is Sieglinde's watching Siegmund's watching ... (etc). A computer could generate  $p$  by sending SGM to some evaluation routine (let us call it EVAL); the machine would generate  $q$  by

7. Compare this excerpt from Miller (1984), cited earlier in this article: "... our conscious experiences, or—as Husserl calls them—our *acts of consciousness*, are themselves processes, albeit mental processes. How do we, then, succeed in being reflectively aware at any given moment of the continuity, or the passage, of our mental acts?"

EVALuating SGL. There is of course a small difficulty: in either case, the EVALuation would go on forever, trapped in an infinite loop. I can think of two ways to avoid this difficulty that make sense to me both in their eventual musical implications and in light of the small knowledge I possess of computer science. One would be to have an overriding external call from a more global part of the system interrupt the endless tryst of the sibling lovers. Another would be to have some sort of preliminary higher-level parsing applied to the environment before anything gets sent to the EVALuator. The parser could spot the endless loop; it would then arrange for the eventual EVALuation to be terminated (by a special symbol, jump instruction, or what you will) after a certain number of rides around the loop. This, after all, is what we ourselves do in writing out  $p$ , when we terminate with the special symbols "... and/or (etc.)", or something of the sort, once the loop structure has been made clear to the reader.<sup>8</sup> The two methods of avoiding the infinite loop could be combined, producing EVALuated output like "Siegmund's watching Sieglinde's watching Siegmund's watching ... Sieglinde's suddenly noticing Hunding." (Four Wagner tubas make an excellent external interrupt.)

Having explored the abstract textual example to help the reader get a feeling for the kinds of recursive systems in which I am interested, I shall now examine an abstract musical example (Figure 1).

I shall be especially interested first in musical perceptions as objects of musical perceptions; this corresponds to SGL-as-an-object-of-SGM, or SGM-as-an-object-of-SGL, in the English example. Then I shall be interested in the specifically recursive aspect of certain musical perception struc-

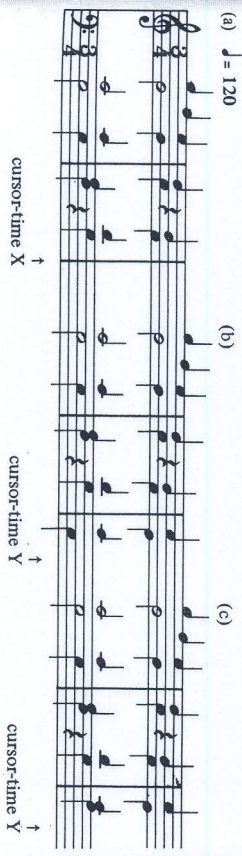


Fig. 1.

8. If the parser applies itself only to a restricted family of formal-strings called "perceptions," and the perceptions do not engage the parsing language itself, then certain technical "Church-Turing" problems should not arise. Computer buffs will know what I mean (although they may not agree). For other readers, one might put the matter this way in intuitive discourse: if parsing is to be applied, then musical perceptions should not form a "language," and/or the parsing itself should be "imperceptible."



tures; this corresponds to the recursive aspect of SGM-and-SGL when considered together as a perception-structure.

Imagine a string ensemble playing the score shown by Figure 1(a), producing an acoustic signal which we shall call Signal(a). We ask, just *what* am I "perceiving" as I listen musically to that signal at the now-time corresponding to cursor-time X on the score? According to Husserl's theory, what I am perceiving—let us call it Perception(a)—is a hugely complex network of things, things including other perceptions, their relations among themselves, and their relations to Perception(a) itself. I have, for example, perceptions (a1), "V7 harmony over the last beat," (a2), "5th degree in the bass over the last beat," and (a3), "7th degree in the melody over the last beat." I perceive how the perceptions (a1), (a2), and (a3) are interrelating among themselves. I perceive how each of them is relating to my overall Perception(a) at cursor-time X. And I am retaining perceptions of how (a1), (a2), and (a3) each relate to yet earlier perceptions. For instance, "5th degree in the bass over the last beat" at cursor-time X involves among its objects retained perceptions of "5th degree in the bass since the attack of the last beat" at *every* perceptually functional moment during the half-second of clock time preceding X; this is Husserl's analysis of the sustained tone. "Dominant-seventh harmony over the last beat" at cursor-time X involves an analogous family of objects; it also has other objects that engage clock-time well behind the G<sup>7</sup> chord itself, time within which other perceptions built musical contexts of the piece that can render significant my mental acts of "perceiving a dominant" and "perceiving a beat" at now-time X. To the extent that "dominant" and "beat" involve acculturated theoretical ideas and language, their contexts here are even partly outside the time of the entire musical performance.

Particularly interesting as an object of Perception(a) is a perception corresponding to the score of Figure 1(b). Let us call this object Perception(b). Perception(a) does not notice Perception(b) in a vacuum; it perceives Perception(b) in *certain relations* to Perception(a), relations that include at least "protension" (if not "implication"). The difference between this view of affairs and the traditional view needs considerable emphasis. In the traditional view, Perception(b) "has not yet happened" at cursor-time X, but we "expect" it, perhaps with a certain probability or entropy value. In the Husserlian view, Perception(b) *does actually happen at cursor-time X*: I perceive *at time X* the structure symbolized by the score of Figure 1(b), and that perception—along with certain of its relationships—is one object of Perception(a) *at cursor-time X*. Among the relationships are protension ("coming up"), mensurated protension ("coming up in one beat's time"), likelihood ("very likely in the pertinent Makoff chain"), and others.

"The C eight-three chord" is *not* an object of my perception at time X, at least not directly. The chord is perceived only indirectly, as an object of Per-

ception(b), which is as yet perceived only as an object of Perception(a). It is not "the C chord" which is "very likely coming up in one beat's time"; rather it is "the confirmation-time for Perception(b)" which is "very likely coming up in one beat's time," as I perceive things at X. Listening at that time to Signal(a), I do not form the idea of a disembodied C major chord coming up over the next beat as a context-free phenomenon; I do have a mental construct of a C major chord coming up over the next beat, but *only* in the context of a broader mental construct that is Perception(b).

We are now in a position to explore what I have called the recursive aspects of musical perception-structure. We can approach our study by inquiring after the objects of Perception(b). Among them we shall find Perception(a) itself, in a particular relationship to (b). Using Narmour's terminology, we could describe the relationship by saying that what-we-perceive in Perception(b) includes Perception(a) in a relation of implication-realized. Here we encounter a branch of the recursion, for it we inquire what we perceive that is implied by (a), we find that it is just Perception(b) in a relation of realization-implied. We can isolate the recursive aspect of the situation by formulating expressions IMP and RLZ in the earlier manner of SGM and SGL: IMP = (a)'s implication of RLZ; RLZ = (b)'s realization of IMP.

For a more general model of perception, though, we shall not want to isolate recursive relationships in this way from their parent perceptions; our primary focus must be on the perceptions themselves as totalities. Here is how the model I shall soon propose will address the recursive loop above: Perceptions (a) and (b) will each be defined by a formal list of a certain sort; in the list for Perception(a), we might place a formal sub-argument consisting of the pair [Perception (b), implication], while in the list for Perception(b) we should then place a formal sub-argument consisting of the pair [Perception(a), realization]. One can imagine the recursive potentialities of the situation to lie within two symbolic computer statements: (DEFINE Perception(a) . . . ((. . . (Perception(b), implication) . . . )); (DEFINE Perception(b) . . . ((. . . (Perception(a), realization) . . . ))).<sup>9</sup> By casting my discourse into symbolic computer language of this sort, I mean to suggest the possible utility of Artificial Intelligence (actor language, frames, et al.) in studying these matters. Thereby I mean specifically to make points of contact with Minsky, and with certain features of Miller's presentation as

9. Within the DEFINE list for Perception(a), the formal term "implication" could be suitably qualified by a formal probability value or entropy value, modeling an intuitive level of expectation or predictability associated with the "implication" of Perception(b), or of something-(b)-like in some well-stipulated sense. Alternatively, one could build refinements like these into a formal definition of "implication."



well.<sup>10</sup> Minsky (1982) devotes a lot of attention to programming strategies. Miller (1984, pp. 93–97) uses at times a formalism involving argument lists that suggests an AI environment. Soon I shall develop my own model in more detail.

Before I get to that, though, let me dwell on something which may have slipped the reader's attention by now: while we have been freely discussing Perception(b) as part of what-(a)-perceives (at cursor-time X), and Perception(a) as part of what-(b)-perceives, nowhere in our discussion have we supposed that our imaginary quartet actually *plays* the score of Figure 1(b), producing an acoustic stimulus we might call Signal(b). The point deserves some exploration.

First let us suppose that the quartet does *not* continue their performance of Figure 1(a) to produce a performance of Figure 1(b); suppose they instead perform Figure 1(c), producing acoustic Signal(c) and triggering an appropriate Perception(c). In this case, all the things we have so far said about Perception(b) and its relations, at now-time X, to Perception(a) remain exactly as we have already said them; the acoustic production of Signal(c) at now-time Y changes nothing of all that. Perception(b) as already discussed continues to “exist,” and it retains in retrospect at time Y all the functions it had at time X. Indeed it acquires a new function as well, in connection with Perception(c); one characteristic thing that (c) “perceives” is precisely *that (b) is not being confirmed* by the event of time Y. We imagine a computer statement: (DEFINE Perception(c) . . . (Perception(b), denial) . . .). In order for (b) to be “denied” by (c) at time Y, (b) must be at hand at that time, in a phenomenological location different from that of (c). One must not think of (b) as “disappearing” and of (c) as “replacing” (b).

Let us consider next the trickier case in which the quartet *does* play Figure 1(b), producing acoustic Signal(b). The tricky thing is to realize that we now have at hand a *new* Perception (b-yes), a new perception that is *different* from our old acquaintance Perception(b). (b), as something (a) expects, defined at cursor-time X, continues to “exist” as in the previous case; now

10. My stance here is not particularly new or original. Points of contact between Husserl's phenomenology and the worlds of Artificial Intelligence are the primary subject, for example, of a recent publication that assembles 15 related essays (Dreyfus & Hall, 1982). The editors' Introduction contains sections headed “Husserl's *Anticipation of Artificial Intelligence*” (pp. 17–19) and “Husserl's (and AI's) *Problems*” (pp. 19–27); the former section characterizes Minsky's frame construct of 1973 as “a new data structure remarkably similar to Husserl's for representing everyday knowledge” (p. 19). Particularly important work in this area has been done by Otto Laske. Laske (1980) develops an AI model that addresses recursive aspects of perception very explicitly and clearly. The article, along with a hefty body of other work by Laske, is also available in the Computer Music Association Report *Music and Mind, An Artificial Intelligence Perspective* (San Francisco: Computer Music Association, 1981).

it additionally becomes at cursor-time Y an object of the new perception (b-yes). We might say that (b-yes) “confirms” (b), in the sense that (c) in the previous case “denied” (b). Symbolically, we could write (DEFINE perception(b-yes) . . . (Perception(b), confirmation) . . .).

## Part II: A General Model

If one were to sequester the notion of “good” continuation as a descriptor . . . in tonal music, one would have to introduce . . . powerful concepts of relation—including those of contradiction, opposition, and paradox—as natural to the process, even necessary to it. (Browne, 1985, p. 6).<sup>11</sup>

To help us entertain the ideas discussed in Part I, and others of their ilk, I propose as a provisional model for “a musical perception” this basic formula:

$$p = (EV, CXT, P-R-LIST, ST-LIST).$$

Here the musical perception  $p$  is defined as a formal list containing four arguments. The argument EV specifies a sonic *event* or family of *events* being “perceived.” The argument CXT specifies a musical *context* in which the perception occurs. The argument P-R-LIST is a list of pairs ( $p_i, r_i$ ); each pair specifies a *perception*  $p_i$  and a *relation*  $r_i$  which  $p$  bears to  $p_i$ . The argument ST-LIST is a list of *statements*  $s_1, \dots, s_k$  made in some stipulated *language* L.

As an example we can construct one formal musical perception pertinent to our intuition of “what we hear” when a quartet plays the last quarter-note of Figure 1(c) to finish a performance of Figure 1(c). For the formal perception, EV is “this thing that happens on the last beat.” CXT is all-of-Figure 1(c), and also a culturally conditioned theoretical component that makes us responsive to categories we call beats, keys, tonics, dominants, et al. The P-R-LIST includes a pair (Perception(b), denial). The ST-LIST might include, in a suitable language L, a statement, “deceptive cadence.”

One might wonder why we need an argument EV at all, in the specific example or in the general model. In the example, we describe EV as “this thing that happens on the last beat.” Now “on the last beat” is a perceptual statement that might very easily be added to our ST-LIST. Generalizing that observation, we can plausibly wonder what words we could possibly use, in

11. I must express very heartfelt gratitude to Fred Lerdahl and Diana Deutsch who, by inviting me to give a lecture about musical perception, started me thinking along the lines of the present paper, and in particular along the lines of the model here proposed. The lecture, “Changing Perceptions over a Passage in Schubert,” was given at the Fourth Workshop on Physical and Neuropsychological Foundations of Music, Ossiach, Austria, in August of 1983.



pointing to an EV, that could not be excised from the phrase "this thing that . . ." and placed among the statements on a ST-LIST. The language L could be expanded as necessary. Clearly we cannot describe EV or CXT, for any specific example, without using *some* language L'; then why not simply meld L and L' into one superlanguage? In that case our first argument EV is only a syntactic dummy, and we could reduce our model to a list of only three arguments: a context CXT, a P-R-LIST of perceptions-cum-relations, and a ST-LIST of statements we are making at the moment, possibly including certain statements that focus our attention on this or that particular "event" in the given ContextX.

I go over this possibility so that the reader will know I have considered it and rejected it, even though I admit its plausibility. I admit too the appeal to Occam's Razor, and yet I would not be comfortable with a model that implicitly denied the existence of any "real event" apart from the various statements about it that could be articulated by various interested parties. The social and political history of the last 50 years certainly contributes to my discomfort, and I freely admit my bourgeois-liberal class bias, my susceptibility to the Will-to-Truth, and all the rest of my predilections in this position. I prefer to believe that the statements we make in connection with a perception are *about* something, which is to say about some *thing*. The thing EV will have at the very least a lexical function, enabling us to mark, collect, and compare a certain ensemble of formal perceptions, that is perceptions-about-EV. The role of EV in my model corresponds in this respect with Miller's analysis of Husserl's "determinable-X." Miller writes that there must be "... a feature . . . of the perceptual act which determines the (purported) object of the act in *abstraction from its (purported) properties*, a feature which provides us with an intentional 'fix' on that (purported) object through a course of experience along which the attribute-meanings of our act may shift and change radically. That feature of the perceptual noematic *Sim* is what Husserl refers to by 'the determinable-X.' It seems that what Husserl has in mind is that the determinable-X of the perceptual act is a 'purely referring' element of meaning, something like a meaning of an indexical, probably (at least part of) the meaning of the word 'this.' " (Miller, 1984, pp. 70-71).<sup>12</sup> I share the urge to suppose such a demonstrable-X, my EV, although I am not persuaded of its logical necessity for perceptual discourse about music.

The necessity for a musical context CXT in such discourse is much clearer. For example, when perceiving the event of the a-minor chord in Figure 1(c), I have one set of impressions perceiving it in its own context, as an isolated harmonic structure, and quite another set of impressions perceiv-

ing it in the context of Figure 1(c) as a whole. In the former context, I could not make statements involving a "deceptive cadence," or a "cadence" of any sort, or indeed a "key" or a "beat." Perceiving the isolated chord might involve further problems, in that I might not be able to *locate* its sound within the pertinent music: there might be more than one such sound in that music.

To illustrate the problem of locatability more thoroughly, let me suppose I have before me, poised and ready, a classical orchestra. I bring down my hand, cueing them in, and they produce a chord, forte and staccato, that lasts about one-third of a second; then they rest for about two-thirds of a second; then I cut them off. This "this," this Event, this determinable-X of the situation, is produced by these instruments on these notes: flutes on Eb6 and Bb5; oboes on G5 and Eb5; clarinets on Eb5 and G4; bassoons on Eb4 and Bb3; horns on Eb4 and G3; trumpets on Eb5 and Eb4; kettledrum on Eb3; first violins on G5, Bb4, Eb4, and G3; second violins on Eb5, Eb4, and G3; violas on Eb4 and G3; cellobass on Eb2 and Eb1. I turn to you and ask, "What was that?" You reply, "It must be the opening of the *Eroica* Symphony." "No," I respond, "it was actually measure 2 of the symphony." "Unfair!" you exclaim. But *why* is it unfair? I had indeed instructed the players to play measure 2 when I cued them; they were in fact all looking at measure 2 in their parts as they played. In any conceivable sense you might imagine, they did play measure 2. Only you did not *perceive* measure 2! Your sense of unfairness arises here precisely because there is a crucial phenomenological sense in which *measure 2 is not a well-formed ContextX*. Measures 1-and-2-together are a well-formed ContextX; you would be able to locate measure 2 in *that* context. Measure 1 by itself, or rather measure 1 preceded by a certain amount of sound typical of "orchestra-not-playing," is also a well-formed musical ContextX. That is why you immediately *perceived* measure 1. According to my model, you were quite correct in that perception; indeed it would have been impossible, in the formal sense of the model, for you to have perceived anything else in the context at hand.

Let us study another example. Suppose I refer to the place in the *Waldstein* Sonata "where it goes like *this*," playing or pointing to Figure 2. Although the event is perfectly well defined as an acoustic stimulus, even as an *auditory* perception, there is no *musical* perception at hand, since you have



Fig. 2.

12. We shall explore just such shifts and changes of attribute-meanings for fixed musical Events, in the Schubert analysis that will occupy Part III of this article.



only the vaguest idea of what I might be referring to, so far as the *music* under discussion is concerned. This is because the EEvent, the thing that “goes like *this*,” has not been located in an adequate Context. Failing such a CXT, you can not have a musical perception, although you have a perfectly clear auditory perception. If I refer to the EEvent of Figure 2 as “the third eighth of measure 2,” I have placed it in an adequate musical Context. Event-and-context are suggested by Figure 3.

If, on the other hand, I refer to the EEvent of Figure 2 as “the sixth eighth-note of the reprise measure,” I have implicitly specified another Context, one that is suggested by Figure 4.

I am claiming, in as radical a sense as you please, that “the sixth eighth of the reprise measure” does NOT sound like Figure 2. It sounds like Figure 4, focused-on-the-pertinent-event, so far as we are talking about musical perception. We are usually so talking when we speak of how a certain *musical* event “sounds.” In contrast, one could say that the acoustic signal delimited by the specific event gives rise to an auditory perception which “sounds” like Figure 2. But that is a very different kind of statement.

The problem of locatability deserves much further study in its own right. Here, I shall indicate only one possible direction such study might take. Suppose that my orchestra is assembled here, and that they have not yet played anything for you. I bring down my hand, cuing them in, and they produce a chord, fortissimo and staccato, that lasts about one-third of a second; then they rest for about two-thirds of a second; then I cut them off. The chord is as follows: flutes on G6 and Bb5; oboes on G4 and Eb5; clarinets on Eb5 and G4; bassoons on Eb4 and Eb3; horns on G4 and Eb4; trumpets on Eb5 and Eb4; kettledrum on Eb3; first violins on G5, Bb4, Eb4, and G3; second violins on G5, Bb4, Eb4, and G3; violas on Eb5, Eb4, and G3; cello-



Fig. 3.

