On Jazz Analysis: Schenker, Salzer, and Salience

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Abstract

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This dissertation explores the significance of the Salzerian analytical tradition with respect to both the Western classical and jazz idioms. The first half investigates issues of salience and subjectivity in both intuitionist and formalist approaches to reductive analysis of classical repertoire. I argue that intuitionist analysis in the Salzerian tradition of late nineteenth- and early twentieth-century repertoire is both valid and necessary, despite its resistance to systematization and other criticisms that have been raised.

The second half of the study applies these lines of inquiry to jazz. As in the classical idiom, a strict Schenkerian approach to jazz works best when applied to a certain segment of the canon. A less strict approach, and one according increased weight to salience (after Lerdahl), is required to adequately address repertoire falling outside of this limited scope. The value of jazz analysis in the Salzerian tradition is evidenced in part by a transcription and analysis of a complete performance of "Green Chimneys" by the Thelonious Monk Quartet, that which appears on Columbia Records' 1996 reissue of *Straight, No Chaser* (1967). This analysis reveals sophisticated large-scale organization, including motivic parallelism operating on all structural levels—that of a complete single-chorus improvisation, a complete multi-chorus improvisation, the solo section taken as a whole, and the composition itself, as well as various lower levels.

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CHAPTER 1

SCHENKER, SALIENCE, AND SUBJECTIVITY

This dissertation explores the significance of the Salzerian analytical tradition with respect to both the Western classical and jazz idioms. Chapter 1 and Chapter 2 investigate issues of salience and subjectivity in both intuitionist and formalist approaches to reductive analysis of classical repertoire. In Chapter 2, I argue that intuitionist analysis in the Salzerian tradition of late nineteenth- and early twentieth-century repertoire is both valid and necessary, despite its resistance to systematization and other criticisms that have been raised.

Chapter 3 applies these lines of inquiry to jazz. As in the classical idiom, a strict Schenkerian approach to jazz works best when applied to a certain segment of the canon. A less strict approach, and one according increased weight to salience (after Fred Lerdahl), is required to adequately address repertoire falling outside of this limited scope. The value of jazz analysis in the Salzerian tradition is evidenced in part by a transcription and analysis of a performance of "Green Chimneys" by the Thelonious Monk Quartet. This analysis reveals sophisticated large-scale organization, including motivic parallelism operating on all structural levels.

The first half of the present chapter is concerned with establishing the basic relationships amongst Schenkerian analysis, salience, subjectivity, intuitionism, and formalism (particularly the work of Lerdahl and Ray Jackendoff). Following a general review of the concept of salience is an examination of the relationship between the writings of Lerdahl and Jackendoff and the rhythmic work of William Rothstein and of Carl Schachter. The work of these scholars developed concurrently, and their ideas cross-fertilized. Rothstein and Schachter maintain that

their writings on rhythm merely explicate that which is implicit in Schenker's own oeuvre. The work of Lerdahl and Jackendoff serves a similar clarificatory function, but it is more explicit due to its formalist orientation. Although they generally do not characterize their theory in such fashion, Lerdahl and Jackendoff do acknowledge on one occasion that their work is essentially a formalization of Schenkerian theory. This relationship is carefully examined, as it is significant for a discussion of the Salzerian tradition vis-à-vis Lerdahl's *Tonal Pitch Space*, which occurs at the end of Chapter 2.

The latter half of Chapter 1 is focused on the relationship between salience and subjectivity, particularly with respect to the selection of the primary tone. Much attention is given to Charles Smith's extended essay, "Musical Form and Fundamental Structure: An Investigation of Schenker's *Formenlehre*," due to its concern with the subjectivity of primary-tone selection and its engagement with the issue of "problematic compositions." I argue that there is a tension in Smith's discourse between his openness to non-traditional background structures and his desire for the process of discovering those structures to be free of ambiguity or subjectivity. Smith's emphasis upon objectivity reflects the influence of Lerdahl and Jackendoff, but in a way that is fundamentally at odds with Rothstein and Schachter, who, while also influenced by *A Generative Theory of Tonal Music*, never abandon "artistic" decision-making based upon hearing and intuition. In choosing to reflect form—a parameter of the music that is salient—at the background level, Smith sacrifices central values of the Schenkerian approach, and also creates other problems.

I continue to explore the matter of problematic compositions in a final brief section addressing the Beach/Neumeyer and Beach/Smith exchanges of the late 1980s. Smith's contributions also raise an issue of reduction that, while epitomizing a classic misunderstanding

of traditional Schenkerian analysis, becomes more significant when considering later repertoire. Chapter 2 then begins where this chapter leaves off, discussing the issue of reduction within the context of the post-Schenkerian repertoire.

Schenker and Salience

Discourse related to Schenkerian analysis often involves the issue of salience, whether explicitly or implicitly. The concept of salience covers a wide range of parameters, which may be broadly categorized as follows: first, those that are commonly studied using hierarchical levels, such as meter and grouping; second, those that are less frequently (or less independently) examined in such fashion, such as register, timbre, and dynamics; and third, parallelism (or repetition).[1] The use of the word "salience" in this context came to the fore with the publication in 1983 of Fred Lerdahl and Ray Jackendoff's seminal work, *A Generative Theory of Tonal Music* (*GTTM*).[2] They distinguish salience from stability, which is more directly related to pitch space, tonal closure, and prolongation.

Thus the concept of salience is quite inclusive and wide-ranging. It may be easy to forget that the well-known "salience conditions," first presented in Lerdahl's 1989 article, "Atonal Prolongational Structure," are not only a list of parameters that apply to surface-level musical events ("at local levels the factors are right at the musical surface: attack, metrical position, loudness, timbre, registral position, density, and duration"); larger-scale issues are at stake as well: "At global levels the rather more abstract factors are motivic importance, position in the

[1] A notable exception to this broad classification is Fred Lerdahl's article, "Timbral Hierarchies."
[2] Lerdahl and Jackendoff do not refer to salience in their most significant earlier publication, "Toward a Formal Theory of Tonal Music."

grouping structure, and parallelism."[3] Moreover, the local observations themselves feed into larger-scale analytical structures by virtue of the various preference-rule mechanisms. For example, *GTTM*'s Grouping Preference Rule (GPR) 3, "Change," allows for changes of register, dynamics, articulation, and duration to influence decisions about grouping boundaries, which themselves then influence the time-span reductional process via the time-span reduction preference rules.[4]

Although Lerdahl and Jackendoff do not in fact use the term "salience" much in *GTTM*, the idea is implicitly present throughout. Later, in *Tonal Pitch Space* (2001), Lerdahl states that "stability far outweighs salience in making reductional choices in diatonic tonal contexts."[5] For this reason, it was perhaps not as necessary in *GTTM* to explore salience as a concept unto itself as it was in Lerdahl's subsequent investigations of later repertoire. If one were only familiar with *GTTM* and "Atonal Prolongational Structure," it might be natural to assume that salience conditions only apply to "atonal" music. However, in his discussion of salience in *Tonal Pitch Space* (which addresses a full spectrum of music from tonal to atonal), Lerdahl provides a retrospective summary of the role of salience in *GTTM*: "*GTTM*'s time-span reductional PRs can be divided into two categories, those that compare relative pitch stability of the events within a given span or region and those that compare the relative salience of events."[6] This makes it clear that indeed, everything unrelated to pitch stability falls under the umbrella of salience.

Lerdahl distinguishes between salience that is or is not psychoacoustic in nature: "In the salience category are *GTTM*'s rules that select events in a registral extreme or strong metrical position; the latter, while not psychoacoustic per se, has the effect of salience by being a locus of

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[3] Lerdahl, "Atonal Prolongational Structure," 73-74.
[4] Lerdahl and Jackendoff, *Generative Theory*, 46.
[5] Lerdahl, *Tonal Pitch Space*, 315.
[6] Ibid., 313, 315.

attention. Even the practice of representing an event just by its bass and soprano depends on the relative salience of these voices because of the psychoacoustic masking of inner parts."[7] This summary also clarifies the fact that various salience conditions were not discussed in *GTTM*: "Other salience factors not listed in *GTTM* include events that are comparatively long or loud or that are otherwise perceptually prominent in their immediate context."[8] It is important to realize that these other salience factors are in fact used in *GTTM* (recall the example of GPR 3), but they are simply not discussed as such in that particular formulation of the theory. Lerdahl's mention of register and metrical position in the previous passage probably corresponds to the following passage from *GTTM*, one of the few that actually does use the term "salience": "In assessing one's intuitions about reductions, it is important not to confuse structural importance with surface salience. These often coincide, but not always. For example the IV chord in measure 1 in 5.4 is prominent because of the relative height of the soprano and bass notes and because of its metrical position."[9]

This raises the question of the relationship between stability and salience. If the pitch stability of an event is more important than its salience in determining what is structural, and if salient events do not always coincide with stable events, then what happens when an unstable event is highly salient? By way of illustration, the authors cite a dissonant climax from the first movement of Beethoven's *Eroica* Symphony which they describe as being "perhaps the most striking moment" in this movement. Although this climax is very salient, its harmonic instability decreases its structural importance: "this event resolves into (i.e., is less stable than, and hence structurally less important than) the dominant. . . . Thus the chord . . . despite its

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[7] For more on the primacy of the outer voices, see William Rothstein's doctoral dissertation, "Rhythm and the Theory of Structural Levels," 95-96.
[8] Lerdahl and Jackendoff, *Generative Theory*, 314-15.
[9] Ibid., 108.

conspicuousness, would be deeply subordinate within a reduction of the whole movement. . . . The tension of this moment is due in part to the disparity between its surface salience and its reductional status."[10] One can perhaps detect a slightly defensive tone in Lerdahl and Jackendoff's justification of this disparity, at least when considered within the context of criticisms leveled against Schenkerians around this time (mentioned below): "We do not deprecate the aural or analytic importance of salient events; it is just that reductions are designed to capture other, grammatically more basic aspects of musical intuition. A salient event may or may not be reductionally important. It is within the context of the reductional hierarchy that salient events are integrated into one's hearing of a piece."[11]

For clarification, let us observe that musical events are not simply categorized as "salient" or "stable"; rather, both of these qualities are ever-present, in varying degrees. And although our discussion will continue to revolve around the opposition of these two concepts, salience and stability are not entirely separate from one another. For example, pitch stability in *GTTM* falls within the domain of prolongation, but prolongation is the most complex of the divisions (grouping, meter, and time-span being the other three), because it is dependent upon the others (as further explained below). Therefore, while prolongation in *GTTM* is discussed using the less formal terms of "tension" and "relaxation," corresponding roughly to dissonance and consonance in terms of pitch stability, the authors stress the rhythmic aspect of tension and relaxation as well.[12] Additionally, when they mention the "climax of a phrase" in this regard, it becomes apparent that dissonance itself (regardless of rhythm) can also increase the

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[10] Ibid., 109.
[11] Ibid., 109.
[12] Ibid., 179. In an endnote, Lerdahl and Jackendoff quote Roger Sessions: "The principle of tension and relaxation is perhaps the most important single principal of musical rhythm." Lerdahl and Jackendoff, *Generative Theory*, 340; Sessions, *Harmonic Practice*, 84.

psychoacoustic salience of a passage, as exemplified by the *Eroica* discussion (which occurs in a different section of the book).

The relationship between *GTTM* and Schenkerian analysis will be discussed more fully in the next section of this chapter. I now address John Rothgeb's 1997 contribution, "Salient Features."[13] That Rothgeb's understanding of "salience" (in the traditional sense of the word) is not limited to psychoacoustic emphasis is clear from his examples: "Once again the deeper association is *not* supported by or correlated with the most salient metric and durational features of the surface."[14] From this and the following passage, we can see that Rothgeb's reasoning is consistent with that of *GTTM*, as he argues that stable events do not always correspond with salient ones: "Once again a feature salient by conventional standards is found to be actually subordinate to a more subtle association defined by pitch—one that should be heard in spite of its apparently inferior degree of salience."[15] Also as in *GTTM*, Rothgeb contends that these oftentimes more subtle relationships of pitch space are more important to understanding the underlying structure of a composition. For example, he remarks that "salient features can mislead the ear."[16]

Rothgeb's view of the relationship between stability and salience is entirely consonant with that of Lerdahl and Jackendoff. However, while what we observed above was perhaps a defensive tone in *GTTM*'s justification of favoring salience over stability in making reductions, Rothgeb, with his reference to "conventional standards," goes much further and actually seeks to

[13] Rothgeb delivered an earlier version of this paper at the Second Annual Schenker Symposium in 1992.
[14] Rothgeb, "Salient Features," 185. Emphasis in original.
[15] Ibid., 186.
[16] Ibid., 186.

redefine—at least rhetorically—the notion of salience. By the end of the piece, he has turned the notion of salience on its head:

> All of the examples discussed share the characteristic that features salient according to conventional standards are *not* the ones that are decisive in projecting the musical message. In each case these "salient" features recede in significance by comparison to tonal shapes that are less obvious but, once perceived, more powerful. These less obvious shapes, indeed, *are* the salient features of high musical art.[17]

Rothgeb's apparent redefinition of a familiar concept is of course a common Schenkerian technique (consider Schenker's approach to form, for example), though one that has frustrated various scholars due to the moralistic tone that sometimes results.[18] Nonetheless, Rothgeb was certainly justified in responding to the litany of misguided complaints voiced in decades previous. His essay opens by citing one of these, Joseph Kerman's *Contemplating Music: Challenges to Musicology*: "Schenkerian analysis repeatedly slights salient features in the music."[19]

Phrased in almost the exact same fashion is an objection raised by Charles Rosen, in his 1971 review of the reprint of Schenker's *Five Graphic Music Analyses (Fünf Urlinie-Tafeln)*: "It is not merely that one note of Schenker's basic line may last one second and another a full

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[17] Ibid., 196. Emphasis in original.

[18] For example, see Russ, "On Schenkerism," 272. See also Nicholas Cook, "Schenker's Theory of Music as Ethics"; and idem., "Music Theory and 'Good Comparison': A Viennese Perspective," 123-24. The ethical subtext of Schenker's (and sometimes Schenkerian) discourse, coupled with its dogmatism, has also caused some scholars to perceive hypocrisy in it. For instance, each of Richard Cohn's three essays from 1992, one co-authored with Douglas Dempster, explore the theme of hypocrisy, frequently in terms of the disconnect between analytic practice and theory about salience and stability. See Cohn, "The Autonomy of Motives in Schenkerian Accounts of Tonal Music," idem, "Schenker's Theory, Schenkerian Theory: Pure Unity or Constructive Conflict?," and Cohn and Dempster, "Hierarchical Unity, Plural Unities: Toward a Reconciliation."

[19] Rothgeb, "Salient Features," 181; Kerman, "Contemplating Music," 82.

minute in the complete piece, but that Schenker often minimizes the salient features of a work."[20] Not surprisingly, this passage was also targeted in a Schenkerian article involving salience—Schachter's landmark 1976 essay, "Rhythm and Linear Analysis: A Preliminary Study," the first in a series of three articles published in *The Music Forum*.[21] In a later section of this essay entitled "Duration and Form," Schachter refers to "the articulation of a piece of music into phrases, sections, and parts," mentioning in an endnote that these are "probably among the 'salient features' of a composition that, according to Rosen, Schenker minimized."[22] We can clearly see here that Schachter too regards salience as being widely inclusive.

Schachter's concept of rhythm is similarly broad, encompassing not only local but also global temporal aspects of a piece. Salience, then, may in a sense be regarded as including all that is in the realm of rhythm, whereas stability deals with the realm of pitch.[23] Although this is of course a simplification, it is interesting to note the ways in which salience conditions are rhythmic. For example, recall our mention of GPR 3, "Change." While this rule deals with

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[20] Rosen, review of *Five Graphic Music Analyses*, 34. This is a form of what I consider to be the classic misunderstanding of Schenkerian analysis, that it merely reduces away interesting details (this issue is discussed in detail at the beginning of Chapter 2). It is interesting that Kerman should still be making this argument in 1985, although he was not alone in doing so (Michael Russ's 1993 article, "On Schenkerism: A Closed Circle of Elite Listeners?," uses this reasoning as well, although in a somewhat more sophisticated way; see page 268, for example). Schachter would write just two years later, in 1987, that "nowadays anyone familiar with music theory knows that Schenker did more than analyze the first movement of the *Eroica* as 'Three Blind Mice' with a college education" (his choice of words here perhaps subtly aims at historical musicologists such as Kerman). Schachter, "Analysis by Key: Another Look at Modulation," 134. Furthermore, Lerdahl and Jackendoff had discussed this very point in *GTTM*, as we have seen in their justification of favoring stability over salience in making reductions.

[21] Schachter, "Preliminary Study," 23. Succeeding citations of these three articles (and several others by Schachter) will refer to page numbers from Schachter, *Unfoldings: Essays in Schenkerian Theory and Analysis*, where they were later reprinted.

[22] Schachter, "Preliminary Study," 28, 52.

[23] Of course rhythms can be more or less stable as well, but my references to "stability" are essentially an abbreviation for *GTTM*'s more qualified term, "pitch stability."

some psychoacoustic salience conditions that seem to exist independently of rhythm (or are not inherently temporal), such as register and intensity, it does so in terms of change.

The reason for this is that changes in register and dynamics are themselves salient, therefore creating accents that demarcate the grouping boundaries. A *subito piano* passage following an extended period of louder music can be salient, and the beginning of this passage may be heard as the beginning of a new section; in other words, it is not simply that high and loud passages are more salient. Of course, this observation by Lerdahl and Jackendoff was also made by Schachter in "A Preliminary Study." A section of Schachter's essay entitled "Texture, Dynamics, Timbre, and Rhythm" begins: "Changes of texture, dynamics, and timbre can produce accents and groupings; they can, therefore, exert a significant influence upon the rhythmic design of a piece."[24]

In "A Preliminary Study," Schachter also makes the same point regarding the interplay between salience and stability that Lerdahl and Jackendoff do in the *Eroica* discussion mentioned above: "In the three excerpts . . . leading tones are strongly accented relative to their resolutions. And it is precisely from the conflict between accent and tonal stability that the rhythmic effect of the excerpts comes."[25] As we continue to explore the relationship between the formalist work of Lerdahl and Jackendoff and the comparatively intuitionist work of Schachter (and Rothstein), it will become increasingly apparent that the underlying concepts between them are the same; they are merely two sides of the same coin.[26]

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[24] Ibid., 40. For Lerdahl and Jackendoff's original formulation of this thought, see "Toward a Formal Theory of Music," 118.
[25] Schachter, "Preliminary Study," 41.
[26] See pages 53 to 55 of *GTTM* for Lerdahl and Jackendoff's discussion of ways in which their work "does not conform to the stereotype of a formal theory." Ibid., 53. Also note that throughout this paper, I will make mention of "formalism"; these remarks are not necessarily

It may be tempting to make assertions about who got there first, but this question would be difficult to answer. It would appear that Schachter and Lerdahl and Jackendoff began working on this material concurrently, that their work cross-fertilized, and that their ideas were published and came to full fruition over a period of several years (along with those of Rothstein). Furthermore, many of these ideas had been gestating in the works of prior rhythmic scholars. In "A Preliminary Study," for instance, Schachter reviews the efforts of those who indicated the influence of Schenker: "In recent years many musicians have tried to come to grips with the problem of rhythm in tonal music. Much of their work is interesting and helpful, but significantly enough, some of these writers themselves obviously consider their attempts to be merely preliminary excursions into a field still to be explored."[27] In this way, he both acknowledges the difficulty and vastness of the terrain under consideration, and sets the stage for a new phase of writing about rhythm, where it is vitally and inextricably bound up with Schenkerian theory (whether formalized or not). Indeed, a remarkable flourish of sophisticated rhythmic studies would follow this article in rapid succession, as shown in Table 1.[28]

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intended to refer to all formalist music theory, and not infrequently *GTTM* (and Lerdahl's other work) will be the primary subject of such references.

[27] Schachter, "A Preliminary Study," 29. In addition, Schachter discusses Edward Cone's *Musical Form and Musical Performance* as well as his article "Analysis Today," Grosvenor Cooper and Leonard Meyer's *The Rhythmic Structure of Music*, and Arthur Komar's *Theory of Suspensions: A Study of Metrical and Pitch Relations in Tonal Music*; see pages 31-35. He also cites Victor Zuckerkandl, Jan LaRue, Peter Westergaard, Roy Travis, Wallace Berry, and Charles Rosen.

[28] Note that all of these scholars published other important works during this period and that Lerdahl and Jackendoff's work is not only about rhythm. As regards Yeston and Lester: Rothstein pointedly removes himself from Yeston's work; see Rothstein, "Rhythm," 171; and, with respect to the question of influence, Rothstein notes that Lester's work was not published until *Phrase Rhythm in Tonal Music* was already mostly completed; see Rothstein, *Phrase Rhythm*, ix.