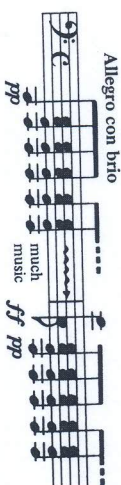


Fig. 4.

bass on Eb3 and Eb2. I turn to you and ask, “What was that?” If you are Beethoven, or a responsible conductor, or a first-flute player, or an alert orchestral ‘cellist, and so on, you *might* answer, “It was the penultimate measure from the first movement of the *Eroica*,” and you would be right. More likely, though, you will answer, “It was the opening of the *Eroica*.” “No,” I respond, “it was actually the penultimate measure of the first movement, measure 690.” “Unfair!” you exclaim. But now the unfairness is of a very different type. For the chord under discussion is locatable, “technically speaking.” You are protesting only because the demands which I am making on your ear, and on your knowledge of the symphony, seem unreasonable to you. You will nevertheless admit that a musician with an excellent ear and a thorough knowledge of the piece could “in theory” locate the chord. You will further admit that a student in an advanced conducting class, or an advanced orchestration class, might reasonably be asked to hear such subtle differences between sounds as are at issue here; you will admit that a student in an advanced analysis class might reasonably be asked to ponder why Beethoven comes so close to the sound of measure 1 in measure 690, but does not reproduce it exactly; you will admit in these connections the propriety, if not the sufficiency, of studying how measure 690 sounds in and of itself. That is, you will admit “in theory,” specifically in the theory I am now expounding, the propriety of measure 690 as a musical-perceptual Context for itself-as-EEvent.

The question remains, however, to what extent the event of that measure should be considered “practically” locatable in its own context. Most of us would agree that the demands I might make on an advanced music student are not to be made of “the listener,” and many of us will also suppose that any phenomenological theory of music, in our present understanding of “phenomenology,” will primarily address “the listener,” a fictive person whose role vis-a-vis the *Eroica* differs from that of the first flutist, cellist, or conductor playing it, or Beethoven composing it. We do suppose that the perceptions of “the listener” have some real and important relation to the things a composer does, and to things a performer does, but we would not want to equate the roles of composer, performer, and listener, at least not in our culture as it is today for better or for worse. The issue of “the listener” in this connection seems crucial to me. I shall return to it at length in Part V of this article.

Meanwhile I should recall that locatability is only *one* of the matters involved when we stipulate a Context for the EEvent(s) of a musical perception. Even when all the events at issue are locatable, what we perceive—the p of our basic formula—depends on the context as well. Thus, to repeat an earlier point, the a-minor chord of Figure 1(c) generates one perception in its own context, and a quite different perception in the context of Figure 1(c) as a whole. In the analysis of a passage from Schubert that occupies



Part III of this paper, we shall have the occasion to study some actual musical EVents whose perceptual significances shift radically as their Contexts expand and/or contract in various musical dimensions.<sup>13</sup>

Now let us return to the Basic Formula,  $p = (EV, CXT, P-R-LIST, ST-LIST)$ , and devote some attention to P-R-LIST. This argument, it will be recalled, is a list of pairs  $(p_i, r_i)$ , each pair specifying a perception  $p_i$  and a relation  $r_i$  which  $p$  bears to  $p_i$ . For example,  $p$  might "deny"  $p_1$ , "confirm"  $p_2$ , "imply"  $p_3$ , "support"  $p_4$ , and "succeed"  $p_5$ ; the P-R-LIST for  $p$  would then include the pairs  $(p_1, \text{denial})$ ,  $(p_2, \text{confirmation})$ ,  $(p_3, \text{implication})$ ,  $(p_4, \text{support})$ , and  $(p_5, \text{succession})$ . These pairs model the idea that we perceive  $p_1$ -being-denied,  $p_2$ -being-confirmed, etc. as essential parts of our perception.

The P-R-LIST enables us to model recursive aspects of perception-structuring; as we saw in earlier discussion, that is a powerful and characteristic feature of the model. Earlier, for example, we could speak of Perception(a) as perceiving Perception(b)-being-implied, while Perception(b) perceived Perception(a)-being-realized. The P-R-LIST for Perception(a) thus contained the pair (Perception(b), implication), while the P-R-LIST for Perception(b) contained the pair (Perception(a), realization).

Eventually it may be necessary to formulate rules that determine when certain recursive P-R configurations are malformed. A few such rules may already appear obvious, but I would urge extreme caution in the matter. After studying Parts III and IV of this paper, the reader will see why I want to proceed so carefully. There we shall see that the geometry and logic of musical perception are not easily inferable from the geometry of Euclid or Descartes and the logic of Zermelo/Fraenkel or Gödel/Bernays.

In any event, we must not declare to be "malformed" loops that are simply infinite, like the implication/realization loop for Perceptions (a) and (b), or the trying loop for Siegmund and Sieglinde. While exploring the Wagnerian loop, we investigated two ways to prevent an EVALuator from getting trapped in the loop; the same expedients are available for the implication/realization loop, and for a large class of similarly structured loops. The first expedient is to apply higher-level parsing to the environment before attempting to EVALuate the perception-strings. The parser would spot the loop and supply the EVALuator with a symbol like "... or '(etc.)' to finish off with, once a certain number of trips around the loop had made the recursive structure clear.

The second expedient is to break off EVALuation upon a trigger signal from an external interrupt, thus: Siegmund's watching Sieglinde's watching

13. The reader who wants to explore the abstract theory of Contexts farther will be interested in an extended study by Raphael Eric Atlas (1983). This work explicitly and systematically investigates the roles of varying musical contexts in building perceptions involving enharmonic relationships of all sorts within tonal compositions.

Siegmund's watching Sieglinde's watching Siegmund's suddenly hearing Hunding. Just like Hunding's tubas, our string quartet's a-minor triad from Figure 1(c) could function as this sort of external interrupt. The a-minor triad as a signal *from outside the listener* could break off the chain of (a)'s implication of (b)'s realization of (a)'s implication of (b)'s realization of (a)'s implication denied by (c). If the quartet were to play Signal(b) instead of Signal(c), the C-major eight-three chord could have a similar interrupt-function, stopping EVALuation of the (a)/(b) implication/realization loop and introducing the new Perception(b)-yes. We might then perceive (a)'s implication of (b)'s realization of (a)'s implication of (b)'s realization being confirmed by (b)-yes. The interrupt function for the a-minor five-three chord of Signal(c), or for the C-major eight-three chord of Signal(b), is an attractive theoretical conceit. The harmonic sonorities as interrupts from acoustic signals external to perception-EVALuation have a *different species of function* from any they might carry as arguments or subarguments within formal p-structures.

The species of function is different because the mechanism of the external interrupt necessarily presupposes, as an implicit feature of its model, an aspect of musical time that is not a mental construction of the listener; some temporal exigencies impinge upon the listener *from without*. Personally, I like the metaphor of that model very much. The alternate expedient for keeping the EVALuator out of infinite loops, the preliminary parser, does not necessarily presuppose any musical time external to the mind of the listener; the parser, along with the EVALuator et al., is metaphorically part of the apparatus through which a listener can build purely mental categories of space and time for the music perceived.

We return once more to the Basic Formula,  $p = (EV, CXT, P-R-LIST, ST-LIST)$ , and focus now upon ST-LIST, the list of statements  $s_1, s_2, \dots, s_k$  made in some stipulated language L. Describing the ensemble of statements as a "list" is only a formatting convention here; the statements might, for example, be abstracted to represent an annotated two-dimensional graph. More generally, the language L might be a composite of several graphic and notational systems with a symbolic textual discourse, and also with a vernacular discourse like everyday English. The language might involve instead or as well poetic sayings or writings; it might involve Freudian free-associations. It might involve gestural "statements" from other communicative systems not usually brought under the rubric of "language," gestures like writing down original compositional material, or performing musical passages. In Part V, I shall devote quite a bit of attention to the notion of composing and performing as means for making perception-statements; I shall move or less withhold that attention until then.

Imagining our utterances or gestures formatted as a "list" is a programming convenience, as I said before; it is not of-the-essence for our model.



More of-the-essence, and more contentious, is the idea that a perception—as modeled by the basic formula—*necessarily* involves utterances or gestures of *some kind*. With this feature of the model I am asserting inter alia that formal musical perceptions are what are sometimes called “apperceptions,” since each one embodies “the process of understanding by which newly observed qualities of an object are related to past experience.”<sup>14</sup> The model goes even farther in asserting a specifically *linguistic* component, in a broad sense, for the way in which past experience is actively brought to bear on observation. Our sense of the past, in making perception-statements, is thereby necessarily involved with socio-cultural forces that shaped the language L, and our acquisition of that language. In particular, to the extent that the language L involves the context CXT for perception p as having a *theoretical* component, along with whatever psychoacoustic component it may possess. To illustrate the point, let us consider the acoustic signal produced by a piano playing the score in Figure 5(a).

Calling that signal “Signal 5,” let us talk about what we might perceive upon hearing its last chord. One listener, hearing that even in that context, may say, “I hear a fourth-degree harmony.” This statement, an element of a ST-LIST for a pertinent p, implicitly invokes a theoretical context in which the bass F is *four steps up a C major scale* from the C below it. The theoretical context can be symbolized in the manner of Figure 5(b). The “music” of Figure 5(b) is not projected by Signal 5, yet it is just as much a part of the CXT for the perception under examination; it allows the listener to hear “degrees” and to hear the F in the bass as the “fourth” one. Figure 5(b) carries a long historical/cultural shadow involving the tetrachordal analysis of the major scale, the Rule of the Octave, and other esoterica of which the listener may well be “unaware.”

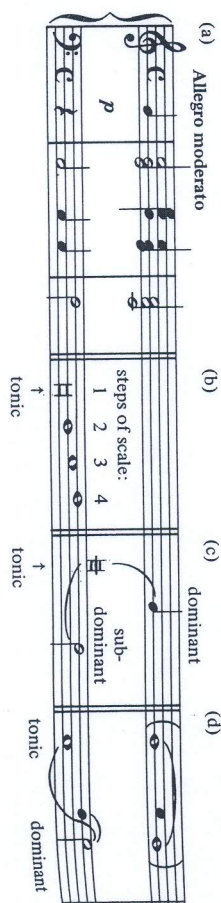


Fig. 5.

14. This is one of the meanings for “apperception” given in *The American Heritage Dictionary of the English Language* (New York: American Heritage Publishing Co., Inc., 1969), p. 63.

Another listener may want to hear the same chord in the same acoustic context as a “subdominant.” To use that term on a statement-list for a suitable formal p, this listener will invoke a *different* theoretical component as part of the CXT; Figure 5(c) would serve the purpose. In that example, the bass F of the EVent in question is displayed lying the interval-of-a-dominant *below* its theoretical tonic C, a middle C which has “already” generated the G that lies the interval-of-a-dominant above it. This is what the term “subdominant” means, when used properly. It casts a long historical shadow involving Continental harmonic theories of the eighteenth and nineteenth centuries, along with their sociocultural contexts. The theoretical tonic of Figure 5(c) is middle C, not viola C as in Figure 5(b). The listener who invokes the “subdominant” context of Figure 5(c) will probably also invoke another theoretical context, an “octave equivalence” context that relates the middle C of Figure 5(c) in some special way to the C an octave lower, the viola C that figures in the acoustic bass of Signal 5 itself. Indeed, Figure 5(c) itself already presupposes a context of octave equivalence, since it assumes that the interval-of-a-dominant corresponds to the harmonic ratio 2:3; that interval is an octave smaller than the theoretically “correct” harmonic interval given by the ratio 1:3; a ratio of unity-to-aliquot-part or fundamental-frequency-to-partial-frequency. The historical shadow of octave-equivalence in this sort of context includes important speculative work by Descartes, Rameau, and D’Alembert.

A third listener might perceive the final event of Signal 5 as a “dominant preparation,” thereby invoking the theoretical Context of Figure 5(d), with its Schenkerian shadows. The G in the bass of Figure 5(d) may or may not eventuate in the acoustic continuation from Signal 5; that is irrelevant, since the G in the *theoretical* context is *already* part of “what is perceived” at the end of Signal 5 by the listener who hears a “dominant preparation.” As a linguistic resource, the theoretical G of Figure 5(d) has no more and no less to do with acoustic signals than does the middle C of Figure 5(c), or the D of Figure 5(b); those are equally linguistic resources, enabling our other listeners to make other kinds of perception-ST statements in other theoretical languages.

### Part III: A Passage from Schubert

To illustrate what the model of Part II can bring out in analysis, I shall discuss some aspects of Schubert’s song *Morgengruß* that are characteristically addressed by that model. Figure 6 transcribes aspects of the strophe, and gives the concomitant text for the first stanza. I shall assume that the



Gu - ten Mor - gen, schö - ne Mit - te - rin! Wo steckst du gleich das Köpf - chen hin, als  
 (bass sounds Bab)

war' dir was ge - sche - hen?

Ver - dreisst dich denn mein Gruss so schwer? Ver -

stört dich denn mein Blick so sehr? so muss ich wie - der ge - hen, (usw)

Fig. 6.

reader knows the piece well enough not to need more reminder of the complete music and text.<sup>15</sup>

Figure 7 tabulates aspects of the formal perceptions I propose to discuss. The perceptions are listed as  $p_1$  through  $p_9$  in the left-hand column of the figure. Each perception, following the model, involves a family of EVs, a CONTEXT for that family, a Perception-Relation-LIST, and a STATEMENT-LIST. EVs are located by entries in the second column of the figure; CONTEXTs are located by entries in the third column. "Tonal theory" in some

15. The impetus for my discussion comes from a long unpublished essay I wrote on this piece, and on the methodology of analysis, in 1974. Fred Lerdahl and Ray Jackendoff (1983) generously credit the essay during their interesting analysis of the strophe in *A Generative Theory of Tonal Music* (pp. 264–269). Their analysis illustrates excellently the resources and powers of their theory. Since it uses extensively a different language L from mine, it "perceives" things differently; otherwise I do not sense any major incompatibilities between their readings and mine. Their methodological approach to ambiguous readings definitely does differ from mine, both as expressed in the unpublished essay and as I shall develop it over Parts III and IV of this paper.

The 1974 essay devoted a good deal of attention to the four-strophe form of the song. Thereby it found a large-scale sense of balance about the temporal extents of tonic and dominant in the song, a balance that resolves on a very high rhythmic level some of the discomfort Lerdahl and Jackendoff feel about those extents in the context of the strophe-once-around. I too feel that discomfort in that context. The discussion in Part III here will not engage any context as extensive as even one strophe.

p	EV	CXT	Selected P-R Pairs	Selected Statements
$p_1$	m12	m12		Fig. 8.1
$p_2$	m12	m9–12	( $p_1$ , terminal inclusion) ( $V$ -percept, questioning)	Fig. 8.2
$p_{2a}$	m12–13	m12–13	( $p_1$ , incipital inclusion) ( $p_4$ , implication)	Fig. 8.3
$p_{2b}$	m12–13	m9–13	( $p_2$ , denial) ( $p_{3a}$ , reinforcement)	Fig. 8.3
$p_4$	m12–13	m12–13 plus expected m14	( $p_{3a}$ , realization) (earlier d tonicization, elaboration)	Fig. 8.4
$p_5$	m9–13	m9–13 plus expected continuation	( $p_4$ , medial inclusion), ( $p_4$ , reinforcement) ( $p_{3b}$ , reinforcement), ( $p_2$ , virtual annihilation)	Fig. 8.5
$p_{6a}$	m14	m12–14	( $p_4$ , confirmation and elaboration) ( $p_{6b}$ , implication)	Fig. 8.6
$p_{6b}$	m14	m12–14 plus expected m15 (in d minor)	( $p_{6a}$ , realization), ( $p_{7a}$ , modification)	As in the commentary
$p_{7a}$	m14	m12–14 plus expected m15 (seq.)	( $p_{6b}$ , modification), ( $p_{3a}$ , sequential expansion)	Fig. 8.7
$p_{7b}$	m14–15	m12–15	( $p_{7a}$ , confirmation), ( $p_{6b}$ , denial) ( $p_3$ , confirmation (via $p_{6a}$ ))	As in the commentary
$p_8$	m14–15	m9–15	(Ab–G in bass of m9, expanded recapitulation), ( $p_9$ , support)	Fig. 8.8
$p_9$	m9–15	m9–15 plus expected m16	( $p_2$ , confirmation), ( $p_{3b}$ , denial) ( $p_{8a}$ , support), ( $p_5$ , qualification)	Fig. 8.9

Fig. 7.

heuristic sense is understood as a component of each CONTEXT. Selected pairs from the P-R-LISTS are entered in the fourth column of the figure, and selected STATEMENTS from the ST-LISTS are entered in the fifth column, by reference to graphic examples that will presently be forthcoming.

The perception  $p_1$  in Figure 7, for example, addresses the EVs of measure 12 in the CONTEXT of measure 12 (and tonal theory). So, in the row of Figure 7 headed by " $p_1$ " on the left, "m.12" is entered in the second column, the column of EVs, and "m.12" is also entered in the third column, the column of CONTEXTs. Nothing is entered in the fourth column, the column of salient P-R pairs for  $p_1$ . This inferentially asserts that it is not crucial to hear  $p_1$  in relation to other perceptions hereabouts, in order to



perceive “what we are hearing when we hear measure 12 in its own context.”

What ST atements can we make about “what we are hearing when we hear measure 12 in its own context,” understanding also a context of tonal theory? Here is one: the measure elaborates  $g^6$  harmony, with a D in the principal upper voice. That statement is entered in the fifth column of Figure 7, the column of salient ST atements about  $P_1$ . To save space, the English sentence is represented on the table by a reference to Figure 8.1, an example which projects the sense of the statement in a compact graphic format.

Figure 8 consists of several musical staves and harmonic analysis diagrams. The top staff shows measures 9-15 with notes and rests. Below it, a compact graphic format shows the statement about measure 12:  $C: V(7)$   $d: iv^6$   $V$   $i$   $i^7$   $i^4$   $i^3$   $b$ . This is followed by a larger staff showing measures 9-15 with notes and rests, and a compact graphic format for the statement about measure 12:  $C: V(7)$   $d: iv^6$   $V$   $i$   $i^7$   $i^4$   $i^3$   $b$ . The bottom staff shows measures 9-15 with notes and rests, and a compact graphic format for the statement about measure 12:  $C: V(7)$   $d: iv^6$   $V$   $i$   $i^7$   $i^4$   $i^3$   $b$ .

Fig. 8.

Parts 8.1, 8.2, and so on of Figure 8 correspond to the perceptions  $P_1$ ,  $P_2$ , and so on of Figure 7. Our exegesis of the first row from Figure 7 is now complete:  $P_1$  perceives measure 12 in its own context and in the context of tonal theory; therein the events elaborate  $g$  minor harmony with  $Bb3$  in the bass and  $D5$  in a principal melodic voice.

We hear quite different and various other things about measure 12 when we hear the events of that measure in a variety of *other*, more extensive, contexts. The whole point of the present exercise is exactly to examine with some precision the *variety* of formal perceptions that are generated by such a variety of formal CXTs for the EVents of measure 12, and for other related families of EVents. It is meaningless—or at the very least thoroughly arbitrary—to invoke  $C$  major and its dominant, or  $d$  minor and its subdominant, when we are talking about perceiving measure 12 in its own context. Whether or not we *wish* to utter perception-statements about measure-12-in-its-own-context is another matter. I do, because I find the formal perception  $P_1$  a useful entry to have at hand for the P-R-LISTS of other, broader, perceptions. To speak roughly in traditional terminology, I find it useful to be able to refer to “the  $g^6$ ,” when I want to, without having to attribute any degree-function or other function in any key to the harmony and its root. A footnote later on will develop the methodological point.

There are other kinds of perception-statements I might make about the events of measure 12. For example, I might remark on the density of attacks in the accompaniment: only one pitch is attacked at a time, and the attacks come one-per-written-eighth-note. But I will probably not remark on those features of measure 12 in the context of measure 12 alone, that is without comparing it to other events, especially immediately-preceding events, in larger contexts. I would certainly not have the sense that the bass of measure 12 lies “in a high register” when I listen to that measure in its own context *only*. (By the italicized word, I intend more precisely a phenomenological context which makes me aware of my own singing voice, a pretty poor bass that comfortably reaches a fourth higher.) The things I am pretending to notice above, about the attack-densities and the register of the bass “in measure 12,” are not features of “measure 12” at all; they are rather matters that involve how what-I-notice-in-measure-12 engages in Perception-Relations with what-I-notice-elsewhere, all wrapped up in broader Contexts. Our model enables me to be precise and formal about these matters.

The perception  $P_2$  in Figure 7, engages one broader Context for the EVents of measure 12, that is the context of measures 9–12. In *that* context, ones attention is drawn to the attack-texture and bass register of the accompaniment in measure 12, and it would be appropriate to utter pertinent statements about those matters on the ST-LIST for  $P_2$ . On the P-R-LIST for  $P_2$ , one might then refer to perceptions involving the accompaniment texture.



tures for measures 9–10, for measure 11, for measures 9–10–11, et al., as those perceptions relate to  $p_2$ . To save space, I have not selected such statements and relations for coverage in the ST and P-R columns of Figure 7.

On that example, the P-R-LIST for  $p_2$  does contain the pair ( $p_1$ , terminal inclusion); this pair perceives the time-span over which  $p_1$  “happens” as a terminal segment within the time-span over which  $p_2$  “happens.” The P-R-LIST for  $p_2$  on the example also contains the pair (V-percept, questioning); this pair notices a perception of “dominant” at hand (in retention) and perceives measure 12 as a challenge to the “dominant,” in the context of measures 9–12. The specific context is crucial; we are not talking about measures 12–13, or measures 12–15, or measures 9–15, and so on. One might ask why the context of measures 9–12, that is the ContextX for  $p_2$ , is well-formed, considering the strong phrase articulation between the second quarter of measure 11 and the pickup to measure 12. That is a good question. To address it in my own hearing, I would point to the persistence of the G root over all four measures, and also to the persistence of the pitch D5 in the principal melodic voice, from the vocal cadence in measure 10 through the entire vocal part of measure 12. In making this response, I refine the pair (V-percept, questioning) to at least three component pairs: (5th-degree-root-percept, prolongation), (D5-melody-percept, prolongation), and (leading-tone-percept, denial). The statements I would make about this state of affairs are covered symbolically by the graphic format of Figure 8.2. On that example, the V root and melodic D5 have prolongational slurs leading into their symbolic representations. The denial of the leading-tone function is depicted by the flat-symbol on the figuration for the harmony. A question mark and exclamation point after the flat symbol express confusion about the denial of leading-tone function in a context that otherwise clearly prolongs “dominant” sensations.

Some critical readers may be saying impatiently, “Why all this fuss about a confusing role for the event of measure 12 in a context that bridges a large phrase articulation very awkwardly? Why go to such trouble to perceive the harmony as a confusing minor-V, when it is so clear as iv-of-ii within its *own* phrase boundary?” The remainder of Part III will satisfy such critics, I hope, making it clear why I want to construct  $p_2$  and assert it as a significant perception here. For the time being, we can note that our model will accommodate very well the hostile reactions of these critics upon being confronted by  $p_2$ . The model analyzes their denial-of- $p_2$  as *itself* something we perceive in the music. We perceive it specifically when we hear measure 12 as the beginning of a new phrase in a context which both continues “normally” and, also, retains our impression of  $p_2$  (so that  $p_2$  is around to be attacked).

Perception  $p_{3a}$  in Figure 7, hears measure 12 “as the beginning of a new phrase . . . which . . . continues ‘normally’,” and Perception  $p_{3b}$  extends

the ContextX for  $p_{3a}$  backwards so as to be able to retain (and attack)  $p_2$ . The pair ( $p_2$ , denial) appears on the P-R-LIST for  $p_{3b}$ . The critics’ denial is  $p_{3b}$ ’s denial.

$p_{3a}$  hears the Events of measures 12–13 in their own ContextX. The musical phrase of measures 12–13 coincides with one complete verse of the text; that is part of the Event and part of the ContextX. The outer voices and the harmony implied by the ContextX are portrayed by the symbolic ST statement of Figure 8.3. In this ContextX, the harmony of measure 12 is iv<sup>6</sup> of d minor, in *this* context (measures 12–13) is not ii-of-C major; there is no hint of C major tonality in the context of the two measures themselves. Figure 8.3 suggests the way in which  $p_{3b}$  denies  $p_2$  by the annotation “not V<sub>6</sub>!”

Beyond Figure 8.3, we will also want to image on the ST statement-LISTS for  $p_{3a}$  and  $p_{3b}$  various other ST statements involving various Perception-Relations on their P-R-LISTS. For instance we might STate, upon hearing measures 12–13 in their own context, “Oh, *now* I hear where that g minor six-chord is going.” That Statement involves inter alia the pair ( $p_1$ , incipital inclusion), a pair on the P-R-LIST of  $p_{3a}$ . The time-span of  $p_{3a}$  continues the time-span of  $p_1$ , the span in which one perceives “that g minor six-chord.” We might also STate, upon hearing measures 12–13 in their own context, “d minor is being tonicized.” This STatement involves a mentally constructed d minor tonic, at measure 14 or thereabouts, upon which the dominant-of-d in measure 13 will discharge. The mental construction is symbolized in Figure 8.4, a sketch which pertains to a perception  $p_4$ , a perception of the tonicization satisfied in pretension. The pair ( $p_4$ , implication) appears on the P-R-LIST for  $p_{3a}$ , and of course the pair ( $p_{3a}$ , realization) appears on the P-R-LIST for  $p_4$ .

Upon listening to measures 12–13 in the context of measures 9–13, we might also STate, “Aha! So the g minor six chord is *not* a confusing minor dominant of C major; it is rather iv-of-ii in a C-major progression that tonicizes ii.” This STatement, the Statement of the Critical Readers, can be imagined on the ST-LIST for  $p_{3b}$ . The pairs ( $p_2$ , denial) and ( $p_{3a}$ , reinforcement) accordingly appear on the P-R-LIST for  $p_{3b}$ .<sup>16</sup> In connection with the Critical Readers, one would put on the ST-LIST of  $p_{3b}$  additional statements, e.g.: “There is a big phrase boundary between measure 11 and the pickup to measure 12.”

Perception  $p_4$  hears the d minor tonic that we expect to continue from the Events of measures 12–13. We discussed earlier the pairs ( $p_4$ , implication) and ( $p_{3a}$ , realization) on the P-R-LISTS for  $p_{3a}$  and  $p_4$  respectively. The re-

16. Figure 8.3 should technically be annotated some more to show how  $p_{3b}$  perceiving C major tonality in its larger context, would analyze the harmony in the key of “C:ii,” rather than in the key of d.



cursive structure is by now familiar. The d minor tonic event in Figure 8.4 appears with diamond-shaped noteheads; this symbolizes its contingency in protension only, so far as the Statement being made is concerned; Figure 8.4 states *inter alia* that the events of measures 12–13 are about to discharge upon a constructed d minor tonic event.

The mentally constructed d minor tonic here interrelates with a d minor harmony we heard earlier. That harmony was tonicized via a fleeting C# in the vocal line of measure 8, the first chromatic note of the song. P<sub>4</sub> thus expands and elaborates upon an earlier perception of tonicized-d. The pair (earlier d tonicization, elaboration) appears on the P-R-LIST for P<sub>4</sub>. It would be more exact to introduce in this connection a new perception P<sub>4a</sub> whose Context includes measure-8-in-retention as well as measures 12–13 and 14-in-protension.

Perception p<sub>5</sub> models our effort to make sense of tonicized-d-minor (p<sub>4</sub>) following directly upon a prolonged dominant-of-C perceived over measures 9–11. We hear that the melodic D5 of measure 13, the D5 which also figures as the diamond-shaped goal of melodic tonicization in Figure 8.4, prolongs the D5 where the voice signed off in measure 10, a D5 introduced and cadenced upon as the fifth of the dominant harmony there. And the other diamond-shaped note of Figure 8.4, the D4 which is the fundamental bass for the tonicization there, can be heard as part of a bass arpeggiation within the dominant harmony. Hearing these things, we expect that the tonicized d minor of p<sub>4</sub> (of Figure 8.4), having arisen in a larger context as an elaboration of dominant harmony, will again return to dominant harmony. The statement made by the preceding sentence is elaborated and symbolically sketched in Figure 8.5, to which reference is made on the ST-LIST for p<sub>5</sub>. The diamond-shaped notes on the example portray contextual elements we construct protensively upon hearing the Events of measures 9–13. A slur extends to the right of the melodic D5 within the ii harmony; that symbol suggests that we mentally prolong the melodic D5 through the protensive dominant-of-C which follows; the slurred D5 thereby resumes its earlier role as fifth-of-a-dominant-harmony.

Figure 8.5 embeds Figure 8.4 within its middle, and the larger progression “makes good sense” of the smaller. Our model reflects these observations by putting the pairs (p<sub>4</sub>,medial inclusion) and (p<sub>4</sub>,reinforcement) on the P-R-LIST for p<sub>5</sub>. That P-R-LIST also contains the pairs (p<sub>3b</sub>,reinforcement) and (p<sub>2</sub>,virtual annihilation). That is to say, p<sub>5</sub> (Figure 8.5) continues and mightily intensifies the denial of p<sub>2</sub> that began with the construction of P<sub>3b</sub>. On Figure 8.5, the bracket, the parentheses, and the filled-in noteheads suggest how the g minor six-chord is *here* perceived as completely *forwards-looking*, inflecting a subsequent (protensive) d minor harmony; in *this* perception, the g minor chord has no direct prolongational relation

to the dominant harmony that precedes it. p<sub>5</sub>, perceiving these things about the g minor six-chord, perceives that p<sub>2</sub>-is-virtually-annihilated.<sup>17</sup>

Perception P<sub>6a</sub> addresses our hearing how the Events of measure 14, in the Context of measures 12–14, confirm and elaborate the earlier perception P<sub>4</sub>. (P<sub>4</sub>, confirmation and elaboration) appears on the P-R-LIST for P<sub>6a</sub>. Figure 8.6 confirms and elaborates Figure 8.4 in three stages labeled (a), (b), and (c). Stage (a) shows the protensive d minor tonic of Figure 8.4 arriving; the inner voices of the mentally constructed triad are filled in. Stage (b) inflects the top voice of stage (a) by a (passing) seventh. Stage (c) inverts the voices of stage (b), leaving the passing seventh in the melody; stage (c) also replaces the A natural in the harmony of stages (a) and (b) by the chromatic variant A flat. The bass, alto, and soprano voices of stage (c) are projected by the actual acoustic signals of measure 14. The persisting diamond-shaped D4 of stage (c) is a mental construct; it represents the discharge of the d minor tonicization upon the harmony of measure 14 as a permissible representative for a d minor root function. The harmony of stage (c) is thus perceived (by perception P<sub>6a</sub><sup>1</sup>) as an inverted and chromatically altered d<sup>7</sup> chord, the d being mentally constructed in the Context of measures 12–14.

Perceiving the C5 of Figure 8.6 as a “passing seventh” within a constructed d harmony in a context of d tonicity, we will construct another perception protensively, a perception which hears the “passing” accomplished. Perception P<sub>6b</sub> puts *ea* together, in this way, with the expectation of Bb4 to come in the melody and G3 to come in the bass, presumably at measure 15. (P<sub>6b</sub>, implication) appears on the P-R-LIST for P<sub>6a</sub>. G3 and Bb4 are specifically implied by P<sub>6a</sub> as follows. The Ab in the acoustic bass of measure 14 is perceived by P<sub>6a</sub> as *dissonant*, a diminished fifth of a d harmony. It should therefore resolve, we expect, to G3 in the bass of measure 15. The C in the melody of acoustic measure 14 is likewise perceived by P<sub>6a</sub> as *dissonant*, a passing seventh. It should therefore resolve, we expect, to Bb4 in the melody of measure 15. We expect Bb<sub>7</sub> rather than B natural, because of the

17. When I refer to “the g minor chord,” I demonstrate the utility of having earlier constructed p<sub>1</sub> to reference such a mental object. P<sub>1</sub>, which is constructed in the Context of measure-12-by-itself, enables me to refer to a “g minor chord” that is neither a “minor dominant of C major” nor a “subdominant of d minor.” Then I can use my language L effectively, to say that p<sub>5</sub> hears the g minor chord as a subdominant of d (= iiC), not as a minor dominant of C. If I substitute “the subdominant of d” for “the g minor chord” in the preceding sentence, I make p<sub>5</sub> hear tautologically in my language L. If I substitute “the minor dominant of C” for “the g minor chord” in the same sentence, I make p<sub>5</sub> hear in a linguistically erroneous fashion.

Classical theories of consonance and/or triadic root-functionality are very relevant to my claim, that I *can* perceive “the g minor chord” in its own context. (It does not require “preparation” and/or “resolution” in any larger context, in order to have a traditional “meaning.”)







tion of  $p_{6a}$  (Figure 8.6). This activity on the part of  $p_{7b}$  is symbolized by the pair ( $p_5$ , confirmation (via  $p_{6a}$ )), which appears on its P-R-LIST.

In confirming both  $p_{7a}$  and  $p_5$ -cum- $p_{6a}$ , the perception  $p_{7b}$  confirms both the f chord in measure 14 of  $p_{7a}$  and the d chord in measure 14 of  $p_5$ -cum- $p_{6a}$ . Our model has no problem in handling this logic, since "the f chord in measure 14 of  $p_{7a}$ " and "the d chord in measure 14 of  $p_{6a}$ " are *different objects* in our model; "the diamond-shaped d-chord in protensive measure 14 of  $p_5$ " is yet another object.  $p_{7b}$  notices that measure 15, in its text and its acoustic signal, does complete the parallelism of measures 14–15 with measures 12–13 according to the protensive model of  $p_{7a}$ ; measure 14 of  $p_{7a}$  is a subdominant of the local tonic that governs measures 14–15, just as measure 12 is a subdominant of the local tonic that governs measures 12–13.  $p_{7b}$  also perceives that the protensive constructions of  $p_5$  (Figure 8.5) do in fact come to pass over measures 12–15, via the mental processing of  $p_{6a}$  (Figure 8.6) that allows the signal of measure 14 to be perceived as a d harmony. There is no logical contradiction in any of this: we are *not* saying that  $p_{7b}$  perceives *one* object as "both an f chord and a d chord at the same time."

Perception  $p_8$  puts the Ab-G in the bass of measures 14–15 into a broad enough context so that the gesture can be heard as an expanded recapitulation of the Ab-G in the bass of measure 9. A P-R pair for  $p_8$  expresses the relationship. Figure 8.8 makes a symbolic Statement about ways in which the two approaches to G-in-the-bass are similar. In the broad context of measures 9–15 we identify both Gs as dominants of C major; Figure 8.8 labels the two dominants.  $p_8$  should thereby be understood to enter into suitable Perception-Relations (not shown in Figure 7) with  $p_5$ .  $p_5$  (Figure 8.5) heard the span of measures 9–15 as an elaboration of dominant harmony in C major, and  $p_8$  (Figure 8.8) now supports the notion, and is supported by it.

Figure 7 does not include our earlier perception of Ab-G in the bass at measure 9. Intuitively, we can notice many accented aspects of the gesture; these intuitions could be reflected by suitable Perception-Relations and Statements if we wanted to work them out formally for our model. We notice, for instance, that the bass line and harmony move in dotted half notes from the voice entrance up to the Ab of measure 9, at which event the notes from the voice entrance start to move in quarters (as does the accompaniment texture). We notice the unusually great acoustic dissonance and the chordal chromaticism in the harmony over the Ab of measure 9, given the context of measures 5–9 (or of measures 1–9). We notice the leap of the bass into the Ab of measure 9, as contrasted with the essentially conjunct motion of the bass during measures 5–8. We notice that the G in the bass of measure 9 is the first large-scale dominant of the strophe (and of the piece); it is the melodic and rhythmic goal of the bass line in the context of measures 5–11. We notice that the vocal F at the barline of measure 9, a tone

prolonged above the Ab-G gesture in the bass there, is the melodic climax of the vocal line in the context of measures 5–9, and of measures 5–11. We notice that this vocal F is dissonant over its essential bass, the G of measure 9. We notice that the vocal F sets a subjunctive verb. If we pursue the matter, we shall notice curious things about the non-resolving pseudo-resolutions of that F in the context of measures 5–11, and curious things about the dramatic irony of the text in that connection, an irony which makes the contrary-to-factness of the subjunctive *itself* contrary to fact: "as if something *were* the matter"—as if *nothing* were the matter!

Such observations, and others like them, enrich the P-R-LIST and ST-LIST of the earlier Ab-G perception that engages the Events of measure 9; thereby  $p_8$  is itself indirectly enriched. And thereby further salient perceptions, pursuant to these matters, could be added to Figure 7. For instance, we shall now certainly notice in the Context of measures 5–15 how the "dominant" Events of measures 9–15 elaborate the subjunctive verb of measure 9 by a series of *questions*: each verse of text that closes during measures 9–15 ends with a question mark. It is possible therewith to hear the high F of the voice in measure 9 essentially still unresolved at measure 15, an understood "questioning" dominant seventh within the large-scale dominant elaboration at hand. This perception is confirmed by the acoustic signal of measures 16–17, where the high vocal F resolves to a high vocal E in a matching rhythmic motive, as the large-scale dominant harmony resolves to a large-scale tonic and the subjunctive double resolves into obligation. To bring out the last-mentioned relationship, Schubert displaces the natural text stresses in setting the rhyming verses 3 and 6 of the poem: he sets "als *wär*" dir (was *geschehen*)" and "so *muß* ich (wieder *gehen*)," not "als *wär*" dir was *geschehen*" and "so *muß* ich wider *gehen*."<sup>19</sup>

19. N.B.: the youth does *not* "go." Rather he repeats and extends "I *must* go," over the remainder of the strophe. Even then he does not go, but remains to sing three more strophes. My unpublished typescript analyzes and interrelates these matters, along with the concomitant E-D-C round between voice and piano, that sets "so *muß* ich wieder *gehen*." In my analysis, the round expands into recurrent large-level descents from the vocal E of m16 etc. in one strophe, through the vocal D of m10–12 in the next strophe, to the vocal C of m17 etc. in that next strophe. The E of m16 in that next-strophe reasserts itself over that C just as the E in the foreground round reasserts itself, in one instrument or the other, over the C in the foreground round. The music for the strophe goes around four times, as does the foreground round-motive within each strophe. The youth can only go when the sense of obligation, the *muß*, has been attached to the act of going, the *gehen*. That happens only when the background E of *muß*, m 16, is linearly connected in the background to the background C of *gehen*, m17. The background connection is not accomplished during measures 16–17 of any one strophe; the background line emerges only as the strophes repeat again and again, going *wieder* through the D of measures 10–12. The more often we pass the E of measure 16, as the strophes go around, the less accent we hear the next time around on the neighboring high F of measure 9; the more structural weight, correspondingly, do we feel on the D of measure 10–12.