1976	Schachter	"Rhythm and Linear Analysis: A Preliminary Study"
1976	Yeston	*The Stratification of Musical Rhythm*
1977	Lerdahl and Jackendoff	"Toward a Formal Theory of Tonal Music"
1980	Schachter	"Rhythm and Linear Analysis: Durational Reduction"
1981	Rothstein	"Rhythm and the Theory of Structural Levels" (dissertation)
1983	Lerdahl and Jackendoff	*A Generative Theory of Tonal Music* (*GTTM*)
1986	Lester	*The Rhythms of Tonal Music*
1987	Schachter	"Rhythm and Linear Analysis: Aspects of Meter"
1989	Rothstein	*Phrase Rhythm in Tonal Music*
1990	Rothstein	"Rhythmic Displacement and Rhythmic Normalization"

Table 1.1 A series of significant rhythmic studies.

The cross-fertilization between Lerdahl and Jackendoff's work and that of Schenkerians was acknowledged. In *GTTM*, Lerdahl and Jackendoff state: "That our list covers as much ground as it does is due in part to a reading of Schachter 1976. This paper suggested to us that our theory could express more aspects of rhythm than we had realized."[29] In "Aspects of Meter," Schachter refers "any reader for whom my work has been too sketchy" to Lerdahl and Jackendoff (along with Komar and Yeston).[30] Similarly, Rothstein acknowledges the influence of *GTTM* in *Phrase Rhythm in Tonal Music*, and mentions Lerdahl as being among those who read all or part of his manuscript and made suggestions.[31] In turn, Lerdahl mentions the

[29] Lerdahl and Jackendoff, *Generative Theory*, 342 (note 3). Personal communication with Schachter is cited on page 341. For other references to Schachter, see ibid., 339-340, 342.
[30] Schachter, "Aspects of Meter," 82. See also ibid., 83; and idem., "Analysis by Key: Another Look at Modulation," 136.
[31] Rothstein, *Phrase Rhythm*, x.

influence of Rothstein and/or Schachter on his work in *Tonal Pitch Space*, presenting an example "using methods of Schachter (1980) and Rothstein (1989)," and another where the "notation is adapted from Schachter 1980."[32]

In his doctoral dissertation, "Durational Pacing in Handel's Instrumental Works: The Nature of Temporality in the Music of the High Baroque," Channan Willner reflects: "I studied with [Ernst] Oster in class at the Mannes College of Music between the years of 1972 and 1977, and I remember vividly how suspicious he was of both rhythmic studies and departures from Schenkerian theory. In his magically quaint way he once said, 'Ever since I arrived in this country, everyone has been trying to study rhythm. Frankly, *I* find it the hardest thing.'"[33] Oster's statement of course echoes what has already been noted about the state of rhythmic studies in the mid-1970s. But Willner's observation that Oster was suspicious of rhythmic studies is also significant, and leads us to our next topic: the relationship of Schachter's and Rothstein's work on rhythm to Schenker's own writings.

Both Rothstein and Schachter are unequivocal about the fact that their work merely clarifies or is derived directly from that of Schenker. That is to say, their observations about rhythm are already present either explicitly or implicitly in Schenker's writings. It is worth remembering that one of Schachter's chief aims in "A Preliminary Study" is to address the (then) "widespread belief that Schenker's writings reveal an almost complete neglect of rhythm."[34] To this end, Schachter details why Schenker is criticized along these lines (and to what extent the criticisms are valid), discusses significant previous attempts to build a theory of rhythm by authors who also mention his influence on their work (as mentioned above), and lays the

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[32] Lerdahl, *Tonal Pitch Space*, 242, 89.
[33] Willner, "Durational Pacing," ix. Emphasis in original.
[34] Schachter, "Aspects of Meter," 115. Although this is cited from "Aspects of Meter," Schachter here refers to his writing of "A Preliminary Study."

groundwork for future scholarship, dealing with both types of salience previously described (not only durational rhythm and tonal rhythm but also dynamics, texture, timbre, and so forth). At the conclusion of the final *Music Forum* article, "Aspects of Meter," Schachter states: "Almost every one of my analytic examples embodies ideas of Schenker's, either taken over directly or developed further by me. If the ideas elaborated in this article . . . reveal anything significant about musical rhythm and meter, they are testimony to the continuing creative force that emanates from . . . Schenker."[35]

Similarly, in "Rhythm and the Theory of Structural Levels," Rothstein writes:

> In order to forestall any possible misunderstanding, I wish to make it quite clear that I have no intention of trying to present the "how to" manual that Schenker deliberately never wrote; nor shall I try to codify Schenker's analytical technique into a rigid set of rules. . . . more modest aim of elucidating some aspects of Schenker's analytical technique. At the same time, I will try to identify, if only tentatively, some of the principles on which that technique is based.[36]

One chapter of the thesis is devoted simply to translating two rhythmic studies from *Das Meisterwerk in der Musik.*[37] It is crucial to note Rothstein's specific language with regard to the role of rhythm in reductive analysis, so that a secure connection to the work of Lerdahl and Jackendoff may later be established:

> Since rhythmic analysis depends so critically upon tonal (i.e., harmonic/contrapuntal) analysis, it is necessary first to perform a conventional "Schenkerian analysis" of any given work, before undertaking a rhythmic analysis. The rhythmic analysis thus proceeds from the tonal analysis, which is itself full of rhythmic implications (because rhythmic criteria are used *implicitly* in any tonal reduction).[38]

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[35] Ibid., 116.
[36] Rothstein, "Rhythm," 76.
[37] These are the studies of Mozart's symphony No. 40, K. 550, I, mm. 1-66, from volume two, pages 107 to 157, and of Beethoven's symphony No. 3 ("*Eroica*"), Op. 55, I, mm. 83-148, from volume three, pages 29 to 101.
[38] Rothstein, "Rhythm," 207. Emphasis added.

In a previous chapter he states that "normalization is an *inherent* component of the reductive process. Every competently executed reductive analysis is, in this sense, also a rhythmic analysis."[39]

If Schachter and Rothstein produced masterful work on rhythm, why would Oster be suspicious of such studies? While Willner does not give a date for Oster's statement, we know from what he says that it was sometime just before or around the time of "A Preliminary Study" (possibly as early as 1972); thus, it is doubtful that Oster would have been referring to Schachter's (or Rothstein's) work. As noted, existing rhythmic studies, though significant, were not highly developed. Furthermore, as Schachter details, there was a common belief that Schenkerian theory did not deal with rhythm at all, and that therefore rhythmic studies were necessary to fill a void. On the other hand, since relatively few scholars really understood Schenker at the time (Oster's translation of *Der freie Satz* had not yet been published), rhythmic theorists who did cite Schenker as an influence might also be considered suspect by Oster, and their work viewed as only further muddying the waters.[40]

Rhythm posed difficult problems when explicitly analyzed, but if one were a superior Schenkerian analyst, as Oster was, such analysis would be seen as unnecessary (although Schenker had written explicitly about rhythm, it was still a subject left mostly to be dealt with implicitly during the process of reduction). As we have seen, rhythm is bound up with other parameters of salience, those that are less implicitly hierarchical. While timbre, dynamics, register, etc. may affect tonal and durational rhythm, such elements may also contribute to the type of salience discussed in Rothgeb's article, and we have seen why his misgivings about it were well founded.

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[39] Ibid., 75. Emphasis added.
[40] *Der freie Satz* will hereafter be referred to as *Free Composition*, abbreviated *FC*.

Oster did not live to read most of the seminal writings on rhythm listed in Table 1.1, so we do not know how he would have viewed them. However, he was certainly against the idea that Schenker's work required any revisions. In the passages above, we can see that Schachter and Rothstein took pains to clarify that their work on rhythm was not revisionist.[41]

Schenker and *GTTM*

Having examined the relationship between Schenkerian theory and the work of Rothstein and Schachter above, we now address more closely the relationship between Schenkerian theory and the work of Lerdahl and Jackendoff. This examination, which is rather thorough in nature, is significant for our discussion generally, but it will be particularly important to refer back to during our investigation of Lerdahl's *Tonal Pitch Space*, in Chapter 2.

The most extended discussion of Schenker in Lerdahl and Jackendoff's work appears in "An Overview of Hierarchical Structure in Music" (1983/84), where they detail how their work is distinct from that of Schenker. In summary, Lerdahl and Jackendoff report that they (1) focus on hierarchical aspects of music (and therefore on rhythm rather than on voice-leading), (2) develop a musical grammar (or rule system), (3) have a psychological rather than aesthetic aim, (4) proceed empirically rather than axiomatically (particularly with regards to the background), (5) restrict, but do not eliminate, the use of surface-level transformations made to yield

[41] It might be noted, though, that Rothstein seemed to become more liberal about such statements over time. For example, consider his "Rhythmic Displacement and Rhythmic Normalization," which is an adaptation of Chapter 5 of his dissertation, "Rhythmic Normalization." Here he is slightly less "tentative" about his contribution than in the passage above (from Chapter 5): "Whereas the dissertation as a whole represented an exegesis of Schenker's thoughts, here I present my own ideas, which, however, are intimately related to Schenker's." Rothstein also subtly acknowledges his own contribution in *Phrase Rhythm in Tonal Music*. Rothstein, "Rhythmic Displacement," 87; idem, *Phrase Rhythm*, ix.

conformity with higher-level imperatives, and (6) define pitch hierarchy strictly in order to exclude overlap or intersection (but make provisions for structures that only appear to overlap or intersect).[42]

Points three and four require some discussion. Regarding their objectives, Lerdahl and Jackendoff may oversimplify their formulation here: "Schenker's theory is aesthetic and ours is psychological. His purpose is to illuminate musical masterpieces, ours to find principles of musical cognition." In *GTTM* (published contemporaneously), they qualify: "the chief purpose of his [Schenker's] theory was to illuminate structure in musical masterpieces. Though our proposed theory also aspires to such illumination, its focus is on musical cognition."[43]

With respect to Lerdahl and Jackendoff's indication of an empirical rather than axiomatic approach, it must be noted here that both Schenker and *GTTM* employ both "bottom-up" and "top-down" analytical methods.[44] *GTTM*'s prolongational reduction, for example, is carried out according to top-down procedures: "unlike time-span trees, prolongational trees are constructed from global to local levels (i.e., from the top downwards)."[45] It is with regard to the background that their empirical approach diverges most significantly from Schenker's axiomatic approach:

> The *Ursatz*-like structures at the highest branching levels of Figure 8 and Figure 12 do not result from any presumed status of these structures. Rather, they arise directly out of applications of the rules, which together predict maximally stable structures. If the piece analyzed were tonally less stable, *Ursatz*-like structures would not appear. From our vantage, Schenker's *Ursatz* simply embodies many of the stability-making features of the tonal idiom.[46]

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[42] Lerdahl and Jackendoff, "Hierarchical Structure," 247-52.
[43] Lerdahl and Jackendoff, *Generative Theory*, 338. Elsewhere the authors make a distinction between "artistic" and "psychological" concerns. See Lerdahl and Jackendoff, *Generative Theory*, 7-8, 96, 111.
[44] Bottom-up / top-down issues will be further discussed in Chapter 2 (see pages 108-10).
[45] Lerdahl and Jackendoff, "Hierarchical Structure," 245.
[46] Ibid., 249.

This statement will prove relevant to our discussion of Schachter's revisionism and to our treatment of Salzer in Chapter 2.

Although time-span reductions are constructed from the bottom upwards, it would seem that Lerdahl and Jackendoff still allow top-down procedures to creep into the process. For example, consider GPR 7, "Time-Span and Prolongational Stability": "Prefer a grouping structure that results in more stable time-span and/or prolongational reductions." They explain:

> [GPR 7] is concerned primarily with influencing large-scale grouping. Different choices in sectionalization of a piece often result in interesting differences in the time-span and prolongational reductions, and often the choice cannot be made purely on the basis of grouping evidence. Rather, the choice of preferred groupings must involve the relative stability of the resulting reductions.[47]

Observe that the rule refers to "time-span *and/or* prolongational reductions," and thus potentially to time-span reduction only in a given situation. Moreover, to prefer groupings that result in stable prolongational reductions would ultimately seem to result in preferring the "*Ursatz*-like structures" mentioned above.

However, this may not be what Lerdahl and Jackendoff mean. Metrical Preference Rule (MPR) 9, "Time-Span Interaction," states: "prefer a metrical analysis that minimizes conflict in the time-span reduction." Lerdahl and Jackendoff describe such time-span reductions (with minimal conflict between "pitch stability, metrical stability, and articulation of groups") themselves as being stable.[48] In other words, the concept of stability has more than one meaning; yet, these meanings are still related to one another.

Since GPR 7 "primarily" involves large-scale grouping, this rule is perhaps akin to Charles Smith's contention in "Musical Form and Fundamental Structure: An Investigation of

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[47] Lerdahl and Jackendoff, *Generative Theory*, 52.
[48] Ibid., 90.

Schenker's *Formenlehre*," that background structure and form should agree. However, as we will see below, even in Smith's revision of Schenker, background structure necessarily exerts a top-down influence, and the same is true here. Lerdahl and Jackendoff may value different things in reductions than Smith does, but those factors are still permitted to manipulate the lower levels in order to get the analysis to work out accordingly on the higher levels. To say that GPR 7 is concerned with "influencing large-scale grouping" is essentially to say that large-scale considerations will influence—or simply override—decisions made on a bottom-up basis (these decisions constituting the "grouping evidence"), particularly since the prolongational reduction then takes the time-span reduction and explicitly *does* operate from there on a top-down basis.[49]

Furthermore, while Schenker presents his later theory axiomatically, his analyses are not always in strict accordance with these axioms, and certainly many of his followers make exceptions (Salzer especially, of course), as discussed below. Such exceptions to Schenker's *Ursatz* models are more likely to occur, as Lerdahl and Jackendoff observe above with respect to their own theory, when the piece is "tonally less stable." A clue as to why Schenker, Schenkerians, and maybe even Lerdahl and Jackendoff do not always make these exceptions when they perhaps should may be found in another phrase from *GTTM* cited above: "the rules . . . predict maximally stable structures." The predictions in *GTTM* are, of course, made with respect to listeners' intuitions.[50]

Throughout *GTTM*, Lerdahl and Jackendoff have indeed written the rules so as to maximize stability; GPR 7 and MPR 9 are merely two examples. If maximal stability is in fact in accordance with listeners' intuitions, then the logical conclusion would be that listeners make sense of music by organizing it in the most stable fashion possible. Lerdahl and Jackendoff's

[49] Also see Lerdahl and Jackendoff, *GTTM*, 54.
[50] Ibid., 1.

discussion of Gestalt psychology in Chapter 12.1 confirms that this is their view, particularly in explicitly connecting their preference rules with the Law of *Prägnanz*, which posits that psychological organization is maximally regular, symmetrical, and simple.[51] In other words, it is natural for analysts to want the background structure to "work out well." However, in many cases, and with increasing frequency as later music is examined, organizing music in strict accordance with the standard *Ursatz* models is simply not sensible, and that is where Salzer—and Lerdahl's *Tonal Pitch Space*—enter into the picture.

As is to be expected in any substantial discourse on a highly complex subject (particularly when spread out over the course of several years), and as we have seen above, Lerdahl and Jackendoff are not entirely consistent in their statements regarding Schenkerian analysis. One can see them grappling with, or dancing around, the subject of how exactly their work relates to that of Schenker and Schenkerians. Sometimes, as in "Toward a Formal Theory of Tonal Music," they refer to Schenker as just one amongst many other theorists: "Previous theories of tonal music have not met such demands of rigor and prediction. Even Schenker's theory, which can be construed as having much in common with the generative approach to linguistics, is at bottom inexplicit. One of the virtues of a formal theory is not that it is necessarily more 'true,' but that, even where incorrect or inadequate, it clarifies issues precisely."[52] Similarly, and more specifically, they later state that "other theories of pitch reduction appear to us to formulate informally elements of one kind of reduction while tacitly employing, in addition, elements of the other kind. For example, Schenker, in developing what

[51] Ibid., 304.
[52] Lerdahl and Jackendoff, "Formal Theory," 112.

resembles the prolongational reduction, utilizes many of the elements which we express in the time-span reduction."[53]

If this sounds rather backwards, it is, a point that the authors graciously acknowledge, albeit in an endnote: "No doubt it would be more fair to say that in developing the prolongational reduction, we are trying to use formal means to construct an account of the musical intuitions expressed in a Schenkerian reduction. We admire, and are influenced by, Schenker's work; all criticisms should be understood within this context."[54] This statement seems to acknowledge the fact that their work is essentially a formalization of Schenker. However, Lerdahl and Jackendoff often assert that prolongational reduction is the only part of their theory that really is analogous to Schenker's, stating, for example, that it "is the closest equivalent in our theory to Schenkerian analysis."[55] More will be said on this subject below, but we might initially respond by observing that while this statement may be true, the prolongational reduction is still obviously the capstone portion of their theory, as it is the last operation in a four-step process (grouping analysis, metrical analysis, time-span reduction, and prolongational reduction). As the authors note in *GTTM*, "it would be disappointing to stop at time-span reduction," and Lerdahl states in *Tonal Pitch Space* that the prolongational reduction is "of greater musical and psychological interest."[56]

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[53] Ibid., 147. Schenker was not the first to approach music reductively (see Chapter 2, note 182), but one wonders who else Lerdahl and Jackendoff might be referring to. One is reminded of Rothstein's essay, "The Americanization of Heinrich Schenker," where he observes that "we must treat Schenkerian theory as one theory among potentially many, even if not as one among actually many." Ibid., 197.

[54] Ibid., 170. Such praise is also reserved for endnotes in *GTTM* (for example, see page 338, note 2).

[55] Lerdahl and Jackendoff, "Formal Theory," 115.

[56] Lerdahl and Jackendoff, *Generative Theory*, 121; Lerdahl, *Tonal Pitch Space*, 14.

Central to the matter of formalization is section 5.2 of *GTTM*, "Possible Formal Approaches to Reduction," which directly addresses this issue.[57] Here, Lerdahl and Jackendoff cite other strategies for formalizing Schenkerian analysis, contrasting them with that of their own. What we may generally take away from this discussion is that Lerdahl and Jackendoff engage relatively indirectly with Schenkerian analysis itself, in contrast to work such as Stephen Smoliar's "A Computer Aid for Schenkerian Analysis." However, nothing here is counter to the observation that their work is a formalization of Schenkerian analysis, or of the same underlying content.[58]

In one of the passages from "Toward a Formal Theory of Tonal Music" quoted above, Lerdahl and Jackendoff mention Schenker's "tacit" employment of aspects conveyed in the time-span reduction. Similarly, in *GTTM*, they write:

> The solution, then, lies in the proper integration of criteria of pitch stability with rhythmic criteria based on the grouping and metrical components. Schenkerian reductions rely heavily on a tacit knowledge of these areas. Indeed, Schenkerian analysis is workable at all only because the analyst himself supplies (consciously or unconsciously) the requisite rhythmic intuitions. A formal cognitive theory must make this knowledge manifest through a set of explicit rules.[59]

Recall Rothstein's statements above describing rhythmic considerations as "inherent" and "implicit" to the process of reduction. He, like Schachter, is also invested in the process of making "this knowledge manifest," just not through "a rigid set of rules."

It is instructive as well to compare these passages of Rothstein directly with passages in Lerdahl and Jackendoff's work where they describe the general mechanism by which rhythmic

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[57] See Lerdahl and Jackendoff, *Generative Theory*, 111-12.
[58] Schachter appears to comment on the close relationship between *GTTM* and Schenker in his reference to "work by people who are not, *strictly speaking*, Schenkerian, for example Joel Lester, or Fred Lerdahl and Ray Jackendoff." Schachter, "Dialogue," 7. Emphasis added.
[59] Ibid., 119.

considerations feed into prolongational reduction. In "An Overview of Hierarchical Structure in Music," for example, they explain: "In our theory, the requisite contextual and rhythmic information is not a matter of the analyst's artistic intuition, as in Schenkerian analysis, but is derived formally from the time-span tree for the piece, which in turn encodes all the rhythmic information concerning grouping and meter (PRPR 1) [Prolongational Reduction Preference Rule 1 (Time-Span Importance)]."[60] There is simply no fundamental difference between these approaches beyond the fact that one is formal and the other is intuitive. (Rothstein's view that "rhythmic analysis depends . . . critically upon tonal (i.e., harmonic/contrapuntal) analysis" may at first blush seem uniquely Schenkerian in making rhythm dependent upon pitch, but it is basically equivalent to *GTTM*'s consideration of grouping analysis as part of rhythmic analysis.) Rothstein trusts the rhythmic intuitions of the analyst in making a "Schenkerian analysis." Performing an actual separate rhythmic analysis after doing a Schenkerian analysis, as he suggests, is essentially to go back after the fact and analyze one's intuitions about rhythm (which are reflected in the Schenkerian analysis). Lerdahl and Jackendoff are less willing to trust these rhythmic intuitions (and also have different aims), hence their rhythmic analysis occurs before their prolongational analysis, in place of rhythmic intuitions.[61]

Despite the observations made above, Lerdahl and Jackendoff at times downplay the intimate relationship between Schenkerian analysis and *GTTM* in asserting the significance of their work:

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[60] Lerdahl and Jackendoff, "Hierarchical Structure," 245-46. See also idem., *Generative Theory*, 119 and 123.