Figure 8.8 indicates succinctly how the “dominant” region of the strophe, measures 9–15, is also the “chromatic” region of the strophe; this large-scale dominant is thematically bound up with the chromaticism, as much as it is with contrary-to-fact questioning and the unresolved high F of measure 9. Consequently, perception  $P_8$  supports another perception  $P_9$  that projects a more chromatic interpretation of the large-scale dominant than we have hitherto examined. The pair ( $P_9$ , support) appears on the P-R-LIST for  $P_8$ .

Figure 8.9 sketches a symbolic STatement for  $P_9$ , engaging the Events of measures 9–15 in their own Context along with the Context of the protensive resolution to follow at expected-measure-16. As Figure 8.9 hears things, the harmonic function of “that g minor chord” in measure 12 is not iv-of-ii after all, but rather minor-v—just as  $P_2$  originally thought it was. According to the figure at hand, the B $_b$  in the bass of measure 12 is not a sixth degree of a local tonic d minor, about to resolve as an appoggiatura to the A natural in the bass of measure 13, the fifth degree of that d minor. Rather, the B $_b$  in the bass of measure 12 is a chordal tone, a chromatically altered member of a large-scale G harmony that controls measures 9–15; the A natural in the bass at measure 13 does not resolve the B $_b$  but passes chromatically away from it, in transit to A $_b$ . The flatted notes on Figure 8.9 behave as scale degrees borrowed from c minor: flat-6 at measure 14 moves idiomatically to 5, and flat-7 at measure 12 steps down idiomatically to flat-6 at measure 14 (via the non-essential passing event of measure 13).

In Figure 8.9, a slur binds the motive G-B $_b$ -A $_b$ -G. This is the minor version of the “Müllerin” motive from the voice in measure 6. In the foreground, the music moves from tonic harmony at the vocal entrance (measure 5) to dominant harmony (measure 6); the foreground dominant is then prolonged by the Müllerin motive. Just so, the music moves on a larger scale from tonic harmony at the beginning of each strophe to the big dominant harmony at measure 9;  $P_9$  then hears that big dominant prolonged by the (minor) Müllerin motive as depicted under the slur of Figure 8.9.

The pair ( $P_2$ , confirmation) is a characteristic member of the P-R-LIST for  $P_9$ : what- $P_9$ -perceives includes the perception that  $P_2$  does (did) in fact make sense, even though it was (is) “denied” by  $P_3b$  and “virtually annihilated” by  $P_5$ . We do not have to have recourse to “posthumous rehabilitation” here.  $P_2$  is not necessarily “really” dead, just because  $P_3b$  and  $P_5$  honestly perceived it as dying and dead. We are now somewhere else, perceiving something else along with  $P_9$ . To put the matter more elegantly:  $P_2$ ,  $P_3b$ ,  $P_5$ , and  $P_9$  are not all cohabiting the same phenomenological place at the same phenomenological time. They are different objects (or acts) in different parts of phenomenological space-time, exercising a variety of interrelationships as reflected in our model by a variety of P-R pairs. I shall discuss the methodological point at greater length during Part IV. Meanwhile we can

note that  $P_9$ , in confirming  $P_2$ , denies  $P_3b$ . The pair ( $P_3b$ , denial) appears on the P-R-LIST for  $P_9$ .  $P_3b$ , it will be recalled, denied (denies)  $P_2$  by STating: “Aha! That g minor chord is *not* a confusing dominant of C; it is rather iv-of-ii in a progression tonicizing ii.”  $P_3b$  utters this while listening to the Events of measures 12–13 in the Context of measures 9–13.  $P_9$  in turn denies  $P_3b$  by STating: “Doch, doch! The g minor chord *is*, after all, a minor dominant of C, a questioning, doubting, chromatic, blue dominant arpeggiating the G root which set in at measure 9.”  $P_9$  utters *this* while listening to the Events of measures 9–15 in their own Context, anticipating also a protensive measure 16. In thus denying a denial,  $P_9$  mirrors neatly the contrary-to-fact contrary-to-fact construction in the text which we examined earlier: “as if something were wrong”—as if nothing were wrong.

The pair ( $P_8$ , support) appears on the P-R-LIST for  $P_9$ ; these two perceptions mutually reinforce each other. The P-R-LIST also contains the pair ( $P_5$ , qualification). The qualification-relationship, to be more useful, should be analyzed into a number of components.  $P_9$  and  $P_5$  reinforce each other in that both perceive measures 9–15 as an elaboration of dominant harmony in C. (Compare Figure 8.9 with Figure 8.5.)  $P_9$  and  $P_5$  disagree, however, as to the manner of the elaboration; their disagreement is reflected in the differing symbols that appear in Figures 8.9 and 8.5 around measures 12–14, symbols which have been amply discussed already. The reader may wish to review in this connection our earlier exposition of how  $P_5$  “virtually annihilated”  $P_2$ .  $P_9$  takes a longer view than  $P_5$ , but that does not mean that  $P_5$  “did not happen” or “was wrong,” any more than  $P_2$  “did not happen” or “was wrong” when  $P_5$  took a longer view and virtually annihilated it. The urge to deny or otherwise bad-mouth some of ones own “inconvenient” perceptual experiences in this sort of situation will be discussed during Part IV.

#### Part IV: Methodology

We have already started to note and discuss the ways in which our model enables us to bypass certain false dichotomies in analytic discourse, dichotomies that arise when we implicitly but erroneously suppose that we are discussing *one* phenomenon at one location in phenomenological space-time, when in fact we are discussing *many* phenomena at many distinct such locations. We can review the point by inspecting the “political/legal” table shown in Figure 9.

When we contemplate such political/legal dichotomies, whether introspectively or in debate with other analysts, the discomforts we feel are symptoms of a deficiency in traditional analytic discourse. These discomforts arise whenever we make, about a listening experience, any statement of syntactic form, “The X is. . . .” To take a specific case, when we begin



- Democrat/plaintiff  
(bzw Republican and/or defendant)
- (a) The *g* minor harmony of measure 12 in *Morgengruß* is  
v of C major (or c minor).
- (b) The B flat of measure 12 is  
a chordal third of *g*;  
3-of-*g* = 3-of-*f* (c:v) = 7-of-*c*.
- (c) The A in the bass of measure 13 is  
accessory: it passes  
chromatically from B flat (m12) to A flat  
(m14) within a descending c minor scale-  
segment that aims for the G of measure 15.
- (d) The harmony of measure 14 is  
an f minor chord,  
a d minor tonic harmony,  
with seventh and altered fifth, inverted.
- (e) The biggest musical articulation between  
measure 5 and measure 16 is  
at m12, where the second  
phrase of the musical strophe and the second  
half of the text stanza begin after a strong  
phrase-articulation involving a long rest in  
the vocal part.
- at m9, where the chromatic,  
questioning dominant of C is attained, with  
its subjunctive 7th; the event is prolonged in  
all those respects until m16, where the chro-  
maticism and the questions vanish, and the  
vocal high F resolves to vocal high E as V re-  
solves to I.

Fig. 9.

Figure 9(a) by saying, "The harmony of measure 12 is . . .," we are already falsely constraining our musical perceptions by implicitly asserting that there is *one* phenomenological object called "*the* harmony of measure 12," and we are also constraining our perceptions by saying of this object that it "*is*," putting it at *one* location in *one* present-tense system that renders falsely coextensive a number of different times: the historical time in which the piece continues to exist for its listeners and performers, every time in which an acoustic signal projects the score of measure 12, the time during which a listener may be former and processing perception P<sub>1</sub>, ditto perception P<sub>2</sub>, ditto perceptions P<sub>3a</sub> and P<sub>3b</sub>, ditto perception P<sub>4</sub>, or P<sub>5</sub>, or P<sub>8</sub>, or P<sub>9</sub>, and so on, *and* the time in which I am now writing this sentence, *and* the

time in which you are now reading it. Our model makes us nicely sensitive to the differences among what-happens-in-measure-12-as-a-constituent-part-of-P<sub>1</sub>, ditto P<sub>2</sub>, ditto P<sub>3a</sub>, and the rest. These are different formal objects within the model, not one object called "*the* harmony of measure 12." Likewise, our model makes us sensitive to the way in which perception-structures P<sub>i</sub> can occupy different mental and/or clock times. Even when P<sub>i</sub> and P<sub>j</sub> impinge upon us at the same mental or clock time, our model allows them to do so separately; indeed, P<sub>i</sub> might have the pair (P<sub>i</sub>, denial) on its P-R-LIST while P<sub>j</sub> simultaneously had (P<sub>j</sub>, denial) on its P-R-LIST. We discussed earlier how EVALuation of the infinite loop might proceed to termination during this time: a higher-level parser could mentally process the loop prior to EVALuation, arranging for a suitable exit, or else a signal external to mental processing could interrupt and override EVALuation according to some pre-structured configuration of the mental system.<sup>20</sup>

Any phenomenological theory should also make us sensitive to the necessity for conceptually distinguishing among various "occupational" times like those mentioned above: the time in which measure 12 "*is*" as I now think about it while writing this article, the time in which measure 12 "*is*" as you now think about it while reading the article some months later-by-the-clock, the time in which measure 12 "*is*" when a pianist and a vocalist create a pertinent acoustic signal by certain psycho-physical activities, the time in which measure 12 "*is*" when a listener in a recital hall receives that acoustic signal via certain psycho-physical activities, ditto a listener listening to a recording at home—for the first time, the second time, the Nth time, and so on. Each of these occupational contexts builds a different family of mental constructs for perceiving the passage of time, and a phenomenologist will not assume a priori that the time-systems are all functionally isomorphic. Indeed the transformations that map each occupational time system into the others should be presumed quite complex, since they ought to reflect both the autonomy and the interdependence of the various activities.

I have called my false dichotomies political/legal because they force us into the position of voting for a slate of candidates, or of rendering verdicts in adversary judicial proceedings, as we respond to music. I find this not just wrong but fantastically wrong. My own meta-methodology includes these rules for analysis: mistrust anything that tells you not to explore an aural

20. The metaphor of an obligatory interrupt works well in analyzing *Morgengruß*, when we sense the psychological immanence of the structural downbeat at measure 16. The signal tells us "it is time to be moving on" from the chromatic/dominant/questioning inbroglio of measures 9–15, an impasse portrayed nicely in this reading by the femata of measure 15. The downbeat moves us on by its high-level rhythmic position, its tonic harmony, its high vocal E, and its new verb *mufß*.



impression you have once formed; mistrust anything that tells you not to listen any more to music that once gripped you, as soon as you have heard one thing going on (or two things, or three, four, . . . five hundred . . . things). The false dichotomies run head-on against my meta-rules, and I find the phenomenology of the model an attractive way to avoid the dichotomies without abandoning rational discourse.

The dichotomies illustrate well the kinds of snares and pitfalls the mind is wont to lay for the ear, not so much in connection with the formal constraints of this or that theory—these are usually easy to notice—but much more in connection with our unexamined common habits, habits like our sloppiness in using the words “the” and “is.” Another such common habit is our too facile recourse to the Euclidean plane in connection with representational modeling, a recourse often concealed in our taking for granted the useful metaphors of the page and of received notations.

To illustrate the treacherous aspects of our penchant for the Euclidean plane, one need only glance at a score of *Morgengruß*. There one will see within a portion of a Euclidean plane a certain unique notehed at the barline of measure 12 in the left hand of the piano; this notehed appears to reference a unique “point” of the plane, a point with a unique vertical coordinate and a unique horizontal coordinate in the Cartesian representation of the plane. The geometric metaphors contribute enormously to the fallacious idea that there is one unique object called “the B flat of measure 12,” an object which impinges upon us at one unique phenomenological time, the time in which the B flat “is.” Our fallacious sense of one object at a unique spatial location is prompted by the unique vertical coordinate for the B flat notehed-point on the Euclidean/Cartesian score-plane. Our fallacious sense that only one musical time is involved, in only one musical time-system, is prompted by the unique horizontal coordinate for the same notehed-point in the same notational geometry, and by the one-dimensional representation of time in that notation. In the same mode of understanding, a certain creature which we fallaciously imagine as “the harmony of measure 14” is suggested by a certain visual configuration of adjacent points in the plane; this configuration spans and is (essentially) bounded by the vertical lines that frame the representation of “measure 14” as a connected region in Euclidean space. The one-dimensional span which is the projection of that region on the horizontal axis of the Cartesian plane is also connected; it suggests a unique “time” (span) in which we fallaciously suppose our harmony “is.” Fallaciously embracing the geometric metaphors, we conclude “logically” enough about our phenomena [sic] that “it” [sic] cannot be both an f harmony and a d harmony “at the same time.” And so we begin trying to deny and suppress various of our perceptual phenomena [sic], not realizing that our conceptual tools are inadequate for the analytic task at hand.

Our model helps us to abandon, along with the dichotomies, certain misleading expressions of the species “merely/only/naught but/simply/ . . .” These utterances help us to dismiss inconvenient perceptions as inconsequential. The linguistic mannerism creeps all too seductively into our prose and—worse—into our mental habits as we think about our responses to music. When we fall into such discourse, the puzzling g minor harmony in measure 12, apparently an inconvenient minor dominant in C, turns out to be “naught but” the beginning of a cadence in d minor (= ii-of-C); but then that event, on a yet larger level, turns out to be “merely” part of a large elaboration of v-of-C after all. In this discourse, we shall now notice first of all a malformation: “The . . . g minor harmony . . . to be . . .” But we can now also notice the way in which the expressions “naught but” and “merely” sneak in, so that we are enabled to *push away* some of our perceptions at the expense of others, again as if voting or arriving at a verdict. The expressions tell us not to explore further certain aural impressions that once gripped us; the parlance violates my meta-methodology.

True, we will modify our perceptions as we listen through a piece, extending their P-R-LISTS, creating new perceptions in retrospect that may “deny” old ones, and so forth. Perhaps we perform even more radical acts of mental surgery upon them. We can certainly modify our perceptions, too, during the time in which we come to know a piece more richly. All this is perfectly reasonable. Indeed, our model has given us good examples of the process at work, for example, in p<sub>9</sub>’s modifying p<sub>5</sub>’s modifying p<sub>3b</sub>’s modifying p<sub>2</sub>, both as we listen to the passage and as we come to analyze it more deeply. What is *not* reasonable is any concomitant urge to deny or bad-mouth perceptions we are coming to modify. The defensive anxiety that underlies such an urge is a good clue that there is unresolved psychological business at hand, that the attention of the ear is being busily directed away from something which the mind wants to leave unacknowledged or unexplored. One thinks of Freud’s *Zurückdrängen* and *Unterdrückung*.<sup>21</sup>

21. Freud (1955, pp. 64–65). Joan Riviere (1952, pp. 68–69) translates *zurückgedrängt* as “forced back” and *Unterdrückung* as “suppression.” Neither term means quite the same to Freud as *Verdrängung* = “repression.” Freud uses the words in connection with his analysis of everyday errors (*Fehlleistungen*). On the second page of the cited passage, he asserts that “. . . a suppression (*Unterdrückung*) of a previous intention to say something is an indispensable condition for the occurrence of a slip of the tongue.” On the preceding page, he has told us that the speaker may or may not be aware of the suppressed intention, but in any case “. . . it has been forced back (*zurückgedrängt*). The speaker had determined not to convert the idea into speech and then . . . the tendency which is debarrd from expression asserts itself against his will and gains entrance . . . This is the mechanism of a slip of the tongue (*Versprechen*).”

Earlier, Freud classifies many *Fehlleistungen* as similar to *Versprechen* in mechanism (1955, p. 18; Riviere, 1952, p. 29). One of the errors is *Verhören* = mishearing an auditory event. The one who *verspricht sich* typically remarks: “How stupid of me! Of course I meant to say . . .” The one who *verhört sich* typically remarks: “How silly of me! I realize now that what I really heard was . . .”



When we are using words like “merely” to put down certain of our perceptions, we are likely to call other perceptions “important” or “more important.” Our perception-model enables us to avoid those locations too. They are suspect because they inferentially put down the percepts that are “unimportant” or “less important.” They are also suspect because “importance” is too imprecise a word to be useful in critical discourse. The word casually suggests unspecified criteria of aesthetic value, as if the values had been stated explicitly and the word were descriptive. And—often at the same time—the word can be used carelessly as a synonym for “priority in a syntactic system” or “rank in a formal hierarchy.” The two careless usages, compounding each other, can lead the unwary critic to confuse syntactic priority with aesthetic value, a confusion which is particularly dangerous when one is using Schenkerian or post-Schenkerian music theories. The point is worth two examples.

The first example is literary rather than musical; musicians will more clearly appreciate in a literary context the relations between syntactic function and aesthetic significance. Macbeth, having just murdered Duncan, stares at his bloody hand, which he hardly recognizes, and wonders:

Will all great Neptune's ocean wash this blood  
Clean from my hand? No. This my hand will rather  
The multitudinous seas incarnadine,  
Making the green one red.

—Act II, Scene 2

About the last sentence of this quotation we can formulate a political/legal dichotomy. On the one hand the word “This,” which is the subject of the sentence, is thereby “more important” than the word “multitudinous,” which is (“merely”) an adjective modifying the object of the verb. On the other hand, “multitudinous” is (“obviously”) “more important” than “This.” “Multitudinous” is a five-syllable word after two verses that—with the exception of “Neptune’s ocean” and “rather”—comprise only monosyllables; it is also a bombastic Latin word after two verses which—again with the exception of “Neptune’s ocean”—comprise only common Saxon words; it is thereby the first crest of a compositional wave that begins to surge up at “rather,” climaxes on “multitudinous,” breaks at “incarnadine,” and subsides through the disyllabic “making” into a dissipating surf of Saxon monosyllables, “the green one red.” The wave tosses up the repeated Saxon monosyllabic motif, “My hand,” and amplifies it into the polysyllabic Latinate surge, “Multitudinous seas incarnadine,” finally echoing off into “Making the green one red.”

So should we then vote for “multitudinous” as more important than “This”? No. We are not voting; we should not construct a mental object called “the most important word of the sentence”; we should not predicate

of such a mental object the idea that it “is,” at one unique temporal location; finally, “importance” is a useless term here because we are attempting to make it reference two very different categories at the same time. In one usage, “importance” refers to height on a syntactic parsing-tree, and in the other usage, the same term refers to compositional accentuation in a complex poetic phrase.

Naturally we are more interested in Shakespeare’s compositional procedures, than we are in the fact that his texts usually fit into the paradigms of English syntax. That is not at issue here. What does concern me involves our possibly confusing the *fact that* Shakespeare wrote English, with the *manner in which* he did so. The fact does not distinguish him from myriads of English-users whose texts interest us far less; the manner does so distinguish him, and cannot be separated from his “compositional procedures.” So, while it is not interesting that the word “This” is the subject of some abstract English sentence, it is intensely interesting that *Shakespeare* makes “This,” used a substantive noun, the subject of the *particular* sentence whose compositional structure we have been exploring in connection with the multitudinous seas. The grandiose climax of the sentence is not an Event whose significant Contexts and Perception-Relations can be completely excised from contact with the sentence as a whole, from contact in particular with the opening and the subject of the sentence. We do not respond to dramatic poetry by impatiently twiddling our thumbs while the actor gets through the less impressive but unfortunately necessary words, to arrive at the more magnificent and heaven-storming but less “necessary” ones.

An actor who behaves as if we *did* respond that way will be in trouble. For no audience can possibly miss the “importance” of multitudinous,” while an untrained or insensitive actor can easily blunt the effect of the passage by not sufficiently exploring and projecting to the audience how the word “This” works for the poetry. Specifically, Macbeth has just wondered if the ocean might wash “this blood” clean from “my hand.” He answers, “No.” Then he begins a new thought with the word “This.” We suppose that “This” is an adjective, and that the noun “blood” will follow as before. Or, if the actor makes us feel that “This” is being used as a noun, we suppose that it stands for “This blood.” But as Macbeth continues to speak we do not get the word “blood”; instead we get “This my hand.” Not only will the blood never wash off the hand, even worse: “this blood” and “my hand” have fused into a compact and indissoluble union, this-my-hand, a union for which the appositional form in the syntax is a telling metaphor. Macbeth’s question concerned three distinct objects, the ocean, the blood, and the hand; his answer condenses the objects into two, the blood-hand and the multitudinous seas. Hand and blood fuse into one, as action and guilt fuse into one for the character. The contraction of the hand and the blood into the blood-hand creates a tight knot of energy; this energy is later



released by the expansion of the texture into the polysyllables of "multitudinous" and "incarnadine." (I first became aware of these energy profiles by noticing that I was instinctively clenching my fist as I said "This," and unclenching it, gradually splaying the fingers of my hand to their widest possible extent, as I intoned the words, "multitudinous seas incarnadine.") I shall say more about such performance-perceptions later, in Part V.)

So, "This" is indeed the dramatic focus of Macbeth's attention, the poetic subject of Macbeth's discourse as well as the syntactic subject of his sentence, a subject that becomes—as he stares at it—this blood, this guilt, this hand, and this act all in one, compressed into the taut Saxon monosyllable "This," the very antithesis of the around Latin polysyllable, "multitudinous." Which word shall we now say is the "more important"? The reader will by now have taken my point: "importance" is not a useful critical expression here, and it particularly misses the mark when it invites us to vote between English sentence-structure and poetic compositional shape.

My second example involves a somewhat analogous critical situation in a musical analysis. In that analysis, a well-formed Schenkerian reading assigns to a certain event a syntactic role as Kopton in an Urlinie, apparently ignoring how much "more important" another event sounds. The situation is somewhat analogous to the Shakespeare example because protests about the Schenkerian reading are to some extent methodologically similar to protests about our calling "This" the subject of Macbeth's sentence, when "multitudinous" is clearly so much "more important." One can also protest the pertinence of Schenkerian syntax itself, in a way one does not usually protest English syntax, and I will get to that methodological issue later on.

The music is Handel's familiar setting of the carol *Joy to the World*, and the Schenkerian reading is by Allen Forte and Steven E. Gilbert (1982, pp. 182–183). In connection with this reading the authors bring up a point of Schenkerian syntax: it is not possible to assert a well-formed Urlinie that starts on  $\delta$ , e.g. at the word "Joy"; a well-formed Urlinie can, however, start on  $\xi$ , for example, at "world." This Urlinie can descend from  $\xi$  to  $\mathfrak{f}$  with appropriate support from an Ursatz while Heaven and angels sing. In contrast, there is no syntactic support from any well-formed Ursatz for a putative descent from  $\delta$  (Joy) to  $\xi$  (world) within an Urlinie that might start on  $\delta$ . As the authors put it, "the steps between  $\delta$  and  $\xi$  are . . . over a tonic harmony; this contrasts with the full support given the slow descent from  $\xi$  to  $\mathfrak{f}$  over the last seven measures." The melodic gesture of  $\delta$ -to- $\xi$ -over-a-tonic-pedal is described by the Schenkerian term, "*Leerlauf*."

The authors' analysis might at first seem utterly inconsistent with the tremendous accentual impact of the musical attack on "Joy." Is not this brilliant impetus the most striking thing about the piece? And in that case, how can one presume to assert that "world" is "more important"? The reader

recognizes, I hope, the analogy with "multitudinous" and "This." In my view, the Schenkerian reading does not claim that "world" is "more important" than "Joy"; rather it asserts that "world" is the Kopton for a well-formed Schenkerian Ursatz, much as "This" is the subject of a well-formed English sentence in Macbeth's speech.

The critic will go on to demand of analysis, that it demonstrate the pertinence of such grammatical observations for our perceptions of the artworks at hand. I have tried to produce relevant discussion for the Shakespeare passage in this regard, and I shall now make the same attempt for the Handel piece.

There, the Schenkerian syntax suggests an interesting metaphorical image. Handel's joy is cosmic. It fills the universe with its radiance, as a divine harmony. It does not move from one location to another. Specifically, it does not leave its heavenly orb and travel to the world through some conductive medium, for example, through some diatonic series articulated in human time, like an Urlinie. Rather it exists in-all-places at-all-times and suffuses all things, the world in particular, with its tonic harmonic resonance. The Leertlauf transmits the radiance of this joy as it were like a space heater, through empty space. No conductive medium is necessary. Only in the world, here on  $\xi$ , can we set about the kind of structural melodic activity that conducts one event to another through *human* time. That is, only here and now can a Schenkerian Urlinie get underway, as the upper structural voice of an Ursatz.

These metaphors belong squarely within a conceptual tradition that distinguishes the (harmonic) Music of the Universe from (melodic) Human Music, a tradition extending back to Boethius among music theorists. Zarlino carried the tradition into and through the Renaissance. Handel would have been sensitive to it at least through his relationship with Mattheson. And Schenker's mature theory reworks the old metaphor into yet another form: he presents his Ursatz as a projection through human time, by idealized human voices, of a categorically prior harmonic structure given by Nature.<sup>22</sup>

Whatever the relevance or irrelevance of this cultural history, the cosmic metaphor gives us a poetic reading that "makes sense" of the Schenkerian syntax presented by Forte and Gilbert, while also making sense of our natural urge to sing the word "Joy," in the musical setting, as brilliantly and

22. Relevant material from Boethius is translated by Oliver Strunk (1950, pp. 84–85). Gioseffo Zarlino's ideas are succinctly discussed by translators Marco and Palisca (Zarlino, 1558/1968, pp. xviii–xxiv). An eighteenth-century version of the Boethian idea appears in Mattheson (1739, p. 6); Mattheson's prose paraphrases the text from Boethius cited above. The article on Mattheson in the *New Grove Dictionary* mentions the long-continuing friendship and mutual influence of Handel and Mattheson. Heinrich Schenker's remarks about the Ursatz appear in *Free Composition* (Schenker, 1979, pp. 10–11).



radiantly as possible. This reading would be helpful to a number of singers and conductors, as a way of drawing their interest and hence their attention to the vocal problem posed by "world": it is easy for a chorus to run out of steam at this point in the music, after making a slight diminuendo over the first four notes. No self-respecting chorus needs to be told that "Joy" is something special, just as no self-respecting actor needs to be told that "multitudinous" is something special. Most choruses, however, can use some coaching with the delivery of "world" in its context here, just as most actors can use some coaching with their delivery of "This" in context. And it will surely help a chorus to think of "Joy to the world" as *one* event establishing a harmonic resonance that envelops both the continuing joy and the continuing world, rather than as *four* events constituting a melodic journey that begins at joy and *end* with the world.

A point should be taken up here that was left hanging earlier. We are much freer to reject Schenkerian grammar, as part of a theoretical ContexT in which to make perceptual STatements about tonal music, than we are to reject traditional English grammar in connection with English poetry. Such is indeed the case. But, while we are comparatively free to accept or reject this or that music theory as part of a perceptual ContexT, or as part of a language L in which to make STatements about tonal music, we are not so free to accept or reject the notion of *some* music theory, or theories, through which we can discuss things traditionally called "tonics," "dominants," "strong beats," "beats," etc. To the extent that we attribute systematic priority of any kind to such things in tonal music, the sorts of issues we have been discussing must come up. We shall still have to watch out not to confuse the assertion of systematic priority, for example, for a tonic or a structural downbeat, with the vague locution that the corresponding musical event is "more important" than others.

I have suggested that our urge to make political/legal choices, thereby suppressing certain "less important" perceptions as "naught but" this or that, can be a psychological pushing-away of material deemed inappropriate or disturbing, a kind of *Zurückdrängung* or *Unterdrückung*. In my own experience, I have always found it useful and productive to proceed on this assumption, whenever I feel the urge upon me. But I do not think that *Zurückdrängung* is its only source. Another significant factor is our tendency to confuse arguments about the truth and well-formedness of propositions in the language L, or arguments that urge us to prefer one such position over another in the context of L and the score, with arguments attributing relative value or validity to perceptions themselves. An example lies at hand from our discussion of "Joy to the World." In that connection, we can consider Sentences (a), (b), and (c) below:

- (a) "The Urlinie for a pertinent Ursatz begins on the 8 of 'Joy'."
- (b) "The Urlinie for a pertinent Ursatz begins on the 5 of 'world'."

(c) "The Urlinie for a pertinent Ursatz begins on the 3 of 'And heav'n'." Sentence (a) is false; it can be demonstrated false by an appeal to the conventions of Schenkerian language—conventions that define "Urlinie" and "Ursatz"—along with an appeal to empirical observation directed at a score of the piece—at the noteheads, and so forth. These appeals involve no listening; they require perception only so far as a person must be able to read English or German text and musical scores, to understand the logical arguments. A hypothetical "perception" corresponding to Sentence (a), say  $p_a = (\delta \text{ of 'Joy' }, \text{ whole piece, } \dots, \text{ Sentence (a)})$ , could quite properly be dismissed as "malformed." Criticism of  $p_a$ , however, should *not* be directed at some vague and wrong-headed notion that  $p_a$  makes the Event of the opening "Joy" seem "too important." Rather, criticism should address the verifiable fact that Sentence (a) is not a true sentence in the understood language L.

Neither Sentence (b) nor Sentence (c) is false, in the sense that Sentence (a) is. However, the logical conjunction of (b) and (c) is false in that sense: within the language L, specific rules tell us that the sentence "(b) and (c)" is false. The truth of (b) logically entails the falsity of (c), and vice versa.

So much for the logic of sentences (b) and (c) within L. When we construct corresponding perceptions  $p_b$  and  $p_c$ , however, we are *not* within L. We cannot call either perception "true" or "false," even conditional upon the other. Both perceptions are well-formed since, *inter alia*, neither Sentence (b) nor Sentence (c) is in itself false (or malformed in L). The matter can stand some elaboration. Let us define the perceptions as  $p_b = (\delta \text{ of 'world' }, \text{ whole piece, } \dots, (\text{p}_b \text{ denial}) \dots, \text{ Sentence (b)})$  and  $p_c = (\delta \text{ of 'and' }, \text{ whole piece, } \dots, (\text{p}_c \text{ denial}) \dots, \text{ Sentence (c)})$ . Since Sentence (b) and Sentence (c) are mutually exclusive within L, it is impossible to perceive a well-formed thing called " $p_b$ -and- $p_c$ " at one-and-the-same-time in one-and-the-same-place. But our model does not propose that we consider  $p_b$  and  $p_c$  to be in the same phenomenological place at the same phenomenological time. Quite the contrary: the model enables us and indeed urges us to articulate *different* locations for  $p_b$  and  $p_c$  in phenomenological space-time. Thus a political/legal dispute over " $p_b$ ? or  $p_c$ ?" is out of place.

We can rationally argue in a political/legal way over grounds for preferring Sentence (b) to Sentence (c), or vice versa. We can point to aspects of Schenkerian theory, and/or aspects of the score, that make one or the other sentence preferable. Thus, to support a preference for Sentence (b), we could point to the mini-descent from 5 to 1, with full Ursatz-type support from the bass and the harmony, that shapes the first cadence of the music ("... world, the Lord is come"). Or we could point to the lack of bass support under the acoustic attack of the 3 at "And heav'n"; the entrance of the bass voice is delayed so as to support the agogically accented 5 that follows shortly after, on "sing." And so forth. We can also carry out such an argu-



ment by invoking the text of the song. Thus one might try to whip up a reader's enthusiasm for Sentence (b) through the earlier cosmic blarney involving the *Leertlauf*. An opponent might try to arouse a reader's enthusiasm for Sentence (c) by alternative metaphors. No such considerations, though, could argue for preferring one *perception*,  $p_b$  or  $p_c$ , over the other. One either *has* the perception, or one *doesn't*. I myself much prefer Sentence (b) and do not experience perception  $p_c$ , but I can hardly command a person who already experiences  $p_c$  not to do so. Anyone who might experience *both* perceptions, at different phenomenological times and places in the listening process, would find the polemic useful for focusing and refining the P-R-LISTS involved.

Another example will help us distinguish the logic of sentences in L from the logic of perceptions in our model. Suppose any common theory of tonal harmony as a component of a language L. Consider two sentences within that language. Sentence XDY reads, "Event X functions harmonically as a dominant of Event Y," and sentence YDX reads, "Event Y functions harmonically as a dominant of Event X." Clearly each sentence is well formed. And, just as clearly, the sentence that is the logical conjunction of XDY with YDX *must* be false. If XDY is true under a certain allowable substitution for X and Y, then YDX must be false under that substitution, and vice versa. We are assured of this without even considering any musical score, let alone doing any listening. Now let us turn out attention to Figure 10, which sketches a cadence by Siegmund just before the last passage sung by Sieglinde in Act I of *Die Walküre*.

It seems at first that we have at hand here a perception-structure that involves exactly the sentence just branded as false, that is, the logical conjunction of XDY with YDX. For the X event is evidently perceived to resolve as a dominant seventh into the Y event at the moment of the cadence. (The textual alliteration on the vocal Gs amplifies the effect.) And, *apparently* at the same time and in the same place, we perceive the Y event as a dominant

Fig. 10.

to the X event that immediately precedes it. (The harmony at Y eventually returns, at the end of Sieglinde's passage, to another cadential gesture in G quite like the one that contains the X event.) It seems that we must deny the one perception or the other, in order to avoid a logical paradox.

But our difficulty is only apparent. The confusion arises from our having improperly reified *one percept* (as opposed to sentence) called XDY and *one percept* called YDX; the confusion is compounded by the fashion of speaking that makes us believe we have both perceptions "at the same time," so that we try to imagine *one* composite perception called "the perception of both-XDY-and-YDX." Our model enables us to avoid just these confusions, by articulating a variety of perceptions, at a variety of places in phenomenological space and time. The earlier analysis of an abstract de-captive cadence (Figure 1) will serve us in good stead here. In connection with Figure 10, we can formulate the perceptions  $q_1$  through  $q_6$  following, among others.

- $q_1$  = (Event X,  
Figure 10 up the pause,  
... ( $q_2$ , implication) ... ,  
V-of-an-expected-I)
- $q_2$  = (Event X,  
Figure 10 ending with  $G\sharp$  instead of  $e\sharp_6$ ,  
... ( $q_1$ , realization) ... ,  
cadential dominant)
- $q_3$  = (Event X,  
Figure 10 without the bass and figure for the event at the end,  
... ( $q_2$ , confirmation) ... ,  
cadential dominant)
- $q_4$  = (Event Y,  
Events X and Y,  
... ( $q_3$ , implication) ... ,  
dominant of X)
- $q_5$  = (Event Y,  
Events X and Y plus a protensive X' that projects  $D^7$  harmony,  
... ( $q_4$ , realization) ... ,  
dominant in transit from X to X')
- $q_6$  = (Event Y,  
Figure 10 and on through Sieglinde's passage,  
... ( $q_5$ , confirmation and elaboration) ... ,  
structural dominant in transit from Siegmund's cadential G-V to Sieglinde's)



All these percepts are well formed. Perception  $q_7$  following is *not* well-formed:

$q_7 = (\text{Event } X\text{-and-}Y,$   
Figure 10,  
... ,  
... , XDY, YDX, ...).

The ST atement-LIST for  $q_7$  is malformed within the language  $L$ , so  $q_7$  is malformed as a perception. There can not be any phenomenological place and time where  $q_7$  "is." In contrast to that, one observes how Siegmund's protensive  $G_3$  event, involved implicitly in  $q_1$ ,  $q_2$ , and  $q_3$  as that-of-which-X-is-the-dominant, is a different phenomenological object from Sieglinde's  $Y$  event, an  $E$  raised-sixth, involved in  $q_4$ ,  $q_5$ , and  $q_6$  as that-which-is-a-dominant-of-retained- $X$ .

One more example will focus our attention even more sharply on the discrepancy between the logic of sentences-in-the-language- $L$  and the logic of perceptions in our model. A well-known drawing outlines a Gestalt that can be seen as either a rabbit or a duck. In this connection we can construct a visual percept  $r$ , perception-of-rabbit, and a visual percept  $d$ , perception-of-duck; evidently both  $r$  and  $d$  are well-formed and relevant. One can make *verifiable statements* on a ST atement-LIST for  $r$ : these are ears; here is the eye; and so on. One can make verifiable statements in the same language about  $d$ : this is the bill; here is the eye; and so on. Present-day computer programs (at least in theory) could recognize such features of the drawing, find them well-formed, and tell us both "Here is a rabbit" and "Here is a duck" according to stipulated L-criteria for uttering those remarks. However, though "I see a rabbit" and "I see a duck" are both valid perception-utterances, "I see a-rabbit-and-a-duck" is *not*; at least to my knowledge nobody ever sees both animals *at the same time* (in the same phenomenological place). We would not want our computer to tell us "Here is a both-rabbit-and-duck." We would want the machine to know there is no such animal as a both-rabbit-and-duck.

Thus, even though "I perceive rabbit" and "I perceive duck" are both valid perceptions, we cannot infer the validity of "I perceive rabbit-and-duck." We *can* infer "(I perceive rabbit) and (I perceive duck)," but *only* under a very special logical interpretation of the conjunctive "and": the meaning of the conjunction here does *not* imply "at the same time in the same place." That is, we must understand: "Somewhere I perceive rabbit and somewhere I perceive duck." In this linguistic form, the operator "*Somewhere I perceive*" does not distribute over conjunction of its arguments: "((Somewhere I perceive)(thing 1)) and ((Somewhere I perceive)(thing 2)))" does not mean the same as "(Somewhere I perceive)((thing 1) and (thing 2))." So, in particular, "((Somewhere I perceive)(rabbit) and

((Somewhere I perceive)(duck)))" is valid, while "(Somewhere I perceive)(rabbit and duck)" is not only invalid—since I don't—but also malformed, since rabbit-and-duck is not a well-formed object within animal language.