[61] Of course, in the language of *GTTM*, this statement would not quite be accurate, since Lerdahl and Jackendoff in fact attempt to describe the intuitions of educated listeners. Perhaps we might say that the extent to which they view their work as a critique of Schenkerian analysis—as opposed (or in addition) to a formalization of it—is the extent to which they do not trust intuition, or do not trust that the process of Schenkerian analysis, as they view it, accurately captures that intuition.

> The close dependence of prolongational reduction on time-span reduction constitutes a major claim of our theory. It asserts that the perceived patterns of tension and relaxation in pitch structure depend crucially on the hierarchy of structurally important events within time-spans as defined by meter and grouping. In other words, the listener's understanding of pitch connections in a piece is a function of how he segments its surface. This claim entails the unification of pitch and rhythm within one overarching theory.[62]

While this may simply be an inconsistency, it must be emphasized that Rothstein's and Schachter's work is consonant with everything stated in this passage (as we will continue to see).[63] In an endnote (from a different chapter), they acknowledge that "the conception of time-span reduction is not new with us, though a number of refinements are totally our own," citing Schachter's "Durational Reduction" as one such precursor.[64]

However, Schachter's remarks concerning the usefulness of his durational reductions are revealing: "The solution to these problems [with durational reductions] seems simple and obvious. It is to use the durational reductions only where they reveal important features of the piece more clearly than other methods would. . . . The rhythmic reductions will probably prove most useful as an adjunct to graphs of the voice-leading and harmony, used to clarify some otherwise obscure aspect of the rhythmic organization."[65] In other words, he regards the process of actually making a time-span reductional graph as non-essential, but the considerations of grouping and meter that go into making one are nevertheless an intrinsic part of Schenkerian

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[62] Lerdahl and Jackendoff, *Generative Theory*, 188. For other formulations of the relationship between prolongation, time-span, meter, and grouping, see pages 119 and 123, and idem., "Hierarchical Structure," 245-46.

[63] The degree to which Rothstein and Schachter hold these convictions might vary to some extent with Lerdahl and Jackendoff, though David Beach has called into question the extent to which these convictions are actually borne out in *GTTM*; Beach, "The Current State of Schenkerian Research," 294-95.

[64] Lerdahl and Jackendoff, *Generative Theory*, 339 (note 9). The point is not so much that it is a precursor as that it is so similar. Lerdahl and Jackendoff indeed cite Schachter's article as prior work, but remember that their "Formal Theory" article predated "Durational Reduction."

[65] Schachter, "Durational Reduction," 76.

analysis. Hence we have Rothstein's rhythmic normalization, which is closely related to Schachter's durational reduction.[66] (Recall Rothstein's statement that rhythmic normalization is "inherent" to the process of reduction.)

Furthermore, in Chapter 6 of *GTTM*, "Time-Span Reduction: The Analytic System," we learn what one of Lerdahl and Jackendoff's major "refinements" of time-span reduction is:

> Previous approaches to time-span reduction have been based exclusively on some metrical conception. . . . A purely metrical approach to time-span segmentation is accurate only for in-phase passages.
>
> . . . Schachter restricts his version of time-span reduction (called "durational reduction") to relatively short and regular examples in order to avoid hypothetical constructions. None of these works addresses the question of out-of-phase passages.[67]

Indeed, as Lerdahl and Jackendoff note, Schachter consciously avoids dealing with certain complexities in "Durational Reduction."[68]

However, Lerdahl and Jackendoff may not have been aware of Rothstein's "Rhythm and the Theory of Structural Levels," which deals extensively with out-of-phase passages in its sixty-page chapter on rhythmic normalization.[69] Rothstein characterizes such passages in terms of tension, much the same way as Lerdahl and Jackendoff (and Schachter in "A Preliminary Study") do: "The normalization/displacement relationships that are immediately apparent in a multi-level graph reveal the *perceived* tension between the normal and the abnormal; in rhythmic

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[66] See Rothstein, "Rhythmic Normalization," 89.

[67] Lerdahl and Jackendoff, *Generative Theory*, 127-28, and 339 (note 1). The cited Lewin source is an unpublished manuscript. "Out-of-phase passages" refers to places where grouping and metrical structure are not aligned (they generally use the term "incongruent" to refer to reductions associated with such passages). Lerdahl and Jackendoff, *Generative Theory*, 339 (note 2). They use the terms "out-of-phase" and "incongruent" (as well as "in-phase" and "congruent") in "Toward a Formal Theory of Tonal Music" as well.

[68] Another annotation from this chapter is intriguing with respect to the term "salience"; in reference to Schachter's discussion of the structural dominant in "Durational Reduction," Lerdahl and Jackendoff conclude that "this concession confuses surface salience with reductional function."

[69] Citations in *GTTM* extend up through 1982 and include several dissertations.

as well as in pitch structure, it is in this tension that much of the expressive and dramatic effect of tonal music lies."[70] Rothstein's work as a whole is preoccupied with the interaction of grouping and metrical considerations—he uses Schachter's approximately equivalent terms, tonal rhythm and durational rhythm—and the chapter on normalization is no exception.[71] The following passage suffices to exemplify these concerns:

> Schenker shows the $\hat{2}$ arriving in m. 9, over the auxiliary harmony [II♯], rather than in m. 16, where the V actually appears. The clue here lies in the hypermeter: m. 9 is the downbeat of an 8-bar hypermeasure in a piece composed entirely of 8-bar hypermeasures. The II♯ harmony therefore belongs to the category of accented auxiliary harmonies discussed in section 5.1. . . . In other words, II♯ delays the appearance of V; at a higher level, $\hat{2}$ [over] V would occupy all of mm. 9-16.[72]

It is important to bear in mind that while Lerdahl and Jackendoff characterize Schachter's "Durational Reduction" as being overly focused on metrical issues, the same criticism in no way applies to "A Preliminary Study." In evaluating the relationship between *GTTM* and Schachter's work, certain passages from *GTTM* may give us pause, and must be carefully considered. For instance, while Lerdahl and Jackendoff state that "a guiding principle throughout [Chapter 2] will be that rhythmic intuition must not be oversimplified," this statement is not necessarily a reference to Schenkerian analysis.[73] A good example of oversimplifying rhythmic intuition is represented by their complaint later in the chapter that "recently there have been several attempts to equate structural accents with strong metrical accents."[74] They do not offer any hints as to

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[70] Rothstein, "Rhythm," 75.
[71] Rothstein's dissertation does not refer to Schachter's "Durational Reduction," published one year earlier.
[72] Rothstein, "Rhythm," 120.
[73] Lerdahl and Jackendoff, *Generative Theory*, 12.
[74] Ibid., 31.

who they have in mind here, but Schachter clearly cannot be among them.[75] In "A Preliminary Study," Schachter expresses the same concern, stating that "the analogy between metrical accent and tonal stability . . . ought not to be overdrawn. Despite certain obvious similarities, the two ideas are not completely congruent. . . . We should be wary of facile comparisons, say, between a leading tone (or a chord containing one) and an upbeat."[76] In another notable passage, Schachter remarks: "In dealing with rhythm we must account for these conflicting emphases; otherwise we shall arrive at an *oversimplified* account of large rhythmic motion."[77] Here, and as we have seen throughout this section, Lerdahl and Jackendoff's work closely parallels that of Schenkerians.

Formalism and Intuitionism

As much as formalism and intuitionism have influenced each other, they remain distinctly different domains, and problems seem to arise when they are not adequately separated. Lerdahl and Jackendoff, Rothstein, and Schachter have stayed within their respective spheres, yet have maintained an open exchange of ideas and have seamlessly incorporated external ideas into the context of their own work. There have often been negative consequences for scholars

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[75] The authors do mention Cooper and Meyer in this section, but this reference occurs several pages earlier (and also after a statement referring to "recent" work); Lerdahl and Jackendoff, *Generative Theory*, 26.

[76] Schachter, "A Preliminary Study," 41.

[77] Ibid., 31. Emphasis added. Lerdahl and Jackendoff may have had in mind work such as Komar's *Theory of Suspensions*, which Schachter had reviewed earlier in his essay. Schachter, when discussing a different subject, objects to Komar's positing of a "measure 0" as a hypermetrical strong beat (on various levels) in the Adagio of Beethoven's piano sonata number 8, op. 13 ("Pathétique"), wondering if we can "really hear a silent measure as 'stronger' than some other measure much further along in the music" (and also noting that he disagrees with Komar's analysis of the actual measure 1 as an upbeat). Komar may do this to allow the structural accents and metrical accents to be aligned. For example, measures 4, 8, 12, and 16 feature clear cadences but are hypermetrical downbeats in Komar's analysis. Schachter, "A Preliminary Study," 35; Komar, *Theory of Suspensions*, 156.

who have not operated in this fashion, as illustrated below.[78] One would not wish to conclude that these fields must be separate, but it seems clear that the methods and motivations of one's enterprises in this area may become muddled if left to wander between formalism and intuitionism. (This is not to preclude the possibility that a highly individual thinker might forge a compelling new path through the middle, but so far this has not happened.)

Later in this chapter, I will argue that Smith's essay on form—while a very important contribution—suffers for this reason. Cohn's contributions contain errors which pertain to his formalist orientation. For example, his "Constructive Conflict" essay culminates in a rule involving a "four-event scheme" of overlapping entities (as Cohn notes, this rule also underlies his two other contributions from 1992).[79] However, the rule fails to incorporate the issue of structural levels, as does his discussion of analytical examples, and may be easily falsified. Gregory Proctor and Herbert Riggins's formalist tinged "A Schenker Pedagogy," met with a merciless polemical response in Rothstein's "Americanization of Schenker Pedagogy?" Rothstein wrote, "if, in my essay, I had set out to satirize an analysis course of which I strongly disapproved, I might have written something very like the Proctor-Riggins article."[80] Similarly, Steve Larson's "The Problem of Prolongation in *Tonal* Music: Terminology, Perception, and Expressive Meaning" met with harsh criticism from Lerdahl in "Issues in Prolongational Theory: A Response to Larson" (1997). Lerdahl wrote:

He [Larson] has one foot in Schenkerian theory and the other in music cognition. Being

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[78] In "Perception: A Perspective from Music Theory," Nicholas Cook cites a phrase used by music cognitionist Eric Clarke, who refers to the "rather unstructured 'leakage' between the disciplines [of music cognition and music theory]." Cook observes that this "leakage" is "potentially damaging to both" and concludes that "what is needed is the careful translation . . . of concepts from one discipline to the other." The same observations may apply to music formalism and intuitionism. Clark, "Issues in Language and Music," 2; Cook, "Perception," 92.
[79] Cohn, "Constructive Conflict," 16-18.
[80] Rothstein, "Schenker Pedagogy?," 295.

> serious about cognition requires stepping away from Schenker a little. One can agree that Schenker is a seminal theorist whose concepts have great aural relevance, yet be aware that he privileges an idealized voice-leading model far beyond what is cognitively credible. . . . The best homage we can pay to this bold thinker is to plunder his most fertile ideas and put them to our own use, without looking over our shoulders.[81]

There is certainly some truth to the viewpoint Lerdahl expresses in the last passage here, particularly if one restricts "Schenkerian theory" to "Schenker" (and really to the Schenker of *FC*), as he does here.[82] And several other commentators have made similar statements.[83] However, what is more notable about this passage is Lerdahl's reference to what is "cognitively credible." (This statement is probably true enough, with regards to certain aspects of Schenkerian theory when applied to certain pieces.) On the one hand, Lerdahl and Jackendoff often present their work as clarifying the process of tonal (Schenkerian) analysis, positing formal hypotheses to be subjected to future empirical study (this accords with the notion that *GTTM* and Schenkerian analysis are two sides of the same coin). Yet, in the meantime, they also make judgments about what is or is not "cognitively credible."[84]

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[81] Lerdahl, "Response to Larson," 153.

[82] See below regarding Cohn's distinction between "Schenker's theory" and "Schenkerian theory."

[83] Lerdahl goes on to state that we must get "away from Schenker's shadow." In a related vein, Matthew McDonald begins his essay, "De-Composition? Schenker (and His Corpus) Today," with a humorous chronicle of recent references by Jonathan Dunsby, Rothstein, and Brian Hyer to Schenker's "vital status"—"dead, alive, undead, resurrected." Cohn invokes "Schenker's ghost" at the end of his "Constructive Conflict" essay. Similar concerns are reflected in Jason Yust's statement in "Formal Models of Prolongation" that formalization allows us to "confidently move 'beyond Schenker,'" and of course, there is *Beyond Schenkerism* itself. McDonald, "De-Composition," 217-18; Cohn, "Schenker's Theory," 19; Yust, "Formal Models," 9.

[84] Cohn and Dempster similarly mention the provisional status of their ideas, while still strongly asserting them: "Although such intuitions can ultimately be verified only by cautious empirical enquiries into the creative psychology of musicians and listeners, we suspect that they are widely shared." Cohn and Dempster, "Hierarchical Unity," 178. An interesting contrast may be found in Rothstein's discussion of American academic rhetoric. See Rothstein, "Americanization," 197-98.

> For example, in their "Formal Theory" essay, Lerdahl and Jackendoff assert:
>
> Usually Schenker intuitively utilizes these other elements [from the time-span reduction]; at other times he does not. His theory is not explicit enough for a principled decision to be made within it between one alternative or another. It is our judgment that his analyses are viable only when they conform at the relevant levels to the time-span reduction in the ways here set forth.[85]

Although such judgments are provisional, they create the impression of being more sound than those of Schenkerians, due to the scientistic nature of the discourse in general. And while Lerdahl and Jackendoff state that they want their "theory to be testable," investigation of relevant empirical studies reveals a number of problems with such work.[86] This is not to say that Lerdahl

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[85] Lerdahl and Jackendoff, "Formal Theory," 147. This statement, and particularly the reference to "a principled decision," is similar to a passage by Cohn regarding intuition; see Cohn, "Autonomy of Motives," 168. A related passage from *Tonal Pitch Space* reads: "Indeed, a similar step [time-span reduction] would be needed for Schenkerian analysis, if it were to aspire to the status of a predictive theory." Lerdahl, *Tonal Pitch Space*, 14. Schachter's durational reduction does of course provide this "similar step," but is not a formalized process.

[86] Lerdahl and Jackendoff, *GTTM*, 112. There are several separate issues with these studies. One of the major problems is that while *GTTM* is a, if not the, central document in music perception and cognition, researchers investigating large-scale perception in tonal music consistently, and somewhat necessarily, ignore the implications of Lerdahl and Jackendoff's significant discussion of idealized listeners and analyses. (Lerdahl and Jackendoff, *GTTM*, 3-4, 109, and 111. For evidence of *GTTM*'s centrality, see Anna Tirovolas and Daniel Levitin's "Music Perception and Cognition Research from 1983 to 2010: A Categorical and Bibliometric Analysis of Empirical Articles in *Music Perception*," 32.) These researchers exclusively use students as subjects (whether defined as "average," "trained," or "expert" listeners), and only rarely consider the effects of repeated hearings, yielding results at odds with the observations of music analysts, which they therefore challenge. Consequently, work influenced by music cognition is typically focused upon the more obvious—in other words, the more salient—features of the music, espousing fundamentally different values than the Schenkerian approach. The disturbing effects of these methods are apparent even in a sophisticated and nuanced recent study such as Zohar Eitan and Roni Granot's "Growing Oranges on Mozart's Apple Tree: 'Inner Form' and Aesthetic Judgment" (2008). The authors not only criticize analysts, but at times come perilously close to criticizing composers themselves (such as Mozart), whose compositional strategies were apparently lost on Eitan and Granot's subjects (see page 414, for example). In actuality, many subjects did perceive the relationships in question, as evidenced by their correct answers to purely objective questions; however, the perception of these listeners, who did not constitute a statistically significant majority, is merely considered to be anomalous. In another recent article, "Our Varying Histories and Future Potential: Models and Maps in

and Jackendoff's work could not eventually be verified, but it would take many decades, perhaps even the rest of the twenty-first century or much longer, to prove empirically—with multiple redundant experiments—that listeners of various levels of experience can perceive each rule listed in *GTTM*, as well as each combination of rules, at each level of musical structure, and at each combination of levels of musical structure; with or without repeated hearings; with or without the score; with or without intervening time for study; and each combination of all of the above and other criteria.[87] It would also require multiple generations of scientists that are well-funded, musically sophisticated, and dedicated specifically to *GTTM*. If, in the end, such a massive project were to succeed, Anthony Pople's remarks in "Systems and Strategies: Functions and Limits of Analysis" would likely apply: "it is reassuring rather than worrying when musicians complain that psychologists tell them nothing they don't know already."[88] For we already know, intuitively, the value of both Schenkerian analysis and *GTTM*, and the fundamental differences between them are minimal, in any case.

While Lerdahl (and Jackendoff) has voiced various criticisms concerning the comparatively intuitive approach of Schenkerians, Schenkerians have also made their share of critical remarks regarding formalism. Schachter has written: "It is far from my intention to offer a 'method for the reading of diminutions' or, God help us, a 'theory of reduction.' I strongly doubt that such methods or theories can be made to work, for I believe that the understanding of

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Science, the Humanities, and in Music Theory" (2011), Eugene Narmour advocates for cognitive music theory by repackaging its default focus upon ordinary listeners as being egalitarian (despite its exclusion and/or marginalization of more advanced listeners), and by arguing that music theory must be grounded in psychology. For a critique of work in music perception prior to 1994, see Cook, "Perception."

[87] The rule index at the end of *GTTM* lists forty-nine different numbered rules, some with up to six sub-rules, as well as other miscellaneous principles. Some of these overlap in various ways, and some of them do not need to be tested (such as the well-formedness rules).

[88] Pople, "Systems and Strategies," 116.

detail begins with an intuitive grasp of large structure, however imperfect or incomplete, a process that is ultimately resistant to rigorous formulation."[89] More diplomatically, Rothstein states in his "Americanization" essay, "although I have only limited sympathy for the various attempts to 'formalize' Schenker's ideas—because I don't believe it can be done beyond a fairly primitive level—it is at least an honest attempt, and it obviously requires a formal language."[90] Similarly, in "The Current State of Schenkerian Research," David Beach writes:

> There is a common thread among all the attempts to formalize Schenker's work, namely that his ideas are inadequate as presented and thus require some modification to rid them of any ambiguities and inconsistencies. This is a debatable assumption. Nevertheless, there is obvious value in these attempts, since through them we will undoubtedly arrive at a clearer definition of his ideas and their implications. It is also undoubtedly true that computer studies in this area will become more and more sophisticated, though I have serious doubts about our capabilities to program a machine to provide an adequate Schenkerian analysis. Even if it were possible to incorporate the necessary flexibility, one very important ingredient—imagination—would always be lacking.[91]

Taken together, these statements illustrate the core humanism of Schenkerians, of which intuition and imagination are essential components.

Salience and Subjectivity

One global consideration, which has already been peripherally mentioned, should be clarified before proceeding further. In *The Schenker Project: Culture, Race, and Music Theory*

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[89] Schachter, "Either/Or," 122-23. Yust discusses this statement of Schachter; see Yust, "Formal Models," 5-6. In a later essay, Schachter expands on this idea: "What the analyst must do is to arrive at the intuition of some higher level—middleground or background—and to test that intuition against the totality of impressions made by the piece. Each higher level—from piece to foreground to the various layers of middleground and to the background—represents a horizon that clarifies and gives meaning to the level beneath it; but not every element of the higher level need be literally present in the lower one." Schachter, "Structure as Foreground: 'das Drama des Ursatzes,'" 302.

[90] Rothstein, "Americanization," 201.

[91] Beach, "Current State," 297.

in Fin-de-siècle *Vienna*, Cook summarizes two related problems in Schenker's writings: "There is in this way a double mismatch in Schenkerian theory: on the one hand between the monism of Schenker's theoretical proclamations and the relative pluralism of his analytical practice, and on the other between the relative monism of Schenker's analytical practice in the last phase of his work and his earlier, more pluralist practice."[92] Schenker's later-life theoretical fixation on the *Ursatz* is symptomatic of both of these "mismatches," and accounts for a large percentage of the objections that have been raised.