In just the same way, "((Somewhere I perceive)(XDY) and ((Somewhere I perceive)(YDX)))" is loosely speaking valid, if we mean by  $Y$  here "something I infer from the acoustic signal during the indicated clock-time." But "((Somewhere I perceive)(XDY-and-YDX)))" is not valid: there is no such thing as XDY-and-YDX in the language of harmonic theory.

And in just the same way, "((Somewhere I perceive)(a  $\hat{5}$  Urline)) and ((Somewhere I perceive)(a  $\hat{3}$  Urline)))" is not malformed, though I do not myself assert it of the Handel composition; however, "(Somewhere I perceive) (both-a- $\hat{5}$ -Urline-and-a- $\hat{3}$ -Urline)" is malformed, since there is no such thing as both-a- $\hat{5}$ -Urline-and-a- $\hat{3}$ -Urline in the language of Schenkerian theory. If we wanted to, we could develop a post-Schenkerian theory in which a piece could logically have more than one "Urline." Using that new theory as a component within a new language  $L$ , we could then render the conjunctive perception well formed. Presumably we would change the vocabulary of our neo-theory and our ST atements, since "Ur" no longer seems appropriate.

We should certainly be willing to alter our theoretical discourse in this way, whenever a certain mass of perceptual experience leads us to believe that the alterations might enable us to articulate valuable analytic insights. But we should think long and hard before subjecting a received theoretical discourse to fundamental modification. In changing the language, we risk losing our ability to express some of the features that characterize what is problematic about a tricky perceptual situation. For instance we could create a new word "dubbit," defined as the Gestaltist drawing recently discussed; by changing my language in this way I could say "I see a dubbit" and thereby "solve the problems" involved in saying both "I see a rabbit" and "I see a duck." But it is just the "problems" in the perceptual situation that we find *characteristic and interesting*, worthy of extended analysis; our linguistic expedient has turned the interesting phenomenon into a humdrum affair. So you see a dubbit. Who cares if you see a dubbit?

We should generally take the same methodological tack when some of our perceptions about a piece of music involve ST atements that are logically incompatible-in- $L$  with other ST atements that we articulate in connection with other perceptions. In such a situation, we should generally want our analysis to convey the characteristic multiplicity of the perceptions involved and the characteristic incompatibility of their assertion in the-same-place-at-the-same-time. The rhythm of the dialectic thus engaged will be a significant aspect of our rhythmic response to the music.

Indeed, one of the most interesting features of our model is the way in



which it implicitly engages our sense of musical rhythm beyond what is noted. The model suggests, for example, that the rhythmic effect of the passage from *Morgengruß* involves not just aspects of the music traditionally considered as "rhythmic," but also the way in which the various percepts  $p_1$ ,  $p_2$ ,  $p_{3a}$ , and so on come into mental focus, engage one another in various P-R situations, recede from focus, and leave behind various mental residues, all the while the acoustic signal is proceeding in clock-time. The model is at present not worked out adequately in this direction. It lacks precision compared to traditional models for musical rhythm in the West since the Renaissance. To provide anything like such precision and for other reasons as well, it needs to have worked into it more explicit roles for the various sorts of time, some of them multidimensional, within which the perceptions  $p_i$  are formed, interrelate, and possibly decay in memory. These sorts of time might well include a clock time for the acoustic signal, another Euclidean time within which the listeners' organs react as systems in the sense of classical physics, a phenomenological time whose passage is marked by events that are pertinent changes of state within those organs (e.g., neuron firings or patterns of such firings) a theoretically determined phenomenological time marked by mental constructs called "beats" or "measures" or "breves" or "perfections" or something of the sort (within certain pieces that posit such mensural notions), a processing time in our model within which something metaphorically like EVALuation of p-structures takes place, possibly a time in which our higher-level parser manipulates configurations of p-structures before EVALuation, and possibly a time within which EVALuation is subject to external interrupts carried into the processing system from one or more of the other time-systems just listed.

The project, when sketched this way, may strike the reader as hopelessly extensive. In fact it strikes me that way. I think that our model, no matter how much development it may undergo, will always remain incomplete and informal in some of its most compelling rhythmic aspects. That is surely a defect in the model regarded as a component within a potential formal theory of music-perception. But it does not damage the model irreparably as a linguistic tool for making analytic statements about pre-existing pieces of music. In the discussion of *Morgengruß*, I hope to have exemplified some ways in which I feel the model can in fact convey new and characteristic ideas about aspects of a piece that are undeniably "rhythmic." I used English prose and a few graphics for the purpose. I can imagine using other media as well: poetry, other languages, other kinds of graphic art, theater arts, musical performance of the piece, or of excerpts therefrom, or of a series of examples (with or without commentary), composed *Lehrstücke* of various sorts, and so on, the various media alone or in combination. The graphic conventions of Schenkerian or post-Schenkerian theories,

for example, might enable one to represent aspects of p-structures in local Contexts by "windows" framing regions of incomplete or tentative graphs. Figure 8.1 through 8.9 suggest such formats. A considerable amount of rhythmic theory could be formalized from the visually manifest interrelationships of such windows-on-graphs. The Euclidean ground underlying such formalization, that is the plane of the page or of the computer monitor, would have to be taken into careful consideration, lest its influence on the theory be underestimated.<sup>23</sup>

Earlier on, I suggested that the p-model is helpful for distinguishing between the undefined "importance" of perceptions, and the syntactic priority of elements within a language  $L$  that admits such priorities, elements like subjects of sentences, tonic harmonies, strong beats, or *Kopftöne* of *Urtönen*. The model can also distinguish other sorts of priorities that are helpful in avoiding fruitless political/legal controversy. For example, we can define a category called "finality":  $p_1$  is more final than  $p_2$  if the Context of  $p_1$  includes that of  $p_2$  in all respects and also extends beyond it in the clock time of the piece. We can also define "P-R-emblematicity":  $p_1$  is more P-R-emblematic than  $p_2$  if the P-R list of  $p_2$  is longer, or deeper, or more-inclusive in some other defined way, than the P-R-LIST of  $p_2$ . We can define "ST-emblematicity" in the same spirit. And so forth. We are free to assign aesthetic values to these categories if we wish: one critic can legitimately believe and claim that more-final perceptions are thereby "more important" (of greater aesthetic value) than less-final perceptions; another critic can as legitimately believe and claim that the more emblematic perceptions are the "more important" ones; and so on.

I argue that discriminations of this sort are methodologically desirable, not because I believe that value judgments are unimportant in the critical context but—on the contrary—precisely because I believe they are so very important. We ought to be correspondingly clear about what those values are, to ourselves and—where the occasion demands it—to others. That is why we should not mistakenly confuse our values with formal properties of rationalist systems. The confusion can only impoverish and mar both our systematics and our valuations. To put the matter more colloquially: whatever the individual critics of the preceding paragraph believe, they will all know what they are talking about.

23. The tree-structures of Lerdahl and Jackendoff (1983) seem particularly amenable to elaboration through such "windows." Extending their theory in this way might entail modifying their methodology, particularly on matters of linguistic "preference" and perceptual priority. As the reader will have gathered from my earlier remarks on this issue, I believe that modification in this regard would in fact enrich their theory, which in general I find engaging, powerful, and significant. Recent lectures by Lerdahl, along with private communications, lead me to believe that the theory may develop in the direction of something like my "windows," although of course on its own terms, not on mine.



## Part V: Perception and the Productive Modes of Behavior

At the very beginning of this article, I said that I found the trend toward phenomenological studies of music problematic for music theory, particularly in what one might call the sociology of the matter. I shall now pursue that thought.

The problems I want to consider arise from a tradition in studies of perception, to suppose that there is something X that perceives and something Y that is perceived. Typically X is a hypothetical person; sometimes X is a mind that might be God or a computer or an animal.<sup>24</sup> Typically Y is asserted, explicitly or implicitly, to have a predicate that can be called "reality" or "existence" or "being," or something of the sort. Even Berkeley agrees that a tree Y does always "exist," since God (= X) is always observing it. (See Russell, 1945, p. 647 and following for an entertaining discussion of Berkeley's argument.)

Classical European philosophy and Indo-European sentence structure suggest to us that we call X a "subject" and Y an "object," mentally supplying a verb that describes a relationship in which X is doing something to Y—that-is-not-X; X is "observing" Y or "perceiving" Y, or something of that sort.

Husserl proceeds quite differently in these matters, as do other modern philosophers among his precursors, contemporaries, and followers (Miller, 1984, pp. 7–32). But they still recognize a distinction of X and Y in some form. Y is crucially not X-itself but rather some thing(s) demonstrably "other"—this tree here now (that is not me), this acoustic signal here as I listen to it over this time span, that is impinging upon me (but is not me), this artwork as I perceive it or understand it, perhaps as Z made it, or even as Z is making it, but *not* (NB) as-it-is-emerging-now-from-me, let alone as-it-is-being-me-and-I-am-being-it.<sup>25</sup>

24. Or a plant! I once saw a fast-action film of a vine that reversed its direction of growth along the ground 180 degrees, and crawled back for some distance in that direction to reach a stake that had been put in the ground there; the vine then proceeded to climb the stake. Did the vine perceive the stake? If not, why not?

25. I phrase aspects of the sentence to recall Hegel, for it might appear at first that Hegel's phenomenology *does* precisely obliterate, or attempt to obliterate, the X/Y distinction. In a sense that is true. But the picture it gives of Hegel's procedure is not complete enough. *The Phenomenology of Mind* does not *deny* subject-perceiving-object and *substitute* Understanding-understanding-Understanding. Rather the book portrays a *process* of enlightenment, a *journey* that *begins* at subject-perceiving-object and *ends* at Understanding-understanding-Understanding. The journey is a very different thing from the destination: a trip from Des Moines to Chicago to New York to Paris to Damascus is not the same thing as Damascus, nor does it deny Des Moines. Damascus is not a *substitute* for Des Moines in this connection. For "Des Moines" read "Consciousness" or "Perception"; for "Damascus" read "Self-consciousness" or "Understanding." The air carriers and intermediate airports are the dialectic process and the stages of dialectic transition. According to Gadamer, He-

The habit of distinguishing X from Y in thinking about perception does not in itself pose a danger for music theory; the habit becomes dangerous, though, when we add an assumption that music theories are, or should be, fundamentally perceptual in nature or purpose. That assumption makes us take as a point of departure for *music theory* (and not just for studies in musical perception) a paradigm in which a "listener" X is "perceiving" some "music" Y that is demonstrably other-than-X. In such imaginings, "the music" Y is profoundly and fundamentally *there*, as made by some Z, prior to any activity of X-now, even prior to X-now's presence. For X, Y has *Gegebenheit* and *Dasein*, not just *Sinn* and *Anwesenheit*. Roughly speaking, X finds Y *given* and *there*, not just *sensible* and *present*. That is so even if, in some situations, Z might be X-yesterday or X-thirty-seconds ago.

The X/Y paradigm can accommodate without undue strain the apparatus of Husserl's phenomenology.<sup>26</sup> But it fits very poorly with the present-tense activities of composers and performers. "The music" that a composer is composing right now is not something demonstrably *other* than the composer; on the contrary, we say precisely that it is something "of the composer." Nor is the music-as-it-is-being-composed fundamentally *there* prior to the activity of the composer-now; on the contrary, the gestus of composition involves producing something *not* there prior to that activity. This is as true for the *symphonistes*, the collage composer, and the composer of 4' 33", as it is for the *phonascus*, the original genius, and the composer of *The Ring*. To be sure, a traditional composer at work can enter into noetic/noematic exchanges, even into subject/object relationships, with sketches or portions of the piece *already* drafted. Perceptually oriented music theories will then be pertinent to the working procedure, perhaps even useful or indispensable. But the music-*as-it-is-being-composed* is far from prior to the composer's activity, nor is it something "out there," other than the composer.

Hegel's *The Phenomenology of Mind* demonstrates "the necessary transition [emphasis mine] from consciousness to self-consciousness. . . . R. W. W. . . has shown that in looking back from the chapter on 'Force and Understanding,' one must view 'Sense Certainty' as the point of departure: namely, . . . consciousness as yet entirely unconscious of its essential self-consciousness [X thinking 'I perceive Y' and taking it for granted that Y is something not-me]. . . . Hegel's claim that the dialectical transitions are *necessary* [emphasis mine] is made good . . . again and again if one reads carefully." (Gadamer, 1976, p. 36).

26. Chapter 1 of Miller (1984) also addresses this issue. The differentiability of Y from X is clear in Husserl's insisting that "the 'direct' objects of our perceptual acts are ordinary physical objects, and not anything else in their stead" (Miller, 1984, p. 14). Miller continues by citing Husserl's own text: ". . . I perceive the thing, the object of nature, the tree *there* [emphasis mine] in the garden, that and nothing else is the real object of the perceiving 'intention.' . . . an 'inner image' of the *real tree that stands out there* [emphasis mine] *before me* [emphasis mine] is nowise given . . ." (ibid.).



Once the music *has been* composed, it becomes a wholly different phenomenon for the composer. It becomes a *trace* or a *record* of past activities. The record has special values and meanings for performers, listeners, and critics, but for the composer *as* composer-of-the-piece, the trace means precisely what the sight of ski tracks on the hill behind means to a downhill skier who has navigated a treacherous slope, or what a photograph of yourself on the Eiffel Tower means to you if you have just returned from your first trip to Paris. Not just the level of meaning but the *kind* of meaning is the same in all three cases: "That was me. I was there."

In contrast, the composer-composing might say, "Here I *cum-it-am-cum-is*." And the listener-perceiving would characteristically say yet something else: "I am here-now with that music there-now." The listener-perceiving is involved in the X/Y paradigm; the composer-composing is not, nor is the composer-having-composed. The composer *as* composer does not "perceive" the art work (or "understand" it either, in Hegel's sense); the composer either *is doing* it or *has done* it. Roger Sessions puts this well:

Composition is a *deed*, an action. . . . The climber in the high mountains is intent upon the steps he is taking, on the practical realization of those steps. . . . [The composer's] psychology is not dissimilar . . . extremely often the completed work is incomprehensible to him immediately after it is finished.

Why? Because his experience in creating the work is incalculably more intense than any later experience he can have from it; because the finished product is, so to speak, the goal of that experience and not in any sense a repetition of it. He cannot relive the compositional experience. . . . And yet he is too close to it to detach himself to the extent necessary to see his work objectively, and to allow it to exert its inherent power over him. (Cone, 1979, pp. 25–26).<sup>27</sup>

The X/Y paradigm fits poorly in the same ways with the performer in the act of performing. "The music" that this person is playing now is not "over there" for the player; it is not something other-than-me, prior to any activity on my part. As with composing, the gestus of performing involves producing something that is *not* "there" prior to the activity, something "of the artist" at the time of creation. To be sure, a traditional performer at work can enter into noetic/noematic exchanges, even subject/object relationships, with parts of the acoustic signal already produced; to that extent per-

ceptually oriented music theories are relevant and useful. But "the music" as what-is-being-played-right-now is far from prior to the performer's activity. Here, even more than in the case of composition, no one can help but recognize "the music," after it becomes separate from the person of the musician, as a trace or record of that person's activities. We commonly use the word "record" in precisely that connection.

There is not space here to explore the ways in which theories of music may be useful to working composers and performers, or to debate to the extent to which useful theories in those connections may or may not be those explicitly bound to ways of perceiving pre-existing compositions and performances (rather than those bound to general abstract contexts of science, logic, dialectics, et al.). Personally, I believe that music theories of all kinds can be useful beyond analysis and perception as goads to musical action, ways of suggesting what *might* be done, beyond ways of regarding what *has* been done. But I shall leave these issues unexamined any farther, and proceed instead to sum up my polemic point: since "music" is something you *do*, and not just something you *perceive* (or understand), a theory of music can not be developed fully from a theory of musical perception (with or without an ancillary dialectic). At least so I maintain.<sup>28</sup>

Actually, I am not very sure what a "theory of music" might be, or even a "theory of modern Western art-music," but so far as I can imagine one (of either) that includes a theory of musical perception, I imagine it including the broader study of what we call people's "musical behavior," a category that includes competent listening to be sure, but also competent production and performance. Here I understand production and performance not only in the sense of high art but also as manifest in everyday acts of musical "noodling," and in a whole spectrum of intermediate activities. Under the rubric of noodling I include rhythmic gestures, conscious or unconscious, like patterns of walking, finger-drumming, or nervous scratching; I also include singing, whistling, or humming bits of familiar or invented tunes, variations on familiar tunes; I also include timbral productions like twanging metal objects, knocking on wooden ones, making vocal or other bodily

28. I differ explicitly here with the stance of Lerdahl and Jackendoff. The first sentence of their book reads: "We take the goal of a theory of music to be a *formal description of the musical intuitions of a listener who is experienced in a musical idiom*." (Lerdahl & Jackendoff, 1983, p. 1.) I am impressed but not persuaded by their arguments on the issues I have just brought up, arguments which can be found explicitly on pages 7–8 of their text and implicitly throughout it.

It is true that the musical intuition of their listener is not "out there" or "other than me" for that person. But the musical intuition is not "the music"; it is not Husserl's demonstrable-*this*, like the "real tree" of footnote 26. When I listen to *Morgengruß*, "the music" is (that instance of) *Morgengruß*. That is what I am listening to (perceiving); my intuitions, like my ears and my brain, are things I am listening *with* or *through*. For me the song is *given* and *there*.

27. The passage is taken from "The Composer and His Message," a lecture delivered at Princeton University in the Fall of 1939.

I have modified the sense of the passage by one of my omissions. Sessions writes: "he cannot relive the compositional experience without effort which seems quite irrelevant." I do not see how the experience can be relived at all.



sounds without pitched fundamentals or direct phonemic significance, blowing on conch-shells, through hose-pipes, through blades of grass, and so on. The range of activities between noodling and high art would include bad-and-incompetent performances of art, bad-but-somewhat-competent ones (where the performer realizes that a goal has not been attained and has some sense—cognitive or kinetic—of what to do about it), playing in a band or orchestra, or singing in a chorus, at various levels of competence, dancing in more or less structured ways, performing *Lieder* or Gospel or chamber music or jazz or rock, informally, semi-formally, or semi-formally, writing passages or pieces of music for informal, semi-formal, or semi-formal groups to play, or for high school bands, orchestras, choruses, or "shows," improvising solo or in ensemble, putting an ensemble musical score up on the piano rack and "fooling around" with it (making impromptu transcriptions first this way, then that), trying to recover the sound of an ensemble piece from memory by such "fooling around," on piano or synthesizer keyboards, and so on.

The p-model we have been studying does not begin to engage these forms of musical behavior, and it will not do so until we can conceptualize the various activities as formal "utterances" of some kind, in extended "languages L" of some kind. I hinted at such possibilities when I first discussed the "language L" of the p-model, in Part II of this article. I shall suggest the possibilities recurrently throughout the material of Part V that follows. I am not sure that "language" is a useful word to retain in this connection, although there are precedents for the usage (e.g., body language, the Language of Love). And even if the p-model "begins to engage" the activities, it will not very likely be able to *model* them.