Many of these criticisms are entirely valid. A great many of them also stem from our own fixation on *FC*, a state of affairs that resulted naturally from the long-awaited publication of Oster's translation in 1979, which suddenly made this work accessible to a wide readership. However, despite its obvious importance, Schenkerians have always been aware of the fact that *FC* alone does not fully represent Schenker's thought.[93]

In addition, both Schachter and Rothstein publicly backed away from Schenker's emphasis on the *Ursatz* in the few years directly following the publication of *FC*. In "Analysis by Key," Schachter is very critical of Schenker's discussion in *FC* of "illusory keys" (which strongly emphasizes the *Ursatz*), and in this essay he also states that "to concentrate on

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[92] Cook, *Schenker Project*, 295. Cook's discussion here draws partly on material from Joseph Lubben's dissertation, "Analytic Practice and Ideology in Heinrich Schenker's *Der Tonwille*." See also Lubben, "Schenker the Progressive: Analytic Practice in *Der Tonwille*."

[93] In fact, no one was more aware of this than Oster himself. Most of Schenker's estate was given to Oster by Schenker's widow, Jeanette, in order to protect it; Oster studied it assiduously, and was preoccupied with various materials from it, not just the documents pertaining directly to *Der freie Satz*. (See Schenker, *Free Composition*, xvii-xviii and 166; and Forte's essay, "Schenkerians and Schoenbergians in America," 84.) According to Forte's memorial in "Ernst Oster (1908-1977) In Memoriam," translating *Der freie Satz* "was not . . . the most important task in Oster's opinion." Forte provides the following passage from a 1966 letter to him from Oster: "I sometimes really feel that, having all those unpublished analyses available would be almost as important as all of Schenker's published books together." Oster, letter to Forte, October 13, 1966; cited in Forte et al., "Ernst Oster in Memoriam," 342.

background continuity to the exclusion of foreground disruptions is to produce a skewed picture of a piece or passage."[94] In his "Americanization" essay, Rothstein praised Schachter's "thoughtfully critical remarks [at the 1983 keynote address of the national conference of the Society for Music Theory] on Schenker's sometimes excessive background orientation—in *Der Freie Satz* especially."[95] And, of course, Salzer was far more free in his treatment of global-level structure than Schenker was.

Cohn's assertion of a distinction between "Schenker's theory" and "Schenkerian theory" is related to Cook's "double mismatch," and should be briefly addressed here. The differentiation Cook makes between "monism" and "pluralism" is in fact borrowed from Cohn, and Cohn's essays have helped to articulate various aspects of these mismatches.[96] But while Cohn also engages with sources other than *FC*, it is still unduly emphasized for a contribution that aims to clarify what Schenker's theory is (although Lubben's work was not published until just after Cohn's). Accordingly, Cook concludes: "given the extent to which the paradigm of constructive conflict is in fact anticipated in Schenker's analytical practice of the 1920s, however, it can be argued that what is needed is not so much exorcism as winding the clock back" ("exorcism" refers to a remark by Cohn regarding "the watchful eye of Schenker's ghost").[97]

The first mismatch above—the disconnect between theory and practice—entails a striking combination of two elements: dogmatism and apparent lack of rigor (both famously discussed in Rothstein's "Americanization" essay). This, in part, has made Schenker vulnerable

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[94] Schachter, "Analysis by Key," 150, 157. Cook also cites this passage of Schachter; see Cook, *Schenker Project*, 284.
[95] Rothstein, "Americanization," 200.
[96] See Cook, *Schenker Project*, 260, 296.
[97] Cook, *Schenker Project*, 295; Cohn, "Schenker's Theory," 19.

to criticism from both subjectivists and objectivists. Dogmatism, which is connected to intuitionism, is in fact itself at odds with both subjectivists and objectivists: on the one hand it leaves no room for alternative viewpoints, while on the other hand it is unconcerned with providing an objective basis for the viewpoint offered. The latter issue is reflected in "Competing Myths: The American Abandonment of Schenker's Organicism," where Robert Snarrenberg creates a table of "verbal oppositions used by Rothstein [in "The Americanization of Heinrich Schenker"] to depict a shift in Schenkerian rhetoric"; Snarrenberg chooses to place "dogmatic" in opposition to "objective."[98] The former issue, that of alternative viewpoints, will now be examined.

Specifically, let us consider the question of whether or not there is only one "correct" analysis for a given piece of music. The assertion or implication that this is the case is troubling to many scholars.[99] Both Salzer and Schachter, however, have said otherwise. Salzer's *Structural Hearing: Tonal Coherence in Music*, which represented Schenkerian theory to most native English speakers for almost thirty years, offers a very balanced perspective on this question:

> To the experienced student and listener, many compositions yield their musical direction in an unequivocal manner; there appears to be no doubt as to their meaning. But sometimes one arrives at two equally plausible readings. It is only after careful weighing of these possibilities that one reaches a final decision. After repeated playing or listening, one of the two versions almost always turns out to be more convincing than the other. Occasionally, however, if seldom, it happens that two versions are equally correct; which

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[98] Snarrenberg, "Competing Myths," 31. Also regarding the Americanization of Schenkerian rhetoric, note that the use of the word "structure" in Schenkerian contexts is an American phenomenon. However, while the origin of this usage is often attributed to Salzer, Schachter states that it was Hans Weisse who introduced it, "possibly in collaboration" with Adele Katz. Schachter, "Felix Salzer (1904-1986)," 106-07. Also see Snarrenberg, "Competing Myths," 49; Jairo Moreno's review of Naomi Cumming's *The Sonic Self: Musical Subjectivity and Signification*, 292-293; and Yust, "Formal Models of Prolongation," 22.

[99] Marianne Kielian-Gilbert's "Interpreting Schenkerian Prolongation" is a substantive and insightful contribution that considers this issue at length.

> means that it cannot be proven by any technique of analysis that one is more convincing than the other. One listener may decide for one version because it seems to him personally more adequate, the other may decide for the other reading because it has just as many points in its favor.[100]

Indeed, this passage seems like an accurate description of how most of us make most decisions.

Salzer's attitude towards this issue seems to have been passed down to his student, Schachter. Unfortunately, many commentators have merely seized upon Schachter's well-known but often misunderstood article, "Either/Or," the very title of which invites it to be pigeonholed with little regard to its nuances. The main point is often lost as well, that Schachter mostly addresses what he feels are merely perceived ambiguities in Schenkerian analysis: "This is not to deny the possibility that ambiguity and multiple meanings might exist in tonal music; they certainly do exist. But their function, in my opinion, is more narrowly circumscribed than some analysts, perhaps misled by false analogies to language, seem to believe."[101] That is why the early examples in the article are so straightforward, so as to lead the reader from less ambiguous examples to more ambiguous ones, and finally to what Schachter considers to be a true double meaning, in the section entitled "Both/And."[102]

So, does Schachter believe that there is always only one correct analysis? His position is clarified in "A Dialogue between Author and Editor," from the beginning of *Unfoldings*.[103] One of Joseph Straus's questions to Schachter (not *necessarily* reflecting Straus's own views, of course) is: "In this postmodern age, how firmly do you still cling to the notion that some readings are simply better than others? Are there correct and incorrect interpretations? Better and worse

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[100] Salzer, *Structural Hearing*, 260-61.
[101] Schachter, "Either/Or," 124.
[102] Russ, Cohn, and others have nevertheless argued over these early examples.
[103] Note that "A Dialogue between Author and Editor" was published in *Unfoldings* nine years after "Either/Or"—which was reprinted in *Unfoldings*—was initially printed in 1990 as a chapter of *Schenker Studies* (edited by Hedi Siegel).

ones?" Schachter's unequivocal answer: "yes to both questions."[104] Put this way, the question almost seems ridiculous. If Schachter's analyses are no better than anyone else's, then why edit a volume of his work?

However, the issue of subjectivity and objectivity does arise significantly when comparing the graphs of highly trained analysts (perhaps that is what Straus really meant), assuming that the structure of the piece in question is complex or ambiguous enough that their analyses do diverge substantially from one another (this, of course, is the situation that Salzer describes above). And when Straus asks Schachter about "Either/Or" in "A Dialogue between Author and Editor," Schachter's response is:

> Even Schenker apparently had a file labeled something like "$\hat{3}$?—$\hat{5}$?—$\hat{8}$?" Curiously, when this decision is really difficult, it's often not so important to decide. Once one gets beyond the first middleground level, the significant features of a piece may well have the same meaning and function with either *Ursatz* form; if they don't, the decision is usually pretty clear. Schenker's very interesting reading of the "Haffner" Symphony slow movement is from $\hat{3}$. I prefer reading it from $\hat{5}$, but I don't think for that reason that my analysis is significantly better than his.[105]

Again, the view Schachter expresses here is in complete accordance with Salzer. Moreover, neither of Schachter's statements is tantamount to asserting that there is only one correct analysis for a given piece.[106]

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[104] Schachter, "Dialogue," 12.
[105] Ibid., 12-13.
[106] Lerdahl and Jackendoff adopt a stance similar to that of Salzer and of Schachter: "The 'experienced listener' is meant as an idealization. Rarely do two people hear a given piece in precisely the same way or with the same degree of richness. Nonetheless, there is normally considerable agreement on what are the most natural ways to hear a piece. A theory of a musical idiom should be concerned above all with those musical judgments for which there is substantial interpersonal agreement. But it also should characterize situations in which there are alternative interpretations, and it should have the scope to permit discussion of the relative merits of variant readings." Lerdahl and Jackendoff, *Generative Theory*, 3. For a related discussion, see ibid., 197.

In his "*Formenlehre*" essay, Smith also observes that an analysis of the essential voice-leading structure of a piece can be largely unaffected by using a different primary tone. In the following passage, he compares Schenker's middleground sketches of two complete movements to his own:

> An important question to consider at this point is whether alternative analyses with different primary tones make much difference. Consider Exs. 3a and 3b, with almost identical first-section voice-leading. In Ex. 3b, $\hat{3}$ goes to $\hat{2}$ and $\hat{1}$ goes to $\hat{7}$, over a bass $\hat{1}$ moving to $\hat{5}$, just as in Schenker's analysis; his long stationary $\hat{5}$ is now subordinate to the fundamental-line $\hat{3}$-$\hat{2}$, but it is still there, in the other voices. Similarly, the difference between Exs. 29a and 29b does not seem primarily a matter of structural voice-leading; Schenker's $\hat{8}$-$\hat{7}$-$\hat{6}$-$\hat{5}$ is part of Ex. 29b, but now subordinate to the upper-voice 3-2 that is implicit in the inner voices of Ex. 29a. In both cases, the structural distinction that results from different primary notes is hierarchical, that is, a matter of which lines are subordinated to which—that is, a matter of which line supplies the primary note![107]

Whereas Straus and Kielian-Gilbert question the valuing of some analyses over others, Smith seems to object to the fact that different readings are even possible. Complaining that "in many cases a choice between several possible backgrounds is so difficult as to be more or less arbitrary," he mentions in an endnote that "William J. Mitchell *admits* that there may be more than 'one exemplary linear-harmonic analysis of a work.'"[108] But Mitchell's statement is only an "admission" if one views the subjectivity of artistic interpretation merely as being "arbitrary"; for Schachter, a situation where the choice of primary tone is difficult is a point of intellectual curiosity.

In his later discussion of the role of salience in primary tone selection, Smith again reveals his discomfort with subjectivity: "The difficulties that arise from using melodic emphasis as a criterion [for selecting the primary tone] are manifold. For one thing, determining emphasis

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[107] Smith, "Schenker's *Formenlehre*," 275. The examples referred to appear on pages 206 and 229.

[108] Ibid., 195, including note 19 (which appears on page 282). Emphasis added. Interior citation from Mitchell, "The *Tristan* Prelude: Technique and Structure," 203.

is such a subjective affair: what one analyst cannot ignore may be just an extraneous detail to another."[109] However, Smith makes a connection here that is significant for this study: that salience is perceived more subjectively than is stability.[110]

As Lerdahl notes, considerations of stability "far outweigh" those of salience in tonal music. However, primary tone selection is one area where salience often plays a larger role. This is probably due to the fact that by definition, stability is not a consideration in selecting the primary tone, which must be supported by the tonic chord.[111] Since salience is more subjective, equally valid alternate readings may occur (although in many pieces the selection of the primary tone is straightforward, and trained analysts would be unlikely to disagree).

Smith, of course, still feels that background structure is important, and hence that primary tones are necessary, but insists that objective selection criteria are necessary, and bases them upon traditional formal divisions:

> Schenker's theory desperately needs to find a way to choose effectively between competing fundamental structures within the analysis of any particular piece. Traditional form may be the best candidate for the job of picking primary notes; in fact, it may be the *only* candidate for this job. If we reject this argument and revert to Schenker's practice of redefining form in terms of voice-leading structure, we return to a situation without any dependable objective criteria for preferring one structure over another.[112]

One cannot help but observe the similarity of Smith's language to that of Lerdahl and Jackendoff in the last clause of this passage, which could just as well have come directly from

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[109] Smith, "Schenker's *Formenlehre*," 275. Smith is responding here to Allen Forte and Steven Gilbert's guidelines for primary tone selection found in *Introduction to Schenkerian Analysis*.
[110] Lerdahl and Jackendoff also discover this, will be discussed in Chapter 2. A passage from "Salient Features" comes to mind as well: "Riemann's reading of the music was different: what was salient for Beethoven was not so for Riemann." Rothgeb, "Salient Features," 183.
[111] Note as well that stability within the tonic chord itself is a moot issue, as $\hat{1}$, while being the most stable tone, is less likely as a primary tone. Also, the issue of local-level stability may be a consideration if a particular reading involves displacement.
[112] Smith, "Schenker's *Formenlehre*," 276. Emphasis in original. For several other references to the word "objective," see pages 274 and 275.

GTTM. His reference above to "arbitrary" choices is also significant, and connects with the passage of Lerdahl and Jackendoff regarding "principled decisions."[113]

One of the more attractive aspects of *GTTM*'s rule system is that it does not prescribe any particular background structure, as discussed above. Objective approaches to analysis usually suffer in that they must constantly create more and more rules to cover more and more particular situations, but *GTTM* avoids this problem as regards the background. However, Smith, who has clearly been influenced by *GTTM*, does succumb to this predicament, a fact he recognizes on some level. Having objected that Schenker did not sufficiently address works with unusual formal plans, he acknowledges that "at this point it is difficult to predict whether a formal theory of structure will manage to do any better."[114]

Even though Smith posits a whole new fleet of *Ursatz* models, there are still situations for which this expanded repertoire is insufficient. For example, there is the Beethoven symphony movement Schachter analyzes in "The Triad as Place and Action" (as mentioned below), and the first movement of Beethoven's *Waldstein* sonata, to which Smith alludes. Of course, Smith likely omits modulation to III♯ (as in the *Waldstein*) from his charts because it is so uncommon, but that is precisely the point. The literature is simply too vast, rich, and diverse for any theory to offer anything more comprehensive than guidelines. The best way to deal with "progressive" or "problematic" compositions is not by trying to cover all possible bases but by following

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[113] Again, see Cohn, "Autonomy of Motives," 168, for a passage that relates to both Smith and Lerdahl and Jackendoff.

[114] Ibid., 271. Smith's annotations here also indicate several sources that do deal "fairly successfully" or "much more promisingly" with such pieces—most notably David Beach's "Schubert's Experiments with Sonata Form" and Peter Smith's "Brahms and Schenker: A Mutual Response to Sonata Form"; see 292 (notes 114 and 115).

GTTM's lead (in general) and simply allowing the background structure to emerge in whatever way is most natural.[115]

Or, one might look back to Salzer's *Structural Hearing*, where he addresses the matter unequivocally:

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[115] Smith, of course, does not merely introduce additional *Ursatz* models, but also redefines background structure in terms of form. Curiously, doing so involves salience, but of a different (and generally less ambiguous) sort than that potentially involved with the selection of the primary tone. Traditional formal divisions are themselves ascertained on the basis of the salience conditions that establish grouping boundaries.
Smith's omission of modulation to ♯III is ironic, considering the fact that Schenker himself analyzed the first movement of the *Waldstein*, and Smith's pointed criticism of that analysis: "What of Schenker's own analyses where he chose to ignore emphatically articulated pitches, presumably in order to find a coherent structural descent? A particularly egregious example is the brief discussion in §313 of the first movement of Beethoven's *Waldstein* Sonata as a $\hat{5}$-line—even though it is hard to find a piece whose initial $\hat{3}$ is *more* emphasized than the *Waldstein*!" (Smith, "Schenker's 'Formenlehre,'" 275, including note 130, which appears on page 294. Emphasis in original. Beach and Roger Kamien also analyze this movement from $\hat{5}$. See Beach, "Schenker's Theories: A Pedagogical View," and Kamien, "Subtle Enharmonic Connections, Modal Mixture, and Tonal Plan in the First Movement of Beethoven's Piano Sonata in C Major, Opus 53 ('Waldstein')."") But this objection itself is rather simplistic, as repetition is only one form of emphasis, or salience, and the repeated chords here are not so much individual assertions as they are a collective statement, similar to a trill or tremolo (in this connection, note the repetition of the opening material as a written-out tremolo at the outset of the transition). Sketches in fact indicate that the opening of the movement was originally conceived in this way—as a written-out tremolo. (See Kamien, "Subtle Enharmonic Connections," 102n.) As we have seen, both Schachter and Lerdahl and Jackendoff articulate a principle of change, which in fact often usurps the principle of repetition. In these measures, changes of rhythm, texture, and register all contribute to the salience of $\hat{5}$. G is salient not only because it too is repeated, but also because short note values on E (and F♯) give way to longer values on G. The sixteenth-note diminutions attached to these Gs draw additional attention to the relative length of the quarter-note and eighth-note Gs, and heighten the sense of rhythmic and textural change. Furthermore, the G is emphasized by changes of register, which also contribute to a more dynamic texture than that of the static opening chords. Rothstein, in a discussion of Schenker's "articulated legato," points out several other subtle factors contributing to the salience of G. (Rothstein, "Heinrich Schenker as an Interpreter of Beethoven's Piano Sonatas," 21.) G is also locally stable, as it is the root of the chord and tonic of the key of G; the arrival at G releases the melodic and harmonic tension of the previous measures. One may nevertheless feel that these observations are outweighed by the overall effect of the repeated Es; this illustrates one of Smith's (and my own) points—that salience is often quite subjective.

> The necessity of approaching every piece without any preconceived idea and without any wish to imply or impose our knowledge can hardly be overstressed. To this end it would seem almost imperative to forget certain frequently occurring techniques of musical construction whenever one attempts to clarify the contents of a composition, paradoxical as this might sound. We must always try to follow the music, otherwise we shall run the grave danger of providing an explanation of what we want to hear rather than of what the piece actually conveys.[116]

Salzer's convictions are exemplified in his treatment of ascending background lines, which David Neumeyer discusses in "The Ascending *Urlinie*." In contrasting Salzer's approach with that of Schenker (as expressed in *FC*), Oster, and Schachter, Neumeyer notes that "Felix Salzer, on the other hand, seems to take the rising *Urlinie* for granted, suggesting only that very few pieces make use of it."[117] Salzer thus recognizes exceptions to the rule that background lines must descend, but he does not attempt to make specific stipulations regarding those exceptions, leaving it instead to the analyst's judgment to decide when and how an ascending *Urlinie* makes sense.

Smith also allows for ascending forms of the *Urlinie* (as well as other deviations from Schenker's models), but does so in a very different way. He does not claim to be comprehensive in this contribution, as evidenced above and in the description of his chart of "repertoire of background structures for open forms" as presenting "*some* of the structures that underlie two- and three-section open forms with various harmonic profiles."[118] However, in an endnote he states: "When a comprehensive body of non-dominant open-form analyses has been assembled, no doubt many of these unorthodox structures will be much corrected and revised."[119] It would seem that Smith's larger vision is for scholars to develop a codified taxonomy of *Ursatz* forms

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[116] Salzer, *Structural Hearing*, 260.
[117] Neumeyer, "Ascending *Urlinie*," 279.
[118] Smith "Schenker's *Formenlehre*," 263. Emphasis added.
[119] Ibid., 291 (note 101).

that does attempt to cover all the repertoire, and where one may simply—and rather mindlessly—plug in the formal parameters of a composition (open/closed, reprise/no reprise, key scheme) in order to determine the primary tone.[120] This latter observation is confirmed by Smith's statement that "if we begin an analysis with a formal classification, we can then select a fundamental structure from those associated with that particular formal category—and thus the primary note is determined."[121] But is it really that simple?

Some Responses to Work of Charles Smith

To begin with, Smith's Example 39 (see our Figure 1.1, below) provides *Ursatz* models with primary tones of $\hat{3}$ or $\hat{5}$ for modulations to ii, IV, and vi in three-section forms.[122] One must still make a decision choice between primary tones in these cases. Moreover, many other forms than those shown are possible (for this chart, he states that only the "most plausible" are shown). For modulations to iii or the parallel minor, and for non-modulating ("sectional") forms, Smith shows the line as $\hat{3}$-$\hat{3}$-$\hat{3}$, but $\hat{5}$-$\hat{5}$-$\hat{5}$ works as well.[123] (One might object to this $\hat{5}$-$\hat{5}$-$\hat{5}$ line because of the middleground dominant chord with $\hat{4}$ in the soprano, shown with filled noteheads, but Smith's explanation indicates that in this case the "black notes" constitute only "optional retransitions.") For that matter, $\hat{8}$-$\hat{8}$-$\hat{8}$ would work in modulations to the parallel minor and for

[120] One might also wonder what precisely Smith means by "comprehensive" in this passage. Does he mean that every non-dominant open-form movement by each of Schenker's "masters" will be analyzed and categorized? If so, then one would not even need to plug in the formal parameters for such pieces to find the primary tone, but simply look it up in a database. If not, then clearly the system would not be leak-proof, and one's subjective judgments would still be necessary when more unusual pieces were encountered.
[121] Ibid., 276.
[122] In three-section closed forms Smith uses the "beginning of the reprise as the point of deepest-level formal closure." Ibid., 265.
[123] For three-part closed forms, Smith eliminates from his background models the descents that occur within each section.

non-modulating forms, as well as in pieces that modulate to IV and vi. Granted, these lines would be less common, and hence are excluded from the chart, but since Smith is concerned with accounting for a greater number and diversity of pieces, these possibilities are significant.

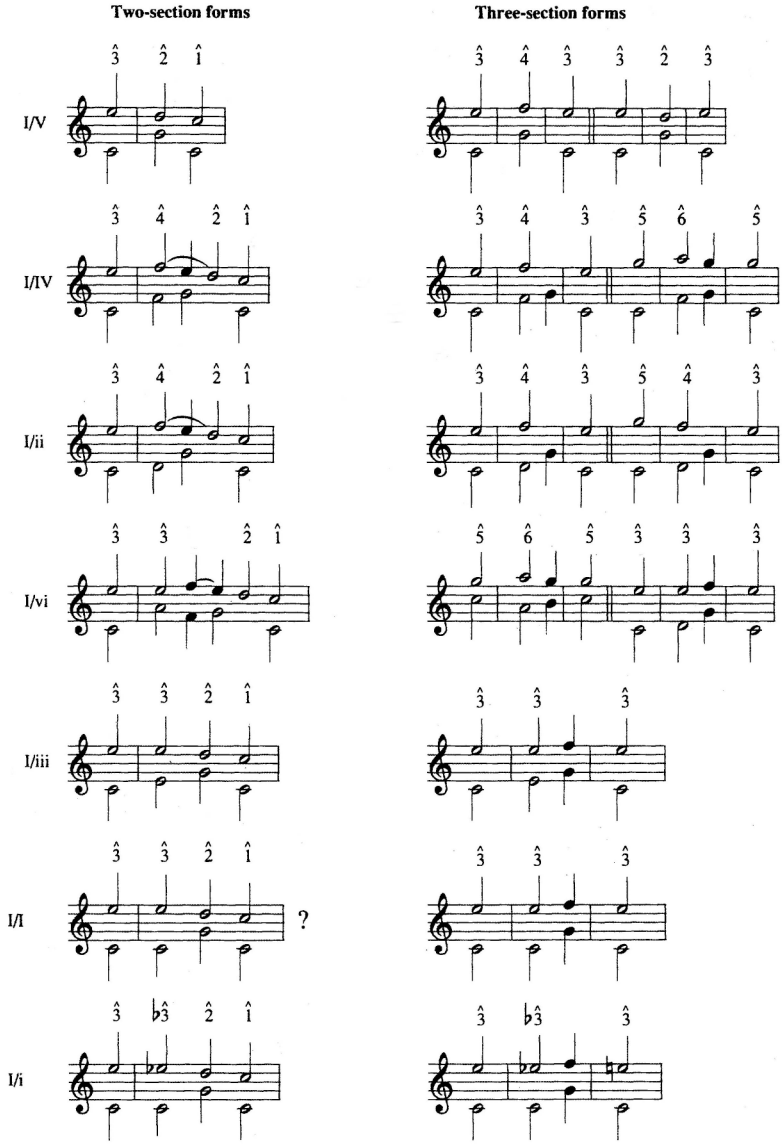

Figure 1.1. Smith's Example 39, displaying "a repertoire of background structures for closed forms." Smith, "Schenker's *Formenlehre*," 266.[124]

[124] In the second background structure given for three-section forms modulating to vi, the lower voice D is surely a typographical error, and should be A.

If Smith's method fails to reduce the subjective freedom facing the analyst in many cases, it also conversely fails to provide sufficient freedom from top-down restrictions in other scenarios. Smith's issue with the selection of the primary tone still exists when more than one primary tone is possible; yet, when form does dictate the primary tone in his system, the issue of top-down influence that he also raises (more legitimately, in my opinion) is actually exacerbated. In the latter situation, we *must* use the given primary tone even if another one is far more salient or "works" better. While unfortunately the traditional approach sometimes makes us choose between a strongly salient primary tone or one that works better, we do at least have a choice.

Purists might argue that "masterworks" would never contain such a conflict, perhaps even defining the concept of a masterwork in such terms. But composers—especially the "great masters"—have a habit of exploding the theoretical limitations we may establish, and it can never be assumed that there are certain things they will not do. We may refer to pieces that do not work out as "problematic compositions," but this unfortunately suggests that the "problem," if there is one, lies in the music and not in the theory.[125]

In arguing that the conflict above is irrelevant, such purists might also assert that salience in these cases is deceptive. But, as Smith observes, it is paradoxical to decide that salience is deceptive in selecting the primary tone, since it is also used as a criterion for selecting it: "It appears as if the only things in the foreground that can lead us to the background cannot be trusted to do so."[126] Although an insightful observation, this is really only a variation of a more

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[125] See David Neumeyer, "Fragile Octaves, Broken Lines: On Some Limitations of Schenkerian Theory and Practice," 13; James Baker, "Schenkerian Analysis and Post-Tonal Music," 153; and Salzer, *Structural Hearing: Tonal Coherence in Music*, 261-63 (for more on Salzer's use of the term, see Chapter 2, note 254). By contrast, a section of Laufer's review of *Free Composition* is titled "Problematic Readings."

[126] Smith, "Schenker's *Formenlehre*," 275.

general top-down/bottom-up issue in Schenkerian analysis that has been dealt with in the literature.

For example, in his review of Eugene Narmour's *Beyond Schenkerism: The Need for Alternatives in Music Analysis*, Jan LaRue wrote: "I am not certain whether the circularity of Schenker's method robs it of all validity. Does not scientific method also follow this progression from theory to practical proof? Is it not the rigidity rather than the circularity which damages the method?"[127] (His point about "rigidity" is certainly apropos to the present discussion as well.) Two years later, in "A Commentary on Schenker's *Free Composition*," Schachter addressed the issue substantively:

> If one needs to understand the background to make sense of the foreground, one also needs to understand the foreground to make sense of the background—a seemingly hopeless impasse. Actually it's a heuristic problem that confronts people all the time and in areas far removed from musical analysis: one can grasp neither the part without the whole nor the whole without the part. But one copes, somehow. One looks up words in the dictionary to find out how to spell them, but if one can't spell them at all, one can't look them up; a dictionary won't be of much help to someone who thinks that "cat" might be spelled "hqz" or "bbbbb." In analyzing music one begins in somewhat the same way as in looking up words—with hypotheses about the shape of the whole or about some of the parts. Only there is no dictionary to tell the analyst whether his guesses are right or wrong.[128]

Much later, and one year after Smith's article was published, Straus indicated his agreement with Schachter's assessment in "Response to Larson." Here, he describes a separate issue as having "the same theoretical impasse with the same lack of practical consequence" as the problem Schachter addresses.[129]

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[127] LaRue, review of *Beyond Schenkerism*, 588.
[128] Schachter, "Commentary," 198.
[129] Straus, "Response to Larson," 139 (note 3). Straus is responding here to the same article by Larson that Lerdahl responds to in his own "Response to Larson," mentioned above. Larson cites the same passage of Schachter, thus prompting Straus's remark. For more on bottom-up / top-down issues, see Chapter 2, pages 108-10.

If some Schenkerians assert that salience is deceptive in such circumstances (and to the extent in an individual case that salience is involved in the process Schachter describes, and if the disparity is big enough to be troublesome), they may simply be putting a rhetorical spin on the situation. In other words, the analysis may indeed be less compelling. This prompts a general clarification (which has perhaps been implicit in our discussion): that while surface salience may not correspond with stability, appeals to it are still made, particularly when a choice must be made for which stability considerations do not immediately provide the answer. For example, in "Either/Or," Schachter relies upon "the rhythmic emphases and the inner articulations" of an example to help make a decision, in addition to local-level motivic connections, of course, which constitute parallelism and thus salience.[130] In his "Autonomy of Motives" article, Cohn argues that if we "abandon the proposition, so fervently held by Schenker in his final years, that the *Ursatz* is the sole source of unity," then it "will become less important to assert that pitch analysis always precedes rhythmic analysis, and it will become easier to recognize that everyday Schenkerian practice undermines this assertion by appealing to duration, metric placement, and other aspects of grouping and meter in the construction of pitch interpretations."[131] Of course, we have already seen above that the extensive rhythmic work of Schachter and Rothstein clearly establishes these facts, yet Cohn never cites this work, except for one brief and unrelated quotation from "A Preliminary Study." Instead, he states in a footnote to this passage that "this point echoes" a section of *GTTM*. (Surprisingly, that is also the only reference to *GTTM* in his article.)

In the quotation given above, concerning the question of "which lines are subordinated to which," Smith refers to examples from much earlier in his article. We now examine a passage

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[130] Schachter, "Either/Or," 125.
[131] Cohn, "Autonomy of Motives," 169.

that occurs in conjunction with Smith's Example 29a (this example is further discussed below, and is reproduced directly from *FC* as our Figure 1.2):

> All of the [three-part] tonic-to-dominant open forms are analysed as $\hat{3}$-lines, with one exception—the Trio to Mozart's A major Sonata (Ex. 29a), shown as an $\hat{8}$-line. This near consistency is formally impressive; however, one striking anomaly is apparent: Schenker's indecision about the location of the division within such an open form. Two pieces show the interruption at the end of the first section (Exs. 25 and 26); the other three place it at the end of the middle section (Exs. 17 and 30), as do the two non-dominant open forms. (Ex. 29a omits any explicit sign of the division.) It may be a moot point whether or not we should expect an interruption to appear at comparable places within comparable forms—but if we do, then Schenker fails us here.[132]

Smith's reference to what is "formally impressive" is a strong indication of where his values lie, but the exceptions to Schenker's "near consistency" themselves are even more revealing.

As far as Schenker's inconsistency regarding the placement of the division is concerned, let us first observe that his sketches, shown in Smith's Examples 17 and 30, are strikingly similar (particularly since these two movements come from the same piece) and are therefore analyzed in the same way with respect to the interruption. In both cases, the first occurrence of $\hat{2}$ is composed-out with an octave-progression that stretches across the repeat sign and that employs a lowered third scale-degree, even though one of the movements is in the major mode.[133]

Of greater significance are the two non-dominant forms Smith mentions. His diagrammatic summary of Schenker's analyses clearly and correctly indicates that $\hat{2}$ over V is not even arrived at until the middle section, so of course Schenker does not place the interruption during the first section. But to observe that the dividing dominant is not reached until the middle

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[132] Ibid., 227, 229.

[133] Incidentally, Smith's Example 29b (our Figure 1.3, below) is also in major and is drawn from the same piece (it analyzes the trio from the second movement whereas example 17 analyzes the minuet), and also employs the lowered third scale-degree just before the reprise. But there is a familiar sound to this lowered third scale-degree; one does hear this formula with some frequency in Mozart's piano sonatas (and probably elsewhere as well).

section in non-dominant forms is tautological. Surprisingly, Smith is not simply concerned with the question of where to locate the interruption—where $\hat{2}$ over V is first reached or at the end of its prolongation, just before the primary tone is regained at the reprise; rather, his criticism seems to pertain to the fact that Schenker found that $\hat{2}$ over V was first reached at different formal locations in different pieces. Far from being a "moot"—or arguable—point, it is just wrongheaded to think that we might "expect an interruption to appear at comparable places within comparable forms," particularly if dominant and non-dominant forms are lumped into one category. Why, in this literature which we have described as being vast, rich, and diverse, would composers decide to always reach $\hat{2}$ over V at the same place in the form? To criticize Schenker for this sort of inconsistency is tantamount to criticizing composers for their inconsistency, and this is precisely the sort of situation to which Salzer's words apply.

Finally, let us consider Smith's treatment of the Mozart trio movement mentioned in the excerpt. In the passage discussed earlier, Smith observes that the voice-leading of his analyses and Schenker's is essentially the same. He then argues that "the real and substantial difference in both of these analyses is that Exs. 3b and 29b [Smith's analyses] clearly reflect the forms of their pieces, whereas Exs. 3a and 29a [Schenker's analyses] do not; in fact, they distort and misrepresent what is happening formally."[134] That is absolutely true; however, Smith pays a price for his fidelity to form.

Smith's Example 29a reproduces Schenker's Figure 20, number 4, from *FC*. Because Example 29a is so small, I have reproduced Schenker's graph directly from *FC* in my Figure 1.2,

[134] Ibid., 275.

omitting Smith's simple diagram beneath showing the three-part division and modulation to the dominant. Smith's analysis appears as his Example 29b, and is reproduced in my Figure 1.3.[135]

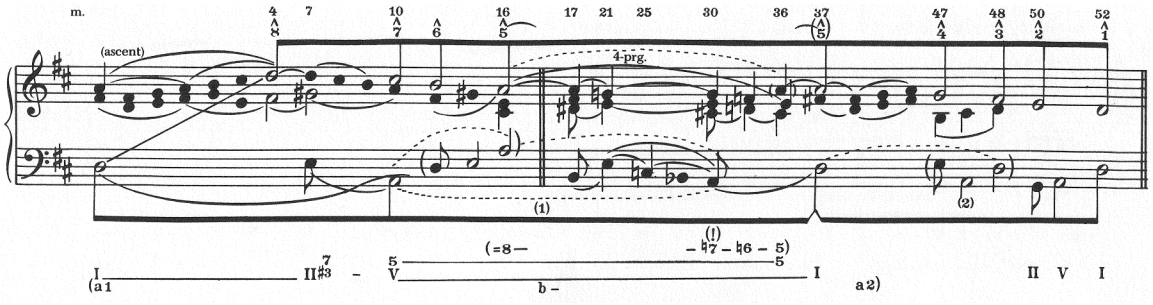

Figure 1.2. Schenker's analysis of Mozart, Sonata in A Major, K. 331 (II), Trio. From Schenker, *Free Composition*, Figure 20,4.

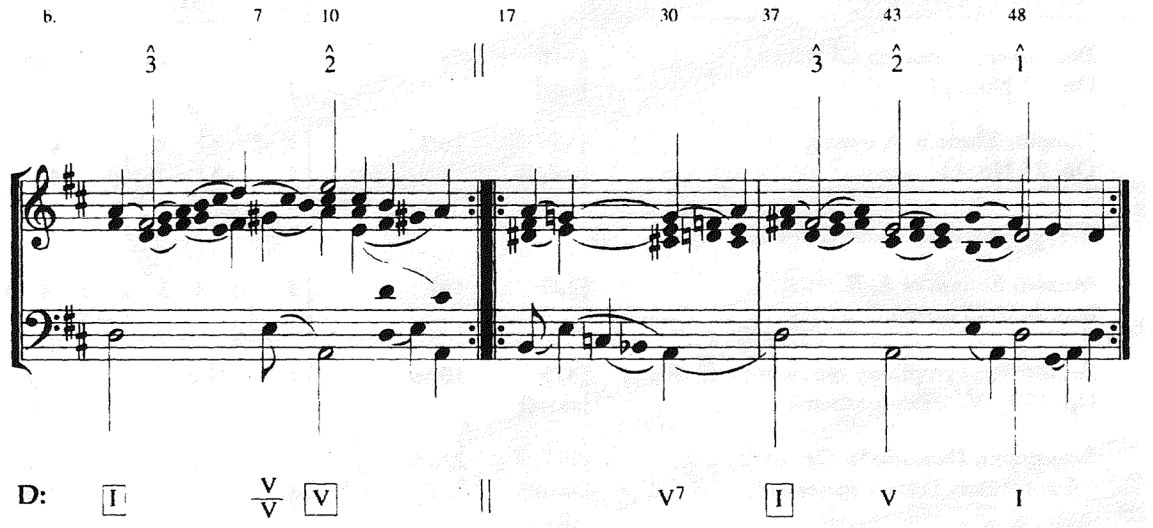

Figure 1.3. Smith's analysis of Mozart, Sonata in A Major, K. 331 (II), Trio. From Smith, "Musical Form and Fundamental Structure: An Investigation of Schenker's *Formenlehre*," 229.

The opening measures of the trio are shown in Figure 1.4. One immediately notices how unconvincing $\hat{3}$ is as a primary tone.[136] F♯ appears in the soprano only on the weak(est) beats of

[135] Ibid., 229.

[136] Smith treats this trio section as a complete movement, as can be seen in the passage cited earlier. Schenker himself uses the high-level melodic structure of this analysis to exemplify the

measures 1 and 2 (and 4), where stepwise lines lead it directly back up to A. A, occurring on the downbeat of each of the first three measures, is far more salient than F♯. The agogic accents embedded in the contour of these first two or three measures are particularly significant as they define the meter in the absence of any harmonic motion. The pedal point that contributes to this harmonic stasis is mirrored in the inner voice A, reinforcing our sense that the soprano A sits on a plateau, almost functioning as an inverted pedal point. The inner voice A shifts up to D at the beginning of measure 3, prefiguring the soprano motion up to D (constituting an initial ascent), which is punctuated by the first bass (and harmonic) motion of the piece, A to D. The significance of this ascent is then confirmed when it is echoed at a higher register.

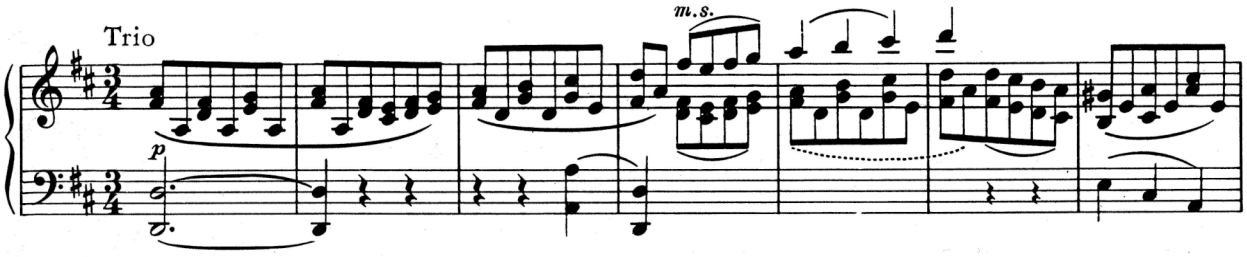

Figure 1.4. Mozart, Sonata in A Major, K. 331 (II), Trio, mm. 1-7.

The reprise of the opening material—and concomitant return to tonic—is given in Figure 1.5. The theme here is beautifully transformed from its original shape via a sort of melodic and harmonic inversion, with foreground lines leading us from D down to G, arriving at the subdominant harmony, rather than from F♯ up to A, arriving at the dominant harmony. (To entertain the notion of inversion here, the first F♯ in measure 2 may be viewed as standing-in for

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octave-line model given in his Figure 19,b, but renders it in Figure 35,1 as a neighbor tone (D) to the primary tone C♯ established in the Menuetto. (Schenker, *FC*, §78.) In order to be consistent with Smith's discussion, I will treat this trio section as a complete movement, as he does. All references to "*Ursatz*," "primary tone," "initial ascent," etc., should be interpreted accordingly.

D.) Thus the goal-directed dominant-tonic motion that previously accompanied the arrival at the primary tone is replaced by plagal motion that keeps us hovering around A, the voice exchange between G and B constituting a double neighbor to A in the soprano. The primary tone D is touched upon with the soprano motion A to D in measure 38 (and 40), recalling the initial ascent, but is only given an embellishing role here. Indeed, Schenker's graph indicates that A is the active tone during these measures.

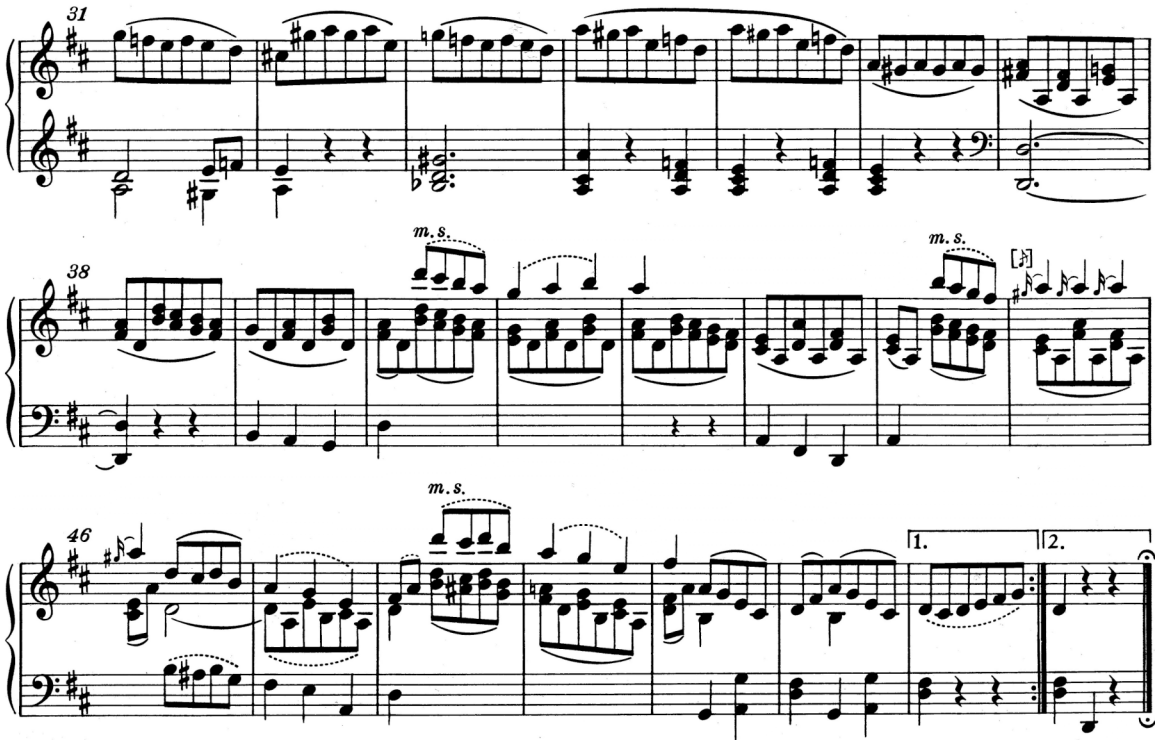

Figure 1.5. Mozart, Sonata in A Major, K. 331 (II), Trio, mm. 31-52.

Smith, on the other hand, wishes to reflect the form in his background structure: he is therefore forced to ignore these substantial thematic alterations and instead simply show an interruption with a return back to his primary tone of F♯, which is even less convincing here than it was before. Furthermore, while he aims to represent the form in his analysis, one aspect of

form—cadential structure—is misrepresented: since F♯ does not fit into the dominant harmony of measures 43 through 47 (as A does in Schenker's reading), Smith is obliged to descend to E here, and then to D in measure 48, even though the tonal pitch space clearly has not been closed off at this point.[137] This is another significant divergence from the first section of the piece, where the analogous measure does contain a perfect authentic cadence (the first of several), albeit without a chordal seventh in the dominant harmony.

While Schenker's background analysis does "distort and misrepresent" the form of the piece, Smith's background analysis distorts and misrepresents everything else about it, therefore again failing to heed Salzer's warning that we must "follow the music." Of course, as we have seen, Smith rejects this "everything else" that the background tells us, on the basis (at root) that salience is too subjective to be used as a guideline for selecting the primary tone, and thus the rest of the background analysis. While we (and Lerdahl) have agreed that salience is generally more subjective than stability, this case—like many others—is rather clear-cut, as I have demonstrated. Just because *some* decisions are "so difficult as to be more or less arbitrary" does not mean that we should simply give up entirely on making *any* decisions that are not tied to a rigid set of criteria.

As is generally the case with formal designations, "rounded continuous binary with modulation to the dominant" fails to capture much of anything of interest about the piece other than some basic facts (hence Smith's general contrasting of "conformational/taxonomic" form with "particularist/unique" form). This designation is certainly correct, and reflects important

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[137] On this graph, Schenker does not indicate the dominant harmony in measures 43 through 47. Possible reasons are: first, the high level of the graph (although more detail is shown in the rest of the analysis); second, the $\hat{5}$ is already shared by the tonic harmony and a background-level dominant starting in measure 16; and third, Schenker did not want to highlight the salience of this dominant, as doing so might raise the issue as to why it is not the "structural dominant" (as in Smith's analysis).

aspects of the piece, but it is a simplification since only the first measure of the return of the A section is the same as the original A section. It is exactly because of the differences between the two sections that Schenker does not graph the movement with a normal interruption model, and his analysis captures these differences precisely. Furthermore, Schenker's analysis actually does indicate the traditional form at the bottom of the graph with letter designations.[138]

The insights entailed by the "*Ursatz*" in Schenker's sketch are not easily communicated by prose or other means; it can take several paragraphs to discuss just a few measures. However, assertions about taxonomic form itself are simple to express in a variety of ways, including the way that Schenker does in this case. So why is it so important that form be reflected in the *Ursatz*?

There is also the question of just how traditional form can really be obscured by the *Ursatz*, or anything, since it is so obvious. What analyst could possibly be unaware of the reprise, despite its degree of alteration, after having listened to the piece or seen a score (which are necessary activities for anything other than mere taxonomy), or even just having seen Schenker's graph and noticed a double bar followed by a lengthy dominant prolongation and

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[138] However, such designations often take on different meanings in other analyses by Schenker, reflecting his redefinition of form. For example, consider Figure 153, 3 in *FC* (an analysis of Chopin's Étude op. 10, no. 3 (in E major)), where he provides lower-case letters to indicate smaller formal divisions within the larger sections designated by upper-case letters. In the first major section, which is subdivided into $\{a_1\ b\ a_2\ b\ a_2\}$, the first subsection labeled a_2 marks a clear return to the theme occurring at a_1 and to the primary tone, but the second subsection labeled a_2 marks only a return to the primary tone from a_1, not to its accompanying thematic material. (The a_2 label at the end of the last major section appears to be misaligned, particularly when compared with the last a_2 from the first major section, but this is inconsequential since the original theme at a_1 does not reappear in either case.) Schenker's point, however, is patently obvious. It does not take long to figure out that a_2 here is not a thematic designation in the traditional sense. And, having perhaps been lulled into a sense of complacency by other examples where labels are aligned with traditional formal designations, we suddenly sit up straight when we discover this or another such discrepancy, for which Schenker's prose has, of course, prepared us.

then a structure that is extremely similar to the opening of the piece? On the other hand, it is certainly possible to become confused about Smith's analyses, since they aspire to be relevant to what we actually hear in the music, except—rather arbitrarily—for the background level (and potentially higher-level middleground structures most directly connected to it), where Smith essentially decides that aural relevance is not even worth caring about (or that only form is aurally relevant at the background).

That formal structure is obvious raises another important point—that it is very salient. Much of this salience, however, is subsumed under the subcategory of parallelism; the reprise is melodically (and in some ways phraseologically) parallel to the first section. As will be discussed again in Chapter 2, parallelism is one of the most problematic parameters in reductive analysis, particularly the issue of how to compare it with other parameters; this in fact is a good reason to deal with large-scale parallelism separately, with a traditional formal designation. Cohn discusses some of the issues with parallelism in "The Autonomy of Motives in Schenkerian Accounts of Tonal Music," and in *GTTM* this issue is so problematic that its authors state that "our failure to flesh out the notion of parallelism is a serious gap in our attempt to formulate a fully explicit theory of musical understanding."[139] In Chapter 2 we will see how this gap is closely related to the issue of quantification and subjectivity. With respect to the present situation, the following remark by Lerdahl and Jackendoff is helpful: "When two passages are identical they certainly count as parallel, but how different can they be before they are judged as no longer parallel?"[140]

Aural relevance was also mentioned above. To be sure, the highest levels of a Schenkerian analysis are less audible, but this is also something that varies with the length of the

[139] Lerdahl and Jackendoff, *Generative Theory*, 53.
[140] Ibid., 52.

piece, and Schenker's background analysis of the Mozart trio is certainly aurally relevant (even more so since there are eight notes in the fundamental line). But apart from the issue of audibility in general, the background structures of Schenker and Schenkerians are not always aurally compelling, and when this is the case, it often results from forcing the music into one of Schenker's three *Ursatz* models. As noted, Smith's solution is no better in this regard, and is usually even more restrictive.

However, Smith's articulation of this particular problem with strict Schenkerian analysis expresses the issue precisely. He asks, "What about falsifications of the theory, the pieces to which these backgrounds do not conform?"[141] In an endnote he writes:

> Is it coincidental that the middle section of the Scherzo to Beethoven's Sonata Op. 26 is extraordinarily difficult to fit into an orthodox Schenkerian paradigm, and that, in Ex. 14, Schenker simply omitted that section? On the other hand, the "fudging" techniques of substitution, register transfer, cover-tones, etc., are his more usual way of dealing with pieces in which orthodox backgrounds cannot be discerned without stretching the facts of the music.[142]

Arguably, this is the *only* real problem with strict Schenkerian analysis, and it will be addressed here as well as in Chapter 2.

Firstly, the point that should be made, although it is a rather limited one, that the distortions to which Smith refers affect the higher levels more than the lower ones. This is particularly true in longer pieces, where there are generally a greater number of levels between the background and the foreground, and hence are more places for such "'fudging' techniques" to be absorbed without disrupting the integrity of the lower levels. In other words, if what Smith suggests above is true, that the essential voice-leading analysis of a piece may be unchanged by

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[141] Smith, "Schenker's *Formenlehre*," 273.
[142] Ibid., 293 (note 122). What Smith describes as "substitutions" is probably very similar to what Lerdahl and Jackendoff refer to as "transformations."

employing different primary tones, then this essential voice-leading analysis should be unharmed by the process of forcing things to "work out" on the higher levels. Furthermore, as noted, in these longer pieces the higher levels are less audible anyhow, and thus are more of what Lerdahl and Jackendoff term an "idealization."[143]

Secondly, it must be observed that the techniques to which Smith refers are not inherently problematic. The concept of an implied tone, or of a cover tone, is analytically sound. Rather, the problem lies in the potential for their overuse or abuse. Thirdly, while it is certainly true that Schenker's theory, in its most restrictive formulation, will only work convincingly for some pieces, there is still value in what it tells us about those pieces (as well as in the analytical process itself). Schenker may have picked the trio from K. 331 because it "works," but his analysis nevertheless provides a wealth of insight. Smith, on the other hand, essentially decides that such insight does not matter, since it cannot apply to all pieces of tonal music, and he is concerned with changing the theory so that it ostensibly does apply to all pieces of tonal music.[144]

Lastly, the problem at hand is closely related to the general issue of Schenker revisionism. Revisionism is, of course, a subject that will be addressed in Chapter 2, in our discussion of Salzer and later repertoire. However, the matter will be examined here, more briefly, with respect to the traditional Schenkerian repertoire, and also in the section below on the Beach/Neumeyer and Beach/Smith exchanges.

To begin with, we must dispel the notion that Schenkerians take *FC* or Schenker's work in general to be indisputable. Most or all contemporary Schenkerians have criticized Schenker in

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[143] Lerdahl and Jackendoff, *Generative Theory*, 111.
[144] Straus is similarly concerned, over-concerned in my opinion, with the applicability of insights gleaned in the analysis of one piece to other pieces. See Chapter 2, pages 99-100.

some way. While this may not seem like revision per se, revisionism is something that exists in a matter of degree. For example, in "Elephants, Crocodiles, and Beethoven: Schenker's Politics and the Pedagogy of Schenkerian Analysis," Schachter states that some of Schenker's analyses of the Chopin Etudes "are by no means convincing"; remarks that "even some of the published readings are dubious"; and refers to a portion of a graph from *FC* as being "very doubtful." However, he also cites Edward Laufer as "an outstanding example of one who follows closely in Schenker's footsteps, but who has arrived at many analyses that are more carefully thought out and more internally consistent than Schenker's readings of the same pieces."[145]

Laufer, then, clearly must agree with Schachter that some of Schenker's analyses may be improved. Indeed, the bulk of his review of *FC* is devoted to presenting alternate readings of various portions of Schenker's analyses. However, Laufer presents this commentary as though he were merely completing what Schenker left unfinished: "Some of the readings surely do not represent his final view. . . . Certain musical examples in the posthumous *DFS* [*Der freie Satz*] would undoubtedly have been revised had Schenker lived. Some may even have been furnished, provisionally, from memory."[146]

Laufer cites a variety of Oster's footnotes to his translation to support this view. Indeed, these footnotes indicate that Oster also held this opinion. But while Laufer has done work on later repertoire that is more clearly revisionist, Oster perhaps best fits the description of an "orthodox" Schenkerian.[147] Nevertheless, one can point to another of Oster's footnotes—the well-known and extensive one on sonata form that follows paragraph 316—as an example of revisionism. In "A Dialogue between Author and Editor," Schachter refers to this in mentioning

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[145] Schachter, "Schenker's Politics," 14.
[146] Laufer, review of *Free Composition*, 163.
[147] See Laufer's essay, "On the First Movement of Sibelius's Fourth Symphony: A Schenkerian View." Oswald Jonas is also highly orthodox.

that Oster's "explanation of sonata form movements with $\hat{5}$-lines and inner-voice progressions of $\hat{3}$-$\hat{2}$ permits much more convincing readings of some pieces than Schenker's standard interruption theory allows."[148]

Then there is Schachter himself, who self-describes thus: "If I'm a Schenker revisionist, it's to a rather small extent and, I think, within the central tradition." A number of allowances can be made within this "central tradition," however. Although Schachter states that he is "not in a rush to add new *Ursatz* forms" (probably an indirect response to Smith and to Neumeyer, although Straus first asks a question about the standard *Ursatz* forms), he also points to his analysis of the fourth movement of Beethoven's sixth symphony, which he analyzes with an *Urlinie* of $\hat{1}$-$\hat{2}$-$\hat{3}$ in "The Triad as Place and Action," as well as another analysis where the *Urlinie* is "covered under a prominent rising fourth" (although Schachter still feels that the *Urlinie* here provides large-scale tonal closure). Schachter's rising *Urlinie* is particularly interesting since it does not conform to any of Neumeyer's models, nor to any of Smith's.[149]

Rothstein's remarks in "The Americanization of Schenker Pedagogy?" make for an interesting comparison:

> It is true that Schenker's graphic analyses contain inconsistencies, even internal inconsistencies, and that they do not always obey the letter of *Free Composition*. In such cases it is by no means always to be assumed that the analysis should be corrected in light of the theory; in some instances the theory should bend in order to accommodate the analysis. One of the most fortunate of Schenker's inconsistencies is that, in analyzing a composition, he was willing to override his own theoretical prescriptions if the music seemed to demand it. . . . It can be, as has been, argued that he should have gone further than he did in making such exceptions; the point is that he made them.[150]

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[148] Schachter, "Dialogue," 10.
[149] Ibid., 10-11.
[150] Rothstein, "Schenker Pedagogy?," 295-96.

Rothstein mentions the rather benign issue of Schenker's treatment of the prolongation of sevenths, but does so because it is the "best-known" example. In any case, the phrase "it can be . . . argued" clearly indicates that Rothstein is open to a broader range of revisions, such as those of Schachter.[151]

What Schachter and Rothstein have in common, in addition to agreeing that Schenker overemphasized the background in his later work (as previously discussed), is an approach to revisionism that—like Salzer and Schenker himself—allows exceptions to Schenker's edicts (in varying degrees) when called for in a particular situation but that does not create new rules attempting to generalize about such situations. The flexibility of the Schenkerian approach stems not from an abundance of rules but rather from the simplicity of the theory. As Laufer writes in his review, "Schenker's approach to the art of music is, in some sense, conceptually simple. It is the music which is difficult."[152] The music *is* difficult, but the simplicity and flexibility of Schenker's approach allows its practitioners to "follow the music," as Salzer urged.

One more passage from "A Dialogue between Author and Editor" is worth noting for the way that it subtly captures the relationship of this simplicity and flexibility to revisionism: "I have to say that though I'm deeply interested in Schenker, I'm still more interested in Mozart and Beethoven and I find that the approach of the later Schenker gives me a perfectly satisfactory framework for developing my ideas about the music. I have yet to see that drastic revisions of Schenker have led to analyses that are as good as his own best readings, and that for me is the

[151] Note as well that Rothstein's view of form breaks from Schenker's; see Rothstein, *Phrase Rhythm*, 104. Few if any Schenkerians have accepted Schenker's theory of form to the extent of avoiding traditional formal designations altogether, and even Schenker did not do so.
[152] Laufer, review of *Free Composition*, 163.

proof of the pudding."[153] Having just entertained a question from Straus regarding the sufficiency of Schenker's *Ursatz* models, Schachter would seem to be alluding to work of scholars such as Smith and Neumeyer in this final sentence (Neumeyer's work will be considered later in this chapter).[154] While Schachter's argument relates to our point above regarding the quality of analyses versus the potential quantity or applicability of them, we have just seen that Schachter is willing to make exceptions in order to cover a wider array of repertoire. Regardless, the matter of repertoire and problematic compositions is of central importance, and it will continue to be discussed in this thesis.

Significantly, Cook discusses Smith's contribution in *The Schenker Project* and reaches a conclusion somewhat similar to ours, also in part through the comparison of one of Schenker's graphs with one of Smith's. While he is cautious about constructing "a general argument against the extension of Schenkerian structures to incorporate so-called exotic keys" on the "basis of a single, perhaps untypical, example," we have demonstrated the problems with another of Smith's analyses.[155] Moreover, our examination of Smith's Examples 29a and 29b is not an example of "cherry-picking" a weak analysis; rather, it is Smith's own highlighting of that example (in his provocative discussion titled "The Problem of the Primary Note") that led us to it.

In the quotation above, Schachter refers to the Schenkerian "framework." Cook then memorably refers to this framework in discussing the work of Schachter (perhaps with this passage in mind): "It can be argued—I think rightly—that the possibility of virtuoso deployment

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[153] Schachter, "Dialogue," 10-11. That Schachter refers to the "later Schenker" here may seem at odds with our remarks above concerning Schachter's (and Rothstein's) de-emphasis of the *Ursatz*. However, while Schachter may employ the "framework" of the later Schenker, his use of it is informed by his knowledge of the earlier Schenker.

[154] As we will see in Chapter 2, Schachter has consistently supported Salzer's revisionist work on later repertoire, and in fact advocates for Salzer in this same paragraph. However, Schachter does not mention anything about Salzer's work on the traditional Schenkerian repertoire.

[155] Cook, *Schenker Project*, 289.

isn't in itself a good argument for sticking to a framework if it tends to constrain rather than encourage sensitive response to the particularities of individual musical works."[156] Although Cook then pursues the other side of the argument and criticizes Smith's analysis, he identifies an important piece of the puzzle here, and one that relates back to Smith's "fudging techniques," which are part of the arsenal of the virtuoso Schenkerian. This issue is now further considered by exploring the following clarifying question: what are some of the elements that make a Schenkerian analysis successful? Three related aspects come to mind that are relevant to the present discussion.

First, a rather simple point: does the analysis "work" in accordance with Schenkerian principles? In other words, is there a clear background structure that connects well with each successive level? (For the sake of future discussion, let us consider "virtuoso deployment" of technique to be most closely related to this aspect of analysis.) This is not enough, however, as Schachter reminds us in his third article on rhythm: "The goal of analysis is to find the best reading one can, not merely to find a solution that somehow 'works.'"[157] Second, is the analysis "musical"? Does it entail observations that are audible—that are aurally relevant—or does the analysis "distort and misrepresent" the basic "facts of the music"? "Note-picking," for example, is not a musical approach, which is essentially to say that top-down considerations must not disrupt the integrity of the lower levels (as mentioned above in our initial response to Smith's "fudging techniques" passage). Third—and this element is, or can be, closely related to the second—to what extent are "fudging techniques" employed? An analysis will simply be less convincing if too many of the more structural tones are covered, merely implied, distantly displaced from their harmonic support, and so forth.

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[156] Ibid., 289.
[157] Schachter, "Aspects of Meter," 99-100.

Next we consider various combinations of these elements. "Fudging techniques" may be used musically or less so; some notes interpolated as implied tones ring out loudly in our heads whereas others are more theoretically motivated and require a great deal of imagination to hear. Just because implied tones are an available technique does not mean that we should employ them whenever we wish a note to be there that is not.

"Virtuoso deployment" of technique may also be musical or mechanical (as in performance). To some extent, this virtuosic technique entails the "fudging techniques," which, as has just been observed, may be used more or less compellingly. Virtuosic technique also includes the knowledge, facility, and intellectual prowess that enables one to grasp all analytical possibilities, and with sufficient ease as to move among them without becoming attached to one idea simply because one had it, thereby finding the most rational analysis. Put this way, virtuosic technique sounds rather unmusical. It is preferable—though unrealistic to always expect—that one simply hears the piece in the way that works to begin with. The more the analysis becomes a mere "solution," as per Schachter's remark above, taking on characteristics of a "mathematical proof," an analogy that Michael Russ makes in "On Schenkerism: A Closed Circle of Elite Listeners?"[158]

Lastly, the extent to which a composition is difficult, unusual, or problematic for traditional Schenkerian analysis is often the extent to which "virtuoso deployment" of technique—including "fudging techniques"—may be necessary to make an analysis "work." If extreme measures are required—even if they are used musically—then the analysis is indeed weakened, if only implicitly, by virtue of the fact that the theory is clearly at odds with the piece

[158] Russ, "On Schenkerism," 267. Russ's criticism, however, relates to the fact that much of the content of a Schenkerian graph is not discussed in prose. On another note, his reference to a "mathematical proof" recalls Lerdahl and Jackendoff's description of the highest levels as "an idealization" (as mentioned above).

in question (unless one decides that a judicious theoretical exception is called for and is able to carry it off convincingly).

One might object, as Cook almost seems to do, that only Schachter is capable of producing analyses that meet the three criteria above: they work, are musical, and do not overly rely upon "fudging techniques." Yet, while Schachter's work is held in the highest esteem, and is probably the most consistently satisfying, there are surely many other analysts whose best work is just as successful. And although Cook makes a valid point about the difficulty of producing excellent analyses, one must remember Laufer's observation that "it is the music which is difficult." Cook's point may give us greater pause if it is considered in relation to pieces with unusual key schemes (which may be part of the subtext), but we have already addressed the possibility of making exceptions and employing unusual *Ursatz* forms where necessary, just on an ad hoc basis.

Our discussion of Smith's extended article cannot be concluded without noting that in the end, he significantly backpedals with respect to much of his criticism. Smith writes: "Most of the pieces that he [Schenker] analysed were open and closed forms, based on the harmonic relationship between tonic and dominant. His straight-line diatonic fundamental structures work insightfully and imaginatively for such music; we cannot in good faith question the essential adequacy of his system for those pieces. . . . Nothing done here threatens the adequacy of his theory for normal tonic-and-dominant focused tonal music."[159] This is indeed quite a distance from his previous full-throated conclusion (cited above) that "Schenker's theory desperately needs to find . . . a way to choose effectively between competing fundamental structures within the analysis of any particular piece." Again, complete consistency is perhaps not to be expected

[159] Smith, "Schenker's *Formenlehre*," 280.

in such lengthy contributions, but whether Smith's apparent reversal is due to diplomacy, an endgame epiphany, or a miscalculated use of hyperbole, the effect is to undercut his previous arguments and to make his overall proposal murky and more complicated.

For if this statement is taken at face value, then Smith's proposal seems to run as follows. If the piece modulates to the dominant, then we use Schenker's *Ursatz* models. If it modulates elsewhere, then we use *Ursatz* models which mean something else entirely (Smith's concluding rhetorical point that form is synonymous with structure notwithstanding).[160] If the piece is a three-part closed form, then we use *Ursatz* models which mean yet something else, since Smith (as mentioned above) decides "to regard the beginning of the reprise as the point of deepest-level formal closure" for pieces in this category.[161] And what, then, shall we do with pieces that modulate to the dominant *and* are three-part closed forms—do we use Smith's models or Schenker's?

Smith's contribution constitutes a very important attempt to deal with the central issue in Schenkerian theory and analysis—that of "progressive" and/or "problematic" compositions. There is a tension in Smith's discourse between his openness to different background structures and his desire for the process of discovering those structures to be free of ambiguity or subjectivity. This emphasis upon objectivity reflects the influence of Lerdahl and Jackendoff (and others), but in a way that is at odds with Rothstein, who, while also influenced by *GTTM*, never abandons "artistic" decision-making based upon hearing and intuition in favor of mechanical processes. That is to say, Rothstein keeps *GTTM* in the domain of formalism, and Schenker in the domain of intuitionism. In addition to its treatment of the issue of problematic

[160] Ibid., 279-80.
[161] Ibid., 265.

compositions, Smith's essay is highly significant as a taxonomic reference, as well as in its general discussion of Schenker's writings on form.

The Beach/Neumeyer and Beach/Smith Exchanges

Above, we discussed the difference between Neumeyer's and Salzer's approach to the ascending *Urlinie*, the former being much more specific. This difference reflects a more general distinction between their conceptions of Schenkerian theory that pertains particularly to "problematic compositions," and also reveals the origins of Neumeyer's later break with Schenkerians.[162] In his response to Beach, "Fragile Octaves, Broken Lines: On some Limitations of Schenkerian Theory and Practice," Neumeyer states in his opening paragraph: "When an established theory conflicts with the musically most satisfying or stylistically most appropriate analysis, the theory should be examined and changed where necessary."[163] A similar remark by Rothstein, quoted above, is phrased in a way that is slightly, yet significantly, different: "In some

[162] David Neumeyer co-authored *A Guide to Schenkerian Analysis* with Susan Tepping in 1992, but Neumeyer stopped publishing articles specifically pertaining to Schenkerian analysis for several years after that point, delving into film music instead (although often employing voice-leading graphs in his essays). (One exception is his article, "Synthesis and Association, Structure and Design, in Multi-Movement Compositions," although here he advances his own theory after reviewing Schenker's approach to the subject.) For evidence of Neumeyer's changed attitudes, see his 1998 review of Allen Cadwallader and David Gagné's textbook, *Analysis of Tonal Music: A Schenkerian Approach*, particularly pages 219-22. Although this review was co-authored by Julian Hook, a prominent footnote appended to the author's names themselves explains that "Julian Hook is responsible for comments on details in the volume under review and for the critiques of analyses; David Neumeyer wrote the rest."

[163] Neumeyer, "Fragile Octaves," 13. The three articles in the Neumeyer/Beach exchange are: Neumeyer, "The *Urlinie* from $\hat{8}$ as a Middleground Phenomenon"; Beach, "The Fundamental Line from Scale Degree 8: Criteria for Evaluation"; and Neumeyer, "Fragile Octaves, Broken Lines: On some Limitations in Schenkerian Theory and Practice."

instances the theory should bend in order to accommodate the analysis."[164] Salzer never even speaks concretely of Schenkerian "theory." In a typical passage, he states: "Structural hearing in no way represents a static method which is just learned and then applied. . . . It is at all times the ear which has to decide."[165] Salzer projects a sense that there is no actual "theory" to change, but simply Schenker's "approach," which he refers to instead.

In Beach's response to Neumeyer's contribution ("The Fundamental Line from Scale Degree 8: Criteria for Evaluation"), he adopts the sort of language Salzer employs: "The resulting melodic structure . . . is truly odd from a Schenkerian perspective, but apparently legitimate within Neumeyer's system. Forte and Gilbert, on the other hand, are more closely bound to Schenker's ideas, since they are writing an introduction to Schenkerian analysis. . . . It [their analysis] is a 'creative' solution to the dilemma, but one that is quite clearly forced."[166] (Beach presents his own analysis to resolve the issue.) Neumeyer takes issue with Beach's language here, arguing that he objects "to any recasting of Schenker's theory, which Beach inexplicably—and incorrectly—reduces to the status of a collection of 'ideas' or 'perspectives' rather than a coherent theory."[167] This is an interesting statement, as it seems to assert both that Beach is too theoretically rigid and also not theoretical enough. The tension is partially relieved by observing that Beach generally does not live by (or consistently maintain) the "relaxed rhetoric" that he uses here, in the way Salzer (or Schachter) does, but it is Neumeyer's reaction to this rhetoric that is significant for our point here.[168]

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[164] Rothstein, "Schenker Pedagogy?," 296.
[165] Salzer, *Structural Hearing*, 258.
[166] Beach, "Fundamental Line," 278, 280.
[167] Neumeyer, "Fragile Octaves," 13.
[168] For Rothstein's reference to Schachter's and Charles Burkhardt's "relaxed rhetoric," see Rothstein, "Americanization," 200.

Another of Neumeyer's contributions from the late 1980s, "The Three-Part *Ursatz*," is intriguing in the way that it resolves the issue of the *Urlinie* sometimes being covered; this is accomplished by positing a structural alto line in addition to a structural soprano line. His both/and analysis of Mozart's sonata in A major, K. 331 (I), which asserts that both $\hat{3}$ and $\hat{5}$ are *Urlinien*, is particularly provocative.

In considering these possibilities, it strikes me that the intensive process of repeated listening and careful weighing of options described by Salzer (see above) may be simplified by taking such an approach. Yet, it is through this arduous struggle that one comes to a deeper understanding of the music, and thus arrives at more refined insights, whether these ideas are expressed graphically or in prose. As both Salzer and Schachter mention, if the decision is very difficult, then it ultimately matters less.

Considered in this light, Schachter's comment cited above, that "drastic revisions of Schenker" have not "led to analyses that are as good as his own best readings," is perhaps more meaningful. And while Neumeyer's (and Smith's) ideas are to some extent aimed at problematic compositions, Schachter's own ad hoc approach to such pieces seems more likely to retain this process of struggle than approaches that simply increase the analytical options and often also mechanize the selection of those options.

Concurrent with the Beach-Neumeyer exchange was a related and highly polemical exchange between Beach and Smith.[169] Problematic compositions (and later repertoire) are again the focus, and theoretical rigidity is once more an issue, with Beach and Smith both

[169] See Smith's "The Functional Extravagance of Chromatic Chords," Beach's "On Analysis, Beethoven, and Extravagance: A Response to Charles J. Smith," and Smith's "A Rejoinder to David Beach."

accusing one another of being theoretically rigid about specific points.[170] Beach's rigidity is mostly revealed through his dogmatism, both in terms of tone and conviction.

Schenkerians do generally refer too much to being "right" or "correct." It is one thing to believe that analyses can be more or less correct, right, or good, than others (which is not the same as believing that there is only one right analysis). But to constantly refer to analyses in such fashion is unnecessary, causing one to wonder if the author is simply inflexible in their views. In "Either/Or," Schachter writes: "If my reading of the Mozart movement is correct, it reveals a genuine double meaning."[171] However, he seems to mention correctness in order to include the qualifier "if," which negates the sense of dogma. For how else could such a qualification be expressed? A variation, such as "provided that my analysis is convincing," sounds forced.

In Beach's response to Neumeyer, "The Fundamental Line from Scale Degree 8: Criteria for Evaluation," he remarks, "Though I do not agree with every detail of his [Schenker's] graph, I believe his interpretation is correct."[172] On the one hand, to speak of Schenkerian work as constituting interpretations (as Beach does throughout this essay) appears to be a step in the right direction, as it implies a degree of subjectivity, but to then use the language of correctness to refer to those interpretations strikes one as unbefitting. Beach does qualify his statement with "I believe," however.

His diatribe in response to Smith is a different matter, in that it is replete with dogmatic judgments. Smith takes Beach to task for this at length, focusing on the fact that Beach often does not provide sufficient reasons for his criticisms, framing them instead in terms of what is

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[170] See Smith, "Rejoinder to David Beach," 191.
[171] Schachter, "Either/Or," 130.
[172] Beach, "Fundamental Line," 288-89.

"absurd," "incorrect," and so forth. Smith also highlights Beach's reference to a "definitive view," and writes insightfully and eloquently about this issue; his remarks are worth (re-)reading.[173]

Unfortunately, while Smith's response itself conveys a sense of reasonability and rationality, aiming to make Beach appear fanatical by comparison (and to some extent succeeding), Beach had good reason to criticize Smith's article; for the "classic mistake" referred to above is at the root of Smith's work. While the issue involved does become more relevant in later repertoire, and Smith does deal with some such repertoire towards the end of his essay, even then it must be thoroughly understood. Beach rightfully rebukes Smith along these lines, but in his response to Beach, Smith still insists upon his point:

> He [Beach] states that my argument illustrates only "the principle that changes in surface design do not necessarily alter underlying structure" (p. 180). This is, in fact, an eloquent statement, in Schenkerian language, of the very point I have been trying to make. Having accepted this "principle," as well as (I presume) the undeniable fact that the Introduzione [from the *Waldstein*] is a far better piece of music than my graceless counterfeit, how can Beach avoid the conclusion of *FE* ["The Functional Extravagance of Chromatic Chords"]? What are we to make of an analysis that cannot reveal such a significant distinction? In other words, of what ultimate analytical value is an "underlying structure" that is not affected by such radical "changes in surface design"?[174]

In this statement, Smith seems to misunderstand the essence of Schenkerian analysis. The root of his argument, whether he is aware of it or not, is the rudimentary objection that surface features are "reduced away." Clearly, the further one moves away from the foreground, the more

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[173] For more on "right" analyses, see Rothstein, "Schenker Pedagogy?," 297; and Kielian-Gilbert, "Interpreting Schenkerian Prolongation," 67.

[174] Smith, "Rejoinder to David Beach," 191. Smith's "counterfeit" is composed in such a way that the underlying structure is the same as the Introduzione.

generic the structures become. This classic misunderstanding of Schenkerian analysis will now be further explored, chiefly within the context of the post-Schenkerian repertoire.[175]

[175] For more on the issue of problematic compositions within the Schenkerian repertoire, see Harald Krebs, "Tonal and Formal Dualism in Chopin's Scherzo, Op. 31"; and Schachter, "Chopin's Fantasy, Op. 49: The Two-Key Scheme."

CHAPTER 2

ANALYSIS OF THE POST-SCHENKERIAN REPERTOIRE

Chapter 1 dealt exclusively with music falling within the confines of the traditional Schenkerian repertoire. In this chapter, the analysis of late-nineetenth- and early-twentieth-century music will be considered. The first section explores how the "classic mistake" of Schenkerian critics, which pertains to issue of reduction itself, and which was mentioned in Chapter 1, becomes an issue of greater import in the context of the post-Schenkerian repertoire. The next section focuses on Joseph Straus's seminal contribution, "The Problem of Prolongation in Post-Tonal Music," which is discussed in part due to its significant engagement with Salzer, whose analysis of Stravinsky's *Symphony in Three Movements* (I) I defend.[176] In the following section, I connect Straus's distinction between prolongation and association with Oster's (and others') criticism that Salzer diluted Schenker's approach, as well as with the concepts of stability and salience. The last section of the chapter comes full circle by investigating the relationship between the Salzerian tradition and Lerdahl's *Tonal Pitch Space*. This discussion underscores the limits of systematization, correlates systematization with Oster's argument regarding dilution, and illustrates the necessity of the intuitionist interpretive practice that Lerdahl's work is partly intended to inform.

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[176] It is acknowledged that Straus's views have potentially changed since the publication of this article in 1987. Nevertheless, this essay contains one of the only direct and detailed critiques of Salzer in the literature, and warrants thorough scrutiny.

The Issue of Reduction

The argument that Schenkerian analysis merely "reduces away" the vibrant details of a piece of music, which was referred to in Chapter 1 as the classic mistake of Schenker's critics, does become more relevant as later repertoire is examined. (There are still essential flaws in this reasoning though, as will be seen.) It is not necessary to extensively address this argument in the context of traditional Schenkerian analysis, as it has in fact been thoroughly addressed in the literature.[177] However, this discussion will begin with some brief observations on the subject.

There are innumerable passages one might cite as evidence that Schenker does not view music or analysis in the way suggested by criticism along these lines. For example, in his discussion of Chopin's étude op. 10, no. 3 in *FC*, Schenker remarks, "How imaginatively the neighboring-note harmony $II^{7}_{\sharp 3}$ is expanded in measures 22-41, how striking the figurations in

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[177] For instances of this argument being made that are neither previously nor subsequently cited, see Narmour, *Beyond Schenkerism*, 9; Cumming, *The Sonic Self*, 172; Kerman, "How We Got into Analysis, and How to Get Out," 23-25; and Rosen, "Art has its Reasons," 34 and 38 (which Schachter responds to in the passage below). For another significant passage of Schenker concerning the importance of detail, see the conclusion of "Weg mit dem Phrasierungsbogen" ("Abolish the Phrasing Slur"), in *Das Meisterwerk*, volume 1, 20-30. For passages of Salzer, see *Structural Hearing*, 41, 207, and 220. For defenses against this critique (again, not otherwise cited), see Henry Martin's review of *Beyond Schenkerism*, 197-98; Cook, "Perception: A Perspective from Music Theory," 89-90; idem., *Schenker Project*, 132-33 (regarding Schenker and Salzer on ornamentation; see further citations there). Most significantly, see Schachter, "Structure as Foreground," 298; here Schachter addresses the issue directly, and provides excellent passages regarding the importance of detail by Zuckerkandl, Forte and Gilbert, and Salzer (*Structural Hearing*, 41, as listed above). In the conclusion of his essay (on pages 313 to 314), Schachter makes a statement which is characteristically both pointed and diplomatic: "My disagreements with Rosen's statement are probably obvious to anyone who is reading this paper. . . . In any case, I am not quoting these words to argue but—in part—to agree. In doing analysis, in teaching it, in trying to learn it, even in reading Schenker's graphs, it can become all too easy to fall into the heresy of valuing the work's deep structure more highly than the work itself." Also see section 2.1 of *GTTM*, "The Need for Reductions," which provides a thorough justification for reduction, all the way to the background; Lerdahl and Jackendoff, *GTTM*, 105-11. For a discussion of parenthetical passages, see the section titled "Expansion by Parenthetical Insertion" in Rothstein, *Phrase Rhythm*, 87-93.

measures 41-53!"[178] Yet, his graph indicates very little about the expansion, and shows none of the figurations whatsoever; they have been "reduced away" at the level given. This is because a graph, by necessity, more resembles a roadmap of a journey, not a series of snapshots taken along the way. Moreover, for Schenker, the details were not only aesthetically significant, but themselves representative of the whole—"The total work lives and moves in each diminution, even those of the lowest order. Not the smallest part exists without the whole"—and even the secret hiding place of large-scale structure itself: "'One must conceal the depths. Where? On the surface.'"[179] This is the essence of Schenker's organicism.[180]

Yet, many scholars seem to overlook passages of Schenker such as those cited above. For example, Russ refers to "the closed Schenkerian view of the musical world . . . where music does not evolve, but constantly produces more variants of the same type—a view which prefers to treat adventurousness parenthetically rather than progressively."[181] Schenkerians are indeed circumspect in the way they approach the issue of repertoire (which is one reason why it is important to sustain a Salzerian tradition as well); however, the parenthesization itself of progressive passages is not the underlying issue. After all, everything is in some sense parenthetical, in both Schenkerian and Salzerian analysis, except for the background—that is simply the nature of reductive analysis.[182]

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[178] Schenker, *FC*, paragraph 310 (page 133).
[179] Schenker, *FC*, 98, 6. In the latter passage, Schenker is quoting Hugo von Hofmannsthal.
[180] For further discussion of these passages, see Pellegrin, "Fractal Geometry and Schenker's Theory of Organic Unity," 35-36.
[181] Russ, "On Schenkerism," 281.
[182] It should also be remembered that Schenker was not the first to strip away the details of music and examine the results. It is well-known that Schenker's concept of diminution was influenced by the Italian embellishment manuals of the sixteenth- and seventeenth-centuries, which sometimes presented information in the reverse order, "de-embellishing" existing music. (See Schenker, *FC*, paragraph 251, pages 93-96; Forte and Gilbert, *Introduction to Schenkerian Analysis*, 7-10; and Bent's volume, *Analysis*, 9 and 38-41.) However, Morgan's 1978

Similar to Russ's point is Smith's statement in "The Functional Extravagance of Chromatic Chords" that "strict linear theory by definition represents all music as if it were diatonic at the core; chromaticisms, even the most extensive, are inevitably viewed as decorative."[183] Assuming a tonal context, chromaticism is a type of roughness. To pursue the admittedly broad analogy above, a chromatic passage may be akin to a winding mountain road. The road map is not only hierarchical, reducing away smaller roads, but also smooths out the curves in all of the roads, thus simplifying them into more generic shapes. The larger-scale map displays goal-directed motion; that the road takes you from point A, on one side of the mountain range, to point B, on the other side of it. Scenic loops and potential sidetrips are only shown on more detailed maps, and while a description in a guidebook may be enticing (like Schenker's prose above), one has to actually make the trip in order to experience the landscape. Schenker himself makes a similar analogy, asserting that we should not fly "over the work of art in the same manner that one flies over villages, cities, palaces, castles, fields, woods, rivers, and lakes." Rather, the "inner relationships" of a work of art "demand to be 'traversed.'"[184]

None of this constitutes an oppressive imposition on the part of the mapmakers, who have to make decisions about how to render the complexities of the system at the given scale of

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contribution, "Schenker and the Theoretical Tradition: The Concept of Musical Reduction," goes much further in examining historical precedents for Schenker's reductive approach, arguing that the "roots" of this approach "extend far back into Western music history and encompass a wide range of theorists and theoretical ideas." Morgan demonstrates the ways in which *musica poetica* (the theory of musical figures, or the rhetoric of music) and functional harmonic theory—as well as diminution technique—prefigure Schenker's concept of levels, but does so "not to distract from his [Schenker's] importance or originality," but rather to "reveal that his theory represents a remarkable synthesis of some of the main currents of Western musical thought." Morgan, "Musical Reduction," 73.

[183] Smith, "Functional Extravagance," 106. Beach quotes and responds to this specific sentence, but Smith maintains the position in his rejoinder. See Beach, "Rejoinder to David Beach," 180.
[184] Schenker, *FC*, chapter 1, section 4 (page 6).

view (recent technology has no doubt altered this dynamic). Roughness is simply less visible from a distance. From far away, the mountains themselves appear to be smooth slopes, but if one scales them, one discovers that many of these slopes are in fact a chaotic jumble of boulders. Similarly, at high altitudes or on large-scale maps, coastlines appear to be smooth, no matter how rough they actually may be.[185] These notions are captured when Schenker states, "Modern man thinks he can ignore the differentiations of landscapes simply because he is able to fly over them."[186]

The classic mistake is objecting to parenthesization itself. As mentioned above, this issue does become more relevant in the analysis of transitional repertoire; however, the crux of the matter is more qualified: parenthesization itself is not the issue, but the question of when—at what structural level—a passage should be reduced out becomes more complex and more consequential as increasingly progressive repertoire is encountered. An example will now be investigated.

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[185] Roughness is a crucial component of fractal theory, and Benoît Mandelbrot, the founder of fractal geometry, begins his seminal 1967 essay, "How Long is the Coast of Britain? Statistical Self-Similarity and Fractional Dimension," with the general observation that the length of a coastline increases as one measures it on smaller scales. See also Mandelbrot, *The Fractal Geometry of Nature*, 25-33. For more on the many general connections between Mandelbrot and Schenker, see Pellegrin, "Fractal Geometry," 9-14.

[186] Schenker, *FC*, chapter 1, section 4 (page 160 in appendix 4).

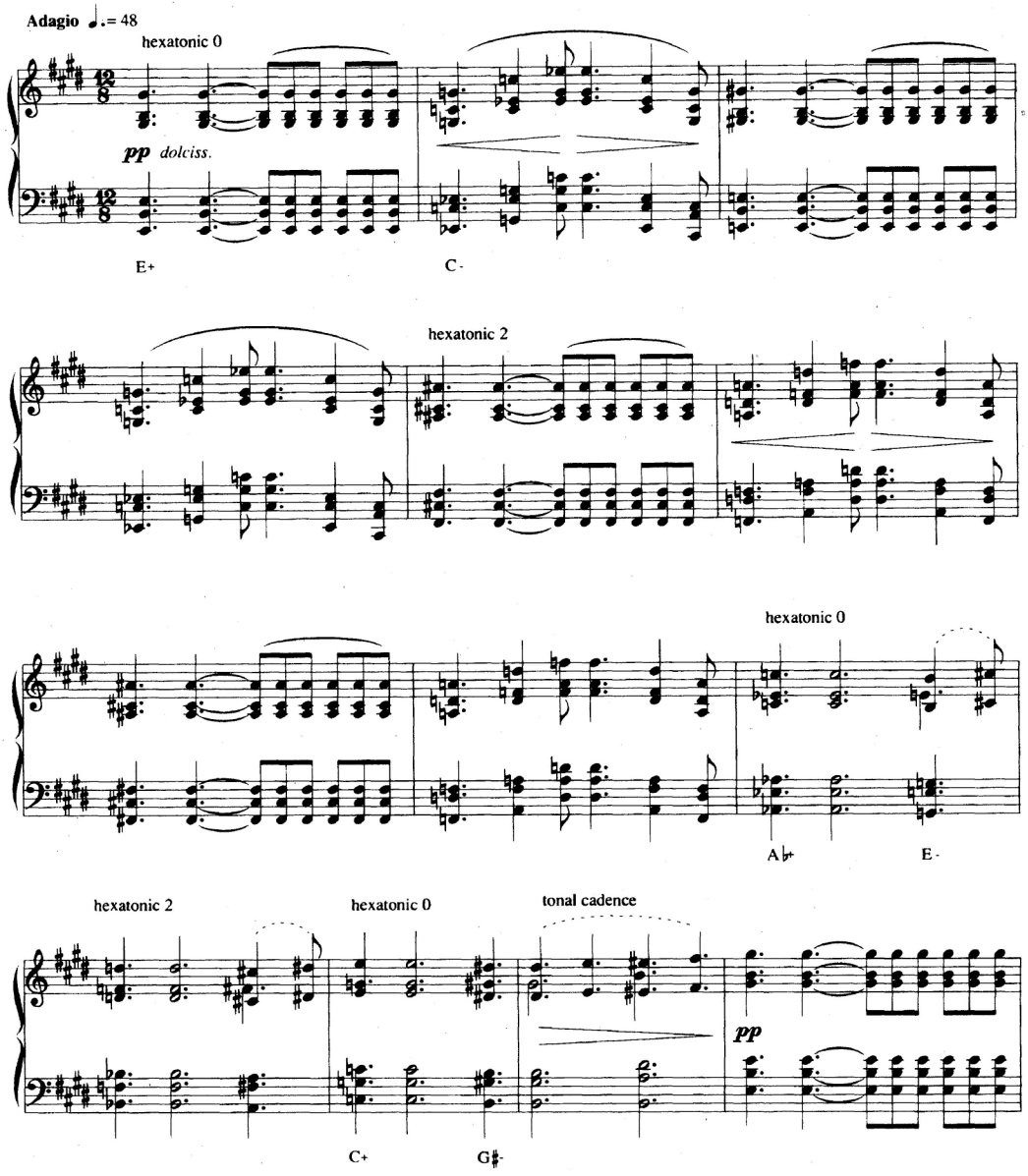

Figure 2.1. Polonaise I from Liszt's "Deux Polonaises de l'oratorio Stanislaus," S. 519, mm. 98-110, with Cohn's analytical markings. Cohn, "Maximally Smooth Cycles, Hexatonic Systems, and the Analysis of Late-Romantic Triadic Progressions," 29.

In "Maximally Smooth Cycles, Hexatonic Systems, and the Analysis of Late-Romantic Triadic Progressions," Cohn presents an intriguing sequential passage from the first of Liszt's

"Deux Polonaises de l'oratorio Stanislaus," S. 519 (see Figure 2.1).[187] In keeping with the subject of his essay, Cohn discusses the bold harmonic progression of the excerpt from a neo-Riemannian perspective.[188] Coming from a Schenkerian viewpoint, one might quickly observe that the first and last measures are identical, consisting of a repeated tonic triad, except that the last is transposed up one octave (Cohn does not specifically mention this, perhaps because it is obvious). If one was not already familiar with this piece, the above observation would suggest that in the larger context of the work, this passage is a scenic detour from the main road, and would be reduced out at a perhaps surprisingly shallow level. No matter how striking or beautiful a passage may be, the criteria for structural status at a given level in Schenkerian analysis entail direct participation in the goal-directed motion of the next highest level.[189] In any case, the neo-Riemannian relationships would not be at odds with such an analysis, but could be displayed in a lower-level graph and/or discussed in prose (an analysis that did neither of these would certainly be inadequate).

However, consulting a complete score reveals a very different picture. This piece is in fact similarly progressive throughout, consisting chiefly of motion through chromatic third-relations as well as sequencing of diminished seventh-chords. The cadence at the end of Cohn's excerpt is by far the clearest presentation of a tonic-dominant axis.[190] The reason the last measure is identical to the first is that the whole sequence is repeated an octave higher (but with

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[187] Cohn, "Maximally Smooth Cycles," 28-30. *Die Legende vom heiligen Stanislaus* is an unfinished oratorio; the two polonaises are written for piano.

[188] Cohn's discussion of this excerpt is brief and focuses on complementation. In the only remark not pertaining to transformational theory, he mentions a "middleground profile" of "a series of rising transpositions which . . . are intensified by durational compression." Cohn, "Maximally Smooth Cycles," 28.

[189] The apparent problem of the circularity of this process was discussed in Chapter 1.

[190] The unison melody that opens the piece and the single-line melody that precedes this excerpt both imply the dominant harmony and are followed by tonic chords. These are the only other dominant-tonic resolutions in the piece.

an alteration at the end that brings about a suspenseful conclusion to the work), the two together comprising roughly twenty percent of the work as a whole. Overall, the piece seems to be "about" the idea of chromatic third-relations.

The above observations raise an important issue. The passage given by Cohn was longer relative to the whole than one might have assumed. At what point do passages that do not "go anywhere" begin to matter more? Even if nearly everything is reduced away in a reduction of a piece to the background level, there are still decisions to be made about the relative level of structural importance. How much should the length of the passage—a salience condition—be used in making such determinations?

One answer to this question is that it depends upon how functionally tonal the rest of the work is. If the rest of the work were completely functionally tonal, with cadences occurring frequently and clearly, then a passage like this one would stand out more, and would thus be more salient; however, at the same time, one would likely perceive it to be less "structural" in nature, due to the context of goal-directed motion. Still, what if the passage constituted fifty percent of the total length of the piece?

On the other hand, if the rest of the work were similarly devoid of functionally tonal progressions, then the passage could potentially be perceived to be just as (or more) goal-directed as any other in the piece. Such is the case with the Liszt polonaise, and the passage excerpted by Cohn probably is perceived as being the most goal-directed portion of the piece. For the sequential passage here is still "goal-directed" in the sense that it leads directly to a goal, by way of an ascending whole-tone line (in parallel tenths with the bass, except at the cadence), but not by any sort of functionally tonal logic.

There does not seem to be much about this passage, until the arrival of the dominant, that

causes us (upon first hearing) to anticipate the goal at which we ultimately arrive, other than the repetition of the pattern itself, and the fact that E is the tonic of the piece (although the piece ends in, or at least on, C♯).[191] In a sense, the last thing we might expect to hear after having our sense of tonality nullified by the abrupt alternations of two hexatonic collections is a simple return to where we began. The searching, otherworldly quality of this passage rather seems to prepare us for a landing in some exotic location.

The G♯ minor triad before the dominant chord does effect a smooth "modulation" from the hexatonic 0 collection (whose system it simultaneously completes) to E major, as Cohn observes, but in terms of our tonally syntactic anticipation of E major, the F♯ minor triad of the previous measure might appear to be at least as significant. The G♯ minor chord (iii in E major) is in first inversion though, putting $\hat{5}$ in the bass to form what is heard, at least retrospectively, as a dominant with a sixth above the bass substituting for the fifth.

The structure that we hear in this passage is essentially a series of root-position major triads rising by whole-step through an octave, with D major omitted, each to some extent perceived as a new tonic (less so as the sequential construction becomes compressed and more apparent). This ascent, coupled with the melodic motions downwards into the first-inversion minor sonorities, constitutes a reaching-over. Salience and harmonic—but not functionally tonal—stability account for why we hear this structure.

We hear the initial E major chord as tonic—and thus stable—due to the harmonic implications of the single-line soliloquy that precedes it. Thus when the first four measures of the excerpt are transposed up, we hear F♯ as tonic. By measure 106, the harmonic pattern has

[191] By way of explaining the first point, playing a simple succession of root-position major triads rising by whole-step does seem to create a natural impulse to complete an octave motion.

been established, and patterns are a type of parallelism, which is a type of salience. There is also the stability inherent in the root-position major triads themselves, as opposed to the first-inversion minor triads that are juxtaposed with them. This sort of purely acoustic stability is of a different sort than that which is dependent upon tonal syntax.

The major triads, especially beginning in measure 106, are also emphasized metrically and durationally. However, the stability of the root-position major triads themselves seems to be more important than their salience, at least to a point. If one reverses the order of the harmonies in each iteration of the sequence (while keeping all else constant), or retrogrades the entire sequence, there is still a greater sense of structural weight and tonicity on the major root-position chords. It might be further observed that the quality of being in root position seems to be more important than the quality of being major, probably owing to the acoustic properties of the perfect fifth. If one holds melody and inversion constant but reverses the chord qualities, producing F minor in root position in measure 98 and C major in first inversion in measure 99, the root-position minor triads have more structural weight and tonicity. The same is true if melody and chord quality are held constant and the inversions are reversed—producing E major in first inversion in measure 98 and C minor in root position in measure 99.[192]

Because of the lack of functional harmony, a traditional Schenkerian analysis of this work is untenable. However, a "Salzerian" voice-leading reduction would still be helpful in a

[192] An interesting exercise is to play through the entire passage with the various changes mentioned above, asking oneself which harmony has more tonicity and if that same harmony also seems to have more structural weight, but also paying attention to how these variables shift with the rhythmic differences introduced in measure 106. One may also experiment with waiting to initiate the changes until the beginning of measure 106, to compare the force of the different harmonic structure with the increased disparity in salience between the two harmonies of each measure and/or with the force of the parallelism with the previous measures. The excerpt as a whole provides a crucible for studying many different parameters, and some interesting gray areas may be explored in this manner.

number of respects. For example, this piece is also about ascent, and a voice-leading reduction would aid in illustrating the ways in which various passages and the piece overall ascend. Even if such relationships seem to be relatively easy to perceive in a work as short and uncluttered as this one, the graphing procedure helps to organize one's thoughts, focus one's hearing, stimulate new discoveries, and present one's observations to others.

Let us now consider an imaginary piece. This piece contains single pitches that are long, loud, and in a high register. Between each of these pitches are quiet, dense, rapidly moving, and highly chromatic passages of arpeggiated 027 trichords, occurring in a low register, that are unrelated to the high-register pitches. The high pitches form a stepwise line. Such a texture, of course, is representative of what Straus, in "The Problem of Prolongation in Post-Tonal Music," would call "departure and return," and presents linear connections that are associative rather than prolongational (in the Schenkerian sense of the word).[193] Although Salzer did not analyze any "atonal" music, an analysis in the Salzerian tradition would likely show the line (and any relationships within it) as representing the larger-scale structure, and would reduce the 027 trichords at a lower level. This would probably be the case even if that trichord itself or the ordering of the trichords were not unrelated to the upper line, but rather bore an important relationship to it. (As with neo-Riemannian analytical techniques in the Liszt example, set-theoretical analytical techniques would here be a necessary component of the analysis, and could be employed in the surface-level graph and/or discussed in prose.)

To what extent, if any, might this reductive decision be changed based upon the relative length of the lower-register passages? What if one of the lower-register passages comprised seventy percent of the overall piece? Again, this particular sort of question regarding duration

[193] Naturally, in a texture this extreme, the higher-register pitches would not even have to move in stepwise fashion in order to be associated with one another.

does not matter so much in Schenkerian analysis of tonal music, where pitch stability is generally at the forefront of our decision-making process. However, in a non-tonal environment, where salience is the chief arbiter of our decisions, duration matters much more, since duration is itself a parameter of salience. Still, in this situation, the decision might be difficult.

There are no easy solutions to the general questions posed above. The only real answer can be that many analytical decisions depend upon the particularities of the piece in question—especially in this time-period, where a wide variety of techniques and combinations of stability and salience coexist—and upon the subjective judgments of individual analysts. If we reject this subjectivity, then we must forego the possibility of any "roadmaps" of this repertoire (as well as any insights afforded or entailed by them), which are constructed out of structural judgments.

Straus and Prolongation

In the absence of true Schenkerian prolongation, judgments about what is structurally important must rely upon salience, and Straus's article is filled with references to salience parameters. In his analysis of Bartók's piano sonata, he appeals to "register, metrical placement, duration, frequency of reiteration, and position within the passage" to support his choice of structural sonorities.[194] Although salience is generally more subjective than stability, salience alone is still fully capable of creating clear structures (as in our imaginary piece). Straus's analysis of Bartók is quite straightforward, and with reference to Salzer's analysis of Stravinsky's *Symphony in Three Movements* (I), Straus agrees with Salzer to such an extent as to remark that "the A♭ is unquestionably the most important melodic tone, reinforced in a variety of contextual ways"; and, that "there can be little quarrel with Salzer's selection of upper voice

[194] Ibid., 15.

notes. The B♭, B♮, and D are strongly emphasized in the music."[195] Straus, however, objects to Salzer's ascription of prolongational function to these pitches, as is well known.

Straus's commentary on Salzer's analysis will be further discussed below, but prolongation itself must be addressed first. In *Tonal Pitch Space*, Lerdahl makes the following statement:

> It should be eminently clear by this point that when I invoke "atonal prolongation" I am not attempting to revive the Schenkerian conception of prolongation in context for which it was not designed. Rather, I use the term "prolongation" in the same way that it has been employed throughout *GTTM* and this volume, as a commonplace word adapted to precise meanings within the theory.[196]

It is easy to see why Lerdahl takes this position. After all, the word "prolongation" itself does not contradict the "associative" relationships described by Straus.

Straus offers the following illustration:

> To take an extreme example, if I play a C-major triad, then play seventeen randomly chosen notes, then restate the C-major triad, it would not be informative to claim that the random notes prolonged the triads. Of course one can hear a clear association between the triads and the intervening material, but that is another story. Just because event Y falls between two occurrences of event X does not mean that Y prolongs X.[197]

Schenkerian prolongation involves, among other things, the networks of expectation created by tonal syntax. But expectation may be created by other means. Since Straus's example is short and has no context, it creates few expectations.

However, suppose Straus's example were merely the beginning of a piece which continued in the same fashion, alternating C major triads with varying numbers of random notes.

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[195] Ibid., 12.
[196] Lerdahl, *Tonal Pitch Space*, 350. Although Lerdahl makes no citations in this regard, his words are clearly aimed at Straus and/or discourse pertaining to his oft-cited article. Lerdahl had previously been critical of Straus's restrictions on the word "prolongation"; see below for more.
[197] Straus, "Problem of Prolongation," 7.

While the random notes do not prolong the C major triad in the sense of composing it out, each random note prolongs our expectation of the next C major triad. One might observe that this sense of expectation does not depend upon repeating the C major triad. The triads themselves could be random. However, our expectations would then be less specific, and thus weaker. Stronger expectations are created if we have linear motion, such as major triads rising by whole-step (as in the Liszt example), or tonal syntax implied by the triads.

Continuing with this idea, suppose the triads outline a tonal progression in C major, and we arrive at a G dominant-seventh chord, which is followed by a particularly lengthy passage of random notes. The random notes do not compose-out the G dominant-seventh chord, but they do prolong the expectation created by it; that is to say, they prolong the psychological *force* of the dominant-seventh chord, which one might say is "in force" throughout the passage of random notes.[198]

However, Straus would likely not agree with this statement, as he uses the phrase "in force" to distinguish between prolongation and association. ("In force" is not, of course, an actual Schenkerian term, although Schenkerians do use the phrase.) In a simple example demonstrating prolongation, Straus states:

> While the unstemmed D and C are sounding, the E is not literally present but, even so, it is still *in force* structurally. The E is not displaced until the appearance of the stemmed D, which has a comparable degree of harmonic support. More generally we might say that within a prolongation, some musical entity stays *in control* even when it is not explicitly present.[199]

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[198] This assumes that the random notes are truly random, and are perceived as such, thus merely creating the expectation of more random notes. If the notes were not random, then they would create their own set of expectations, which would have to be considered vis-à-vis the tonal progression in a structural analysis of the piece.

[199] Ibid., 1-2. Emphasis added. Note the use of the phrase "in control" here as well, which is discussed below.

Later, in commentary pertaining to his "motivic reinterpretation" of Salzer's Stravinsky analysis (see Figure 2.3), Straus states, "The G does not remain *in force* when those other notes are sounding. Rather, those other notes are simply associated with the G as part of a large-scale motivic statement."[200] Straus uses an open notehead for G, asserting its hierarchical