The activities as listed above bring into focus what I earlier called the sociology of the matter at hand. Anyone who as spent a certain amount of time around contemporary U.S. music departments or conservatories will be aware of many ways in which our institutions—academic and non-academic—separate competence in creating fresh music, in performing existing music, and in understanding received musical art. We will recognize this separation whether we like it, dislike it, or respond to it with mixed feelings. The reader has gathered that I dislike it. I do admit that it has some conveniences, mainly in that it discourages dilettantism. Its disadvantages, much more serious to my way of thinking, lie in its encouraging young composers, performers, and scholars to concentrate respectively upon producing "effective" sounds, upon exercising mechanical skills, and upon viewing art as something "given" and "there." We should encourage these young people instead to conceive their various activities as interrelated, and in all cases as ways of making *poetic statements*. I shall say a good deal more on the latter subject further on.

Speaking in particular as a professional music theorist, I worry a lot about the many examinations I have attended and given, in which students are certified as competent musical "perceivers" primarily on the basis of the way in which they run critical analyses of given art works, using received languages L that are not music. Sometimes a student becomes paralyzed if I go to the piano, play something, and ask: "Do you mean, like *this*?" Or the student will freeze upon being asked to clarify or defend an analytic reading by "fooling around" of this sort at the keyboard. I have often had the feeling that I *would* encounter such blockage if I *did* try to initiate such discourse with an examinee. Remarkably, there seems to be no correlation either way, between the keyboard ability of examinees and their susceptibility to this paralysis.<sup>29</sup>

I am not concerned here about advanced students of music theory proper, who are being examined in their specific proficiency at this or that technique of analysis, or in their acquaintance with the professional or critical literature. I am concerned rather with student musicians in general: they are being encouraged by our educational system to dissociate the understanding of music from its production and performance, to associate musical "understanding" with an ability to give approved responses in English, and/or in certain symbolic languages, to art works that are "given" and "there," art works whose species are well agreed-on in advance of any examination. When we certify "understanding music" on this basis, we are behaving like the authorities who certify "understanding French" on the basis of questions asked in English, to be answered in English, about pre-existing French texts. (I suppose that one can technically check off (a), (b), (c), (d), or (e) "in French" as well as "in English.") If, upon encountering a student certified as "competent in French" on that basis, one says, "Bien. Causons musique," or, "Il me faut sortir. Ecrivez-moi alors deux mots," the result may be substantial or total paralysis. The student may then protest: "I don't speak or write French, but I do have a *reading knowledge*." And the student will be justly indignant since we, the authorities ourselves, have propagated the myth that such a monster as "a reading knowledge of

29. In an upper-division analysis course I once taught, there was a student who could play the first piano sonata of Boulez very well. In the course we had been discussing a piano piece by Debussy for two weeks, when she came up with an analytic reading that I could not hear at all. I said, "I can't hear what you mean—play it and give me an idea," whereupon she replied, "I don't play the piece." "Well," said I, "I don't mean as you would on a recital; I mean as you did when you heard (such-and-such)." "Oh," she replied, "I haven't played the piece at all; I thought this was a course in *analysis*." This student was more than competent at the piano, but still paralyzed. Some students in this sort of situation play atrociously but give it their best try. On the other hand, some students who can play well also give it their best, while some who play badly freeze up (and of course blame that on a lack of keyboard ability).



French” exists—that it is possible to read French intelligently without speaking or writing it, and that the ability to answer in English questions in English (or baby “French”) about pre-existing French texts constitutes knowledge of French in some way, rather than knowledge *about* French.

Our conceiving (and encountering) “readers” of French who neither speak nor write French is just like our conceiving (and encountering) “listeners” to music who do not make music in any way. Indeed we conceive (and encounter) “fans” who watch but do not play ball games, and “audiences” for political debates who do not themselves engage in any political activity but rather watch “the politicians,” listen to “them,” and eventually—perhaps—vote. In other times and places, a region was considered “musical” if its inhabitants habitually made music, one way or another, to the best of their various abilities; nowadays and here, regional music “lovers” boast of their “world-class” orchestras (whose members probably commute), their concert series of prestigious recitalists, their improved attendance at concerts (especially expensive fund-raising concerts), their superb hi-fis, their state-of-the-art compact disc players, and so on.

And our academies are right at hand, to help the “lovers” decide what to enjoy, in their erotic-acquisitive orgies of consumption. (“Pachelbel’s Canon in D can be *yours* for only one dollar!” touts a recent advertisement. Poor Pachelbel—he thought it was his. *La domini è mobile* . . .) Just like the “ability to read” French, the “enjoyment” of music, along with its “appreciation” and to a significant degree even its “understanding” are all part of a great social swell, a movement which threatens to turn us all into critical consumers, rather than enthusiastic practitioners, of human activity. The movement is wrong. The Lord, after all, did not tell Adam and Eve to observe, understand, and appreciate the world; He told them to *replenish* it.

Naturally one cannot simple-mindedly divorce constructive creation from perceptive understanding, as if the one could occur without the other, or at least without some experience of the other. I have no wish (obviously) to dispute the value of studies in perception, nor do I much disagree with the claim of Lerdahl and Jackendoff, that “Composers and performers must be active listeners as well.” (Lerdahl & Jackendoff, 1983, p. 7). I would, however, qualify it so as to read, “Composers and performers will normally *have done* a great deal of expert and active listening, *before* attaining a state of concentrated readiness in which any specific new creative act can transpire.” Schoenberg puts the essence of my revision as compactly as one could imagine it: “Theory must never precede creation: ‘And the Lord saw that all was well done.’” (Schoenberg, 1954, p. 194).<sup>30</sup>

Schoenberg is speaking of “theory” here in the sense of “structural evaluation,” so the stress in his context falls on the word “well”: theoretical *evaluation*.

30. The quotation is from the essay, “Apollonian Evaluation of a Dionysian Epoch.”

*nation* follows creation. In the context of my present polemic, I would stress the word “saw” as much or more: first the Lord created, and only *then* did the Lord *perceive* what He had (already) done. In the same context, Schoenberg’s metaphor suggests a powerful elaboration: when the Lord is pleased by what He sees, *He responds to His perception by creating something more, or something new*. Thus:

And God said, Let the waters . . . be gathered . . . and let the dry land appear: and it was so.  
 . . . and God saw that it was good.  
 And God said, Let the earth bring forth grass . . . and the fruit tree . . . and it was so.

Genesis, 9–11

Here one could say that the Lord uses past perception as a stimulus to fresh creation, but it is equally important to put it that He uses fresh creation *as a mode of response* to his latest perception. Creation is thus a species of perception-STatement: “LOOKS LIKE it could use some grass and trees.” (And it was so.) Many composers will find this creative/perceptive rhythm familiar: one recognizes that a certain part of the composition is the way it ought to be when—and sometimes only when—*another* part of the composition begins to take shape as a consequence.

Making fresh music as a mode of musical perception—this link in the chain of perception-and-creation is missing in the perceptual theories we have so far considered, including my own p-model so far as it has been worked out as yet. Perhaps the link can eventually be forged within the context of received conceptual systems. After all, Husserl calls perception a *mental act*, and describes it as something extraordinarily creative. I do not see as yet, though, how he might distinguish and relate what we call acts of listening, acts of performing, and acts of composing, as varieties of *perceptual* response in various musical contexts.<sup>31</sup>

The link might be supplied by something like the literary theory of Harold Bloom, who asserts that “the meaning of a poem can only be a poem, but *another poem, a poem not itself*.” (Bloom, 1973, p. 70). The idea as it stands does not transfer easily to music, but that is largely because of problems attaching themselves to the word “meaning” in Bloom’s text. Suppose we modify the notion and, now using the word “poem” to mean any crafted artwork, claim that “a poem can only be perceived in the *making* of another poem, a poem not itself.”

In that case, when we play excitedly at the piano upon returning home after a stimulating concert we are not executing an *aïd* to perception, or to

31. Avenues of phenomenological investigation in this regard are suggested by Lochhead and Fisher (1968, pp. 23–39).



the memory of perception; rather we are *in the very act* of perceiving, the other poem being our impromptu performance. The same is true when we play fascinatedly again and again over the opening of the finale to the *Appassionata*; we are *not* matching the fingers and positions of our right hands to a preconceived "perception" of the theme; rather we are *in the act* of perceiving the theme as we move the parts of our bodies to play it; the performances that we essay, if sufficiently competent in gesture, embody a process that is our act of perception. And Beethoven's act of making his c minor Piano Concerto was inter alia his perception, at that time, of Mozart's c minor Concerto. The score, his concomitant utterance, was accordingly a species of perception-STatement. (His act was and is—in retention—many other things too; the act was/is not one object at one place at one time in phenomenological space–time.) Certain attested remarks made by Beethoven about Mozart's piece do not interest us so much, as records of his various perceptions. Our interest is not less because the remarks are verbal, but because they are inferior to Beethoven's concerto as "other poems."

That feature of Beethoven's verbal remarks highlights an important difference of the post-Bloomian view from the Bloomian one. The post-Bloomian view does not exclude critical utterances as poetry. No more does it exclude acts of analysis. The making of an analysis can be an act of perception, in this view, to the extent—and only to the extent—that the analytic report which traces the deed of perception is itself "another poem."

The broad interpretation of "poem" allows us to admit traditional varieties of interpretative studies into the canon of critical perception, thereby weakening the force of Bloom's original assertion while expanding its domain.<sup>32</sup> The broad interpretation specifically admits under the post-Bloomian rubric not only the score of Beethoven's c minor Concerto, and not only my playing the theme from the finale of the *Appassionata* this way and that, but also analyses like those of Lerdaahl and Jackendoff, or like my discourse involving the syntax of Macbeth's sentence. In doing so, the critical approach brings sharply to our attention the need for studies in *the poetics of analysis*. To the degree that analytic records of musical perceptions are poems, ski tracks tracing the poetic deeds that were the perceptions themselves, then critics—if not analysts—must concern themselves with the poetic resources at hand, that is, the sorts of poetic spaces analysts inhabit and the varieties of poetic media through which they move in executing their deeds.

I take this search for poetics to be the core of the critical position projected by James Randall, Elaine Barkin, and Benjamin Boretz in recent

32. I phrase my text here so as to connect with Jonathan Culler's (1981, pp. 14, 107–111) critique of Bloom, interpretation, and the dissonances between them.

years; their writings "about" music merge seamlessly at various moments with critical theory, analysis, more-or-less-traditional "poetry," and verbal musical composition that has close connections with the more explicitly "compositional" activities of Kenneth Garburo and Robert Ashley, among others.<sup>33</sup> Also concerned with poetics, and closer to Bloom's original sense of "other poems," are the Functional Analysis of Hans Keller (1958), whose ideas considerably antedate Bloom's, and David Antin's "talk poem" called "the death of the hired man," performed at the Baxter Art Gallery at Cal Tech in 1982 on the occasion of Shah Armanian's construction of a poetry lounge (a version of a New England schoolroom, with handcrafted wooden benches and desks, whose tops have lines from Robert Frost's "Mending Wall" stencilled across them)." (Perloff, 1984, p. 57).

To characterize the cited writings as *Versuche* toward the poetics of analysis is not to succumb to a superficial impression about their "poetic" manner in the vulgar sense. A casual reader of Randall, Barkin, and Boretz might easily be misled by such an impression, particularly considering the positions they occupy in a dialectic that is at once intellectual, cultural, and historical, a dialectic that involves them along with the writings of Milton Babbitt and the history of PNM. In a superficial view of those relationships, Babbitt is "scientific" and "objective," while the next generation is "poetic" and "subjective." The superficial view is not exactly wrong, but it is very far from adequate to engage the critical issues at hand, issues which it hopelessly trivializes. The writings of Babbitt are as much poems, in the broad interpretation of the post-Bloomian view, as are the writings of Randall. In that view, the issue is not *whether* there shall be poems, but rather what *sorts* of poems there shall be, and by what criteria they are to be valued.

33. Except for the works of Ashley, the recent writings and the compositions are represented by contributions to *Perspectives of New Music*, starting with the Spring/Summer 1972 issue, which contains Randall (1972). Among other things, the article projects an attempt to build a very new sort of perceptual Context in which to hear Alberich's opening passage within *Götterdämmerung*, Act II, Scene 1. Barkin is represented by a number of substantial pieces in the subsequent issues of PNM. Of special interest in the present connection is "play it AS it lays," which records a perception of Arnold Schoenberg's piano pieces, opus 19, number VI (vol. 17, no. 2, Spring-Summer, 1979, pp. 17–24). The enormous labors of love through which Benjamin Boretz influenced the journal over many years are only hinted at in his modest editorial apologia, "Afterward: a foreword," (vol. 22, Fall-Winter, 1983 and Spring-Summer, 1984, pp. 557–559). Kenneth Garburo is celebrated by a large number of contributions to volume 18 (Fall-Winter, 1979 and Spring-Summer, 1980, pp. 7–256). The contribution by Garburo himself is a lecture/composition/performance/talk poem ("Brain: . . . Half A Whole," pp. 215–256). The reader may want to approach it, or to review it, after perusing the discussion of David Antin and Marjorie Perloff later in this article. Pieces by and about Robert Ashley appear in *Formations*, vol. 2, no. 1 (Spring, 1985), pp. 14–63. Musicians may not be familiar with this journal; it is published in Madison by the University of Wisconsin Press.



Marjorie Perloff focuses the issues very clearly. At the opening of her essay (Perloff, 1984), she quotes some traditional lamentation by Christopher Clausen, who has these things to say, among others:

Few doubt that the rise of science has had something to do with displacing [poetry] as a publically important vehicle for those truths that people accept as being centrally important. The attempt to persuade the reading public that figurative, ironic, or connotative modes of thought and discourse retain their value in an age of computer language has not been notably successful. . . . [educated Americans today] undoubtedly believe that anything of real importance can be better said in prose.

Perloff examines brilliantly "the assumptions behind this statement. . . . not untypical of discussions of poetry in our leading journals." The assumptions are: "First, that 'poetry' and 'science' have mutually exclusive modes of discourse. Second, that 'poetry' is the opposite of 'prose.' Third, that poetry once served and should serve as a vehicle for 'truth' . . . And, fourth, that poetry is inherently 'figurative, ironic, or connotative' and, as such, stands opposed to 'computer language,' which is presumably non-figurative, straightforward, and denotative. . . . the implication is that the 'truth' of poetry is one of subjectivity, of personal feeling and experience." (Perloff, 1984, p. 43).

These observations launch a virtuoso exercise in critical scholarship, including perceptive analyses of poetry by Louis Zukofsky and Gertrude Stein, that culminates in the extended discussion of Antin's talk poem on Frost. Toward the end of her critique, Perloff picks up her original theme:

By this time, the audience has been brought round to consider, not only the connection between frost's "hired man" and Antin's, but also between the status of Armaiani, who was *hired* [emphasis mine D. L.] to design the poetry lounge, and Antin who was hired to speak in it. . . . Antin's casual talk has been, all along, . . . a critique of Frost's way of writing poetry with reference to Antin's own poetic, his faith that poetry must be based on actual observation and natural language. . . . the text puts forward that poetic not by any kind of general statement, but through a series of narratives, images, and discursive patterns so that we are finally not quite sure what we have witnessed: prose discourse or poetry? Lecture or story? Philosophical argument or sleight-of-hand? . . . Antin does not regard "computer language" or "the rise of Science" as the enemy; . . . and although he regards "truths" as indeed of central importance, he is more interested in questions of appropriateness (what does it mean to *do x* [emphasis mine D. L.] in this context?) and inconsistencies [sc. rabbits and ducks D. L.] than in what Clausen calls "the truths of moments, situations, relationships." (Perloff, 1984, pp. 60–61)

My post-Bloomian proposition, that the perception of a poetic work resides in the (active) making of another poetic work, a work that might be a "performance" in traditional terms, is not such an esoteric idea as the barrage of scholarship over the last few pages may have made it seem. To help convey the point, I will copy out a wonderful poem:

—Accori accori accori, uom, a la strada!  
—Che ha, fi' de la putta?—I son rubato.  
—Chi t'ha rubato?—Una, che par che rada  
come rasoio, si m'ha netto lasciato.  
—Or come non le davi de la spada?  
—I dare' anzi a me.—Or se' impazzato?  
—Non so; che l' dâ?—Così mi par che vada:  
or t'avess' ella cieco, sciagurato!  
—E vedi che ne pare a que' che l' sanno?  
—Di' quel, che tu mi rubi.—Or vâ con Dio!  
—Ma ando pian, ch' i vo' pianger lo danno.  
—Che ti diparti?—Con animo rio.  
—Tu abbi i danno con tutto i malanno!  
—Or chi m'ha morto?—E che diavol saccio?  
—Cecco Angiolieri (1250–1319)<sup>34</sup>

In trying to "perceive" the poem so that it makes sense to you, are you not taken by an urge to *perform* it—to read it aloud and act the roles of the three characters, with appropriate vocal modifications? I am. So far as I kinetically sense the vigorous movements of the characters while they converse—which I do to a considerable degree as I am reading their parts—I am also trying to *direct* the scene for a theatrical production, as part of my mode of perception. This is not to say that I would consider irrelevant to my perceptions closely reasoned studies of the syntactic structure, the historical contexts of thirteenth-century Italy (including the rise of the vernacular in literature and the development of the sonnet), the intrinsic sound-structure of the text, the rhythms in the changes of speakers, the ways in which those rhythms counterpoint the regularities of the sonnet "form," contributing thereby to the fantastic modulation and theatrical *comicità* when the woman

34. The text is taken from Kay (1958, p. 68). Kay provides a "plain prose translation": "Run, run, man, along that street!" "What's wrong, whorson?" "I've been robbed." "Who robbed you?" "A woman, who shears like a razor, she's left me so bare." "Well, why didn't you have at her with your sword?" "I'd sooner turn it on myself." "Are you mad?" "I don't know; what makes you think so?" "The way you are going on: it's as good as if she had blinded you, you wretch!"

"See how it appears to people who understand?" "Let them know that you rob me." "O go away!" "I'm going, but slowly, for I must weep my loss." "How do you leave me?" "In bad heart." "Well, you can suffer your 'loss' and every illness with it, for all I care!" "Who is killing me now?" "How the devil should I know?"



herself appears on the scene (talking about perception), and so forth. All of these studies would help clarify, focus, organize, and intensify my perceptions. But they would not shift the essential *modes* of those perceptions. At least I do not think they would: I do not imagine myself “outgrowing” my urge to recite, act, and direct the three characters, once I acquire “sufficient” reflective knowledge about (or Hegelian understanding of) the play that contains them. I only imagine my performance becoming richer, denser, more compelling, more “true.” The reader who was interested in my earlier analysis of Macbeth’s soliloquy may have experienced such a response there: to the extent one begins by acting or directing Macbeth in response to the text, to that extent one continues perceiving the passage in the same mode; fresh analytic insight (e.g., about “This” or “multitudinous”) will not wean one away from a performance mode; it will only improve the performance, or at any rate stimulate more ambitious performances.

A skeptic could point out that I am discussing a play (by Shakespeare) and an unusually theatrical sonnet (by Cecco); it is only natural to respond to *these* works in a theatrical mode. Fair enough, and I do not want to promote *a priori* any one mode of perception as universally “better” than any other. Only I believe we are in some danger, these days, of ignoring the more productive modes of perception; I think we underestimate seriously the extent to which those modes are alive and active even in situations where their pertinence is not so immediately apparent as it is with Shakespeare and Cecco, situations where we think of ourselves as “readers,” not as speakers, writers, actors, and directors; as “listeners,” not as players and composers.<sup>35</sup>

To illustrate my point, I shall ask you to imagine the following scenario. You are a young warrior of ancient Rome, taking flight from an armed mass of pursuing enemies. Desperately seeking refuge, you burst unwittingly into the Temple of the Vestal Virgins, a shrine forbidden to males under penalty of death. Amazed and irate priestesses surround you. Collecting yourself as best you can, you turn to them and say—what?

Well you certainly do not say “Pardon ME!” presumably tipping your helmet to the ladies and looking about surreptitiously for a convenient exit. At least you do not say that unless you are the person who composed the College Board Examination in Latin that I took some thirty-five years ago. Of course the question on that person’s examination was not “What did the young man say to the Virgins?” but rather “What is the correct translation of ‘*Ignoscite*’ in the above passage?”

35. The cultural–historical bias behind our underestimation is explored by Barish (1981).

We were offered five translations from which to choose. When I read “Pardon me” as the first of the options, I broke out laughing in the examination hall, drawing some indignant attention from the priests of *that* ritual. How nice, I thought, an examiner with a sense of humor. Then, as I read the other four “answers,” the awful truth dawned: “Pardon me” was in fact the “correct” answer. Indeed, according to the question posed, I was to support “Pardon me” not only as a *plausible* translation for “*Ignoscite*” in the context, but as a *correct* translation, and not only a correct translation, but *the* correct translation.

The examiner, of course, had thought “PARDON me,” or more likely had not been thinking (perceiving) *anything at all* in the theatrical modes my scenario tries to suggest, the modes in which I had been taking in the story as best I could under the examination conditions, both by temperament and because I was myself a young man in a competitive situation being judged by older authorities. The examiner had certainly not stopped to consider all the connections of the expression “pardon me” in modern English usage, and particularly in *conversational* usage. (I doubt the examiner perceived the context in which “*Ignoscite*” appeared as a *conversation*.) Someone taking in (perceiving) the Latin passage as an actor or a playwright would have written “Forgive my blasphemy,” or “Grant me forgiveness,” or something of the sort. These translations project the tone of high-minded civic service and civic virtue that is implicit in the stage-set, the costumes, and the events of the drama. “Pardon me,” in conversation, is at best bourgeois British colloquialism. When read as “Pardon ME!” it suggests, even worse, the world of slapstick comedy, a movie starring Steve Martin (“Well excuse ME”) or Charlie Chaplin (who would be first rate at the helmet-tipping bit, not to mention the escape scenes). In the theatrical modes, “Pardon me” is just as wrong a translation for “*Ignoscite*” here as “One never know, do one?” and it is wrong in exactly the same respects.

The examiner, however, was not testing for the ability to project oneself imaginatively, using a Latin text, into the world of ancient Rome, nor for the ability to bring into such an imaginative reconstruction the linguistic–conceptual matrices of one’s own culture. What, after all, does this have to do with an examination “in Latin”? As Perloff would say, note the assumptions. First, an examination “in Latin” is an examination in “reading” Latin, which is separable from conversation, speaking poetry, acting a drama, or writing original Latin text. Second, “reading” amounts to “grammar” and “translation”; as a result the examination “in Latin” becomes an examination *in English about* Latin. Third—and in spite of that—an effective command of English is not prerequisite, since “translation” consists of selecting from among five given choices “the correct answer.” Subassumptions: five choices are plenty; a translation is an “answer” to some implicit question; each answer is “correct” or “wrong”; only one is



"correct" and it is "*the*" correct one. Fourth, an examination "in Latin," can take place in a hushed, cramped setting where the student can neither read aloud nor move about in kinetic response to the texts at hand; sounds and gestures have nothing to do with "Latin."<sup>36</sup> Saddling ourselves with all these assumptions, we then wonder why so many young people who get our schooling perceive something in popular art that they do not find in "the classics"<sup>37</sup>

Let me put the matter this way: the gesture and English utterance that you make when you act the young Roman in his predicament are not phenomena that are *separable* from your understanding of what "*ignoscite*" can mean in Latin. Just so, the vocal and bodily gestures that you make when you act Macbeth saying "This" are not phenomena that are separable from what you perceive in the scene as a playgoer or reader.<sup>37</sup> Just so, the way you sing or conduct the first four notes of "Joy to the world" is not something that is separable from the way you perceive structural functions for the notes on which you sing "Joy" and "world." Likewise, your perceptions of *Morgengruß* are not separable from how long you wait on the *fermata* at measure 15 before it feels right to go on, when you sing or accompany the song, or when you transcribe it for piano solo. Your perceptions of the song are likewise not separable from how long you want to dwell on the lonely B flat in the piano at measure 12, before allowing the next note of the accompaniment to enter. (Our formal perceptions  $p_1$  through  $p_9$  intermesh with just such performance activities.) And your perceptions of the "XDY-and-YDX" cadence in *Die Walküre* are not separable from the way you conduct the *fp* dynamic and the change of tempo, nor is either of these separable from the way in which you act Sieglinde's discovery at this moment that her adulterous-lover-to-be, the savior promised her by her father, is in fact her own long-lost brother.<sup>38</sup>

36. How many people does one find in modern Italy who do not use gestures as part of their language? Should we assume that earlier inhabitants of the region were more constrained? Did their fascination with rhetoric, when they discovered it, reflect a desire to keep still while they spoke? Did Cicero deliver his speeches without moving a muscle? In court? In the Senate? Or did he just mail Xerox copies of the written texts to the jurors and the Senators, so that they could "read" the speeches as our high-school students do?

37. I make contact here again with the sorts of ideas expressed by Lochhead and Fisher (1982).

38. Wagner's stage directions say that she tears herself loose from Sigmund's embrace in the most extreme intoxication, and confronts him as a model for comparison ("reißt sich in höchster Trunkenheit von ihm und stellt sich ihm gegenüber"). Each twin has been ordained by Wotan to be the mirror and (dominant) support of the other; Sieglinde comes to realize that at just this moment.

All of Sieglinde's deceptive cadences in G are laden with this dramatic import, as are all the G cadences through Act I. Most of them are deceptive. The deceptive ones typically involve harmonies including an E and/or a C# and/or a B<sub>b</sub>, as well as a G. The dramatic "pres-

The musical examples just above involve text and/or drama. That helps me make them vivid for non-musicians—and for musicians too, in a different way. Still, the reader who reviews my analytic discussions of the Schubert, Handel, and Wagner passages will find that I have said plenty about their purely musical analysis that is inseparable from the purely musical performance issues raised in the preceding paragraph, plenty beyond the literary and theatrical contexts I have also discussed. Those contexts are naturally also appropriate, and enrich the purely musical discussion.

Indeed it is quite possible to approach a non-texted work of music "theatrically" as well. To illustrate the point, I shall coach you in the dramatic role of "F#G<sub>b</sub>", within the drama that is the first movement of Beethoven's Fifth Symphony. In one of your dual personalities you are F#, fourth degree or subdominant of C. C is the tonic of the piece and you are its *antipode* on the clock-face of the chromatic scale or the circle of fifths.

You enter magnificently, surrounded by a prolonged hammering diminished-seventh chord that is the goal of the entire musical impetus since the first theme got underway. Your chord is the first fortissimo of the piece and the first *tutti* of the piece. (Drum and trumpets are trying in vain to maintain the tonic C against your might.) Your chord is also the most serious chromatic excursion of the piece so far; the earlier tonicizations of iv were local affairs. You enter here wearing your F# cloak, as leading tone to G; but you abruptly hurl the cloak away and reveal yourself in a suit underneath as G<sub>b</sub>, upper neighbor to F. Your diminished-seventh chord resolves not as V-of-(V-of-C) but as V-of-(V-of-E<sub>b</sub>). By your mighty feat of enharmony, you single-handedly achieve the modulation from C minor to E<sub>b</sub> major, from the first thematic group of the exposition to its second thematic group. A new theme enters directly you have resolved, with the solo horn call.

In the reprise you replay this whole scene, with a big variation. You re-enter on your climactic diminished seventh chord as before. Everyone is waiting for you to throw off your F# cloak and reveal yourself as G<sub>b</sub>. You throw off your F# cloak all right, but *now* you are wearing an F# suit beneath it! You resolve as leading-tone to G, and your chord resolves as V-of-

ence" of Wotan throughout Act I is often missed in production, both dramatically and in E-bass events of the music beyond the Valhalla theme itself in that key. Audiences must wonder why the lovers can't get down to business sooner. In Act III, Brünnhilde finally gives Sieglinde a good G cadence, as she predicts the birth of Siegfried. Sieglinde can thereupon come out with the Redemption theme in G—her big moment both dramatically and vocally. But the Redemption cadence is spoiled and turned deceptive by the E in the bass and the E-E<sub>b</sub>-B<sub>b</sub>-C# in the trombones that undermine the cadential Gs in the drum and bass trumpet, turning them ominous. Sieglinde must flee from her enraged father, also Brünnhilde's enraged father, who is now clearly identified as the source of the deceptive G cadence, the E in the bass, and the diminished-seventh harmony.



(V-of-C) after all. The horn cannot deal with this, and the bassoons must manage the horn-call theme as best they can. You have now single-handedly warded off the modulation of the exposition, and kept the reprise in C.<sup>39</sup>

During the development you display even more extraordinary powers. After the first theme has gotten underway in F minor, there ensues a sequence whose local tonics move through the circle of fifths from F, through C, to G minor. F and G are your potential tones of resolution in your dual capacities as G $\flat$  and F $\sharp$  respectively; C is your antipode. Once the music gets to G minor, it starts to develop motivically; as the *Entwicklung* tightens, the bass moves by steps up the G minor scale until it reaches—you as F $\sharp$ ! Thereupon a new motivic sequence begins, using material from the second thematic group. This sequence moves *back* through the same segment of the circle of fifths, via the dominants of G, C, and F minor. Once the music gets to F minor, it starts to develop motivically once again; as the *Entwicklung* tightens, the bass moves stepwise up again. The steps up begin in F minor; then, pivoting through B $\flat$  minor, the tonic shifts and the steps finally arrive at a tonicized—you in your capacity as G $\flat$ ! F has now become your leading tone.

And then, after all, you throw off your G $\flat$  cloak and reveal yourself enharmonically as F $\sharp$  all the time! The enharmonic shift takes place when the “becalmed” accordion-type alternations of the you-minor triad in the winds and strings shift to a you-six-three harmony that is spelled as a D triad in first inversion. The dynamics here, piano, *sempre diminuendo*, and finally pianissimo, are unique in the movement and *antipodal* to the forte and fortissimo bluster of C minor. Also antipodal is the dead calm, breathing, riding-gently-up-and-down-on-little-waves effect, compared to the frenzied *Sturm and Drang* of C minor. This is “you-country,” if one may say that of a phenomenon so oceanic. From the first-inversion D harmony, the way back to C minor is clear for the reprise. You leave your “you-country” as a member of V-of-(V-of-C) after all, playing just the part you refused to assume upon your first-act entrance. (But your big *coup* in the reprise is still to come.)

Now that I have coached you in acting F $\sharp$ /G $\flat$ , do you not sense the co-gency of the theatrical mode in connection with how you might play or conduct the pertinent music, and how you might make analytic STatements about it? Is not the way you “play” F $\sharp$ /G $\flat$  (in both senses of the word) inseparable from things-that-you-perceive in Beethoven’s piece? Would not “playing” the role of E $\flat$ , or the role of F, or other roles, similarly engage things-that-you-perceive in the piece? (Some things would sound different to different characters.)

39. Atlas (1983, pp. 26–27, 32–33) discusses these two passages.

My skeptic will point out that this symphony is an exceptionally “dramatic” one, and ask how my contentions would fare in connection with *less* dramatic music. Here, finally, I must call a halt. As I said before, I am not proclaiming the virtues of any one mode of perception over all others. I am only concerned that our society encourages us to ignore some of those modes. To the skeptic above I say, “Find me a piece we both like that you are convinced is neither poetic nor dramatic. Then we shall discuss the matter further.”

## References

- Atlas, R. E. *The diachronic recognition of enharmonic equivalence: A theory and its application to five instrumental movements by W. A. Mozart*. Ph.D. dissertation, Yale University, New Haven, CT, 1983.
- Barish, J. *The anti-theatrical prejudice*. Berkeley: University of California Press, 1981.
- Barkin, E. Play it as it lays. *Perspectives of New Music*, 1979, 17(2), 17–24.
- Bloom, H. *The anxiety of influence*. New York: Oxford University Press, 1973.
- Boretz, B. Afterward (i: a foreword). *Perspectives of New Music*, 1983/84, 22, 557–559.
- Browne, R. The dialectic of good continuation in tonal music. *Music Analysis*, 1985, 4(1/2), 5–13.
- Clifton, T. *Music as heard: A study in applied phenomenology*. New Haven: Yale University Press, 1983.
- Cone, E. T. (Ed.). *Roger Sessions on music*. Princeton: Princeton University Press, 1979.
- Cook, N. [Review of Clifton, *Music as heard*]. *Music Analysis*, 1983, 2(3), 291–294.
- Culler, J. *The pursuit of signs*. Ithaca, NY: Cornell University Press, 1981.
- Dreyfus, H. L., & Hall, H. *Husserl, intentionality, and cognitive science*. Cambridge, MA: The MIT Press, 1982.
- Forde, A., & Gilbert, S. E. *Introduction to Schenkerian analysis*. New York: W. W. Norton & Co., 1982.
- Freud, S. *Vorlesung zur Einführung in die Psychoanalyse*. Berlin: Gustave Kiepenheuer Verlag, 1955.
- Gaburo, K. Brain: . . . Half a whole. *Perspectives of New Music*, 1979/80, 18, 215–256.
- Gadamer, H. G. *Hegel's dialectic* (P. C. Smith, Trans.). New Haven: Yale University Press, 1976.
- Gretz, T. A. Listening as intuiting: A critique of Clifton's theory of intuitive description. *In Theory Only*, 1984, 7(7,8), 3–21.
- Hasty, C. Rhythm in post-tonal music: Preliminary questions of duration and motion. *Journal of Music Theory*, 1981, 25(2), 183–216.
- Husserl, E. *The phenomenology of internal time consciousness* (J. S. Churchill, Trans.). Bloomington: Indiana University Press, 1964.
- Ilde, D. *Listening and voice: A phenomenology of sound*. Athens, OH: Ohio University Press, 1976.
- Kay, G. R. (Ed.). *The Penguin book of Italian verse*. Harmondsworth, Middlesex: Penguin Books Ltd., 1958.
- Keller, H. FA No. 1: Mozart, K. 421. *The Score*, 1958, 22, 56–64.
- Kramer, J. New temporalities in music. *Critical Inquiry*, 1981, 7(3), 539–556.
- Laske, O. Toward an explicit cognitive theory of musical listening. *Computer Music Journal*, 1980, 4(2).
- Lerdahl, F., & Jackendoff, R. *A generative theory of tonal music*. Cambridge, MA: The MIT Press, 1983.
- Lewin, D. Some investigations into foreground rhythmic and metric patterning. In R. Browne (Ed.), *Music theory: Special topics*. New York: Academic Press, 1981, pp. 101–136.



- Lochhead, J. *The temporal structure of recent music: A phenomenological investigation*. Ph.D. dissertation, State University of New York at Stony Brook, 1982.
- Lochhead, J., & Fisher, G. The performer as theorist: Preparing a performance of Daria Semegen's Three Pieces for Clarinet and Piano (1968). In *Theory Only*, 1982, 6(7), 23-39.
- Mattheson, J. *Der vollkommene Capellmeister*. Hamburg: Christian Herold, 1739.
- Miller, I. *Husserl, perception, and temporal awareness*. Cambridge, MA: The MIT Press, "A Bradford Book," 1984.
- Minsky, M. Music, mind, and meaning. In M. Clynes (Ed.), *Music, mind, and brain*. New York: Plenum, Press, 1982, pp. 1-19.
- Narmour, E. *Beyond Schenkerism*. Chicago: University of Chicago Press, 1977.
- Perloff, M. Postmodernism and the impasse of lyric. *Formations*, 1984, 1(2), 43-63.
- Randall, J. Compose yourself—a manual for the young. *Perspectives of New Music*, 1972, 10(2), 1-12.
- Riviere, J. *A general introduction to psychoanalysis*. New York: Washington Square Press, 1952.
- Rowell, L. The subconscious language of musical time. *Music Theory Spectrum*, 1979, 1, 96-106.
- Russell, B. *A history of Western philosophy*. New York: Simon & Schuster, 1945.
- Schenker, H. [Free composition (E. Oster, Trans. & Ed.)]. New York: Longman, 1979.
- Schoenberg, A. *Structural functions of harmony*. New York: W. W. Norton & Co., 1954.
- Strunk, O. *Source readings in music history*. New York: W. W. Norton & Co., 1950.
- Temney, J. [Review of Clifton, *Music as heard*.] *Journal of Music Theory*, 1985, 29(1), 291-294.
- Zalino, G. [The art of counterpoint, part three of *Le istituzioni harmoniche*, 1558 (G. A. Marco & C. V. Palisca, Trans.)]. New Haven: Yale University Press, 1968.

## Similarities among Transformed Melodies: The Abstraction of Invariants<sup>1</sup>

EDWARD C. CARTERETTE, DONALD V. KOHL, & MARK A. PITT  
*University of California, Los Angeles*

In studying the abstraction of musical ideas from diverse invariants, six-note melodies of varying note durations and note intensities were used as prototypes. Four types of transformations on a prototype distorted each of four musical components: contour, interval, loudness, and duration. In an acquisition phase, listeners heard simple transformations on a single prototype, but in recognition heard both simple and compound transformations as well as the prototype, which had been unheard in acquisition. Predictions were borne out, namely, that both prototypes and simple transformations were falsely recognized with greater certainty than any other transformed melodies; and latencies of recognition of the prototypes, an alternative measure of certainty, were shorter than latencies of recognition of any other transformed melodies. It is argued that the methods used enable the examination of the properties of musical transformation spaces.

THE abstraction of invariant relationships underlies the perception and recognition of music. Invariants occur along numerous dimensions. Pitch, chroma, rhythm, contour, and intensity are but a few of these.

Deutsch (1969) counted six major abstractions necessary for the perception of music. These included: the perception of the similarity of tones separated by octaves, the perception of the similarity between a chord and its inversions, and the recognition and transposition of simultaneous intervals, chords, tunes, and chord sequences.

Requests for reprints may be sent to Edward C. Carterette, Department of Psychology, University of California, Los Angeles, California 90024.

<sup>1</sup>This paper is dedicated to the memory of Donald V. Kohl (1960-1984), and is based on his Undergraduate Honors Thesis presented to the Department of Psychology in May, 1983. Kohl's thesis, which was awarded high distinction, was supervised by Edward C. Carterette and Andrew W. Christensen. We thank the Committee on Research, UCLA, and the Regents of the University of California for financial aid; our listeners, Theodore H. Bell for help with programming and musical questions; and Caroline B. Monahan for advice on musical issues. Some of our findings were reported at the 106th Meeting of The Acoustical Society of America, in San Diego, California, November, 1983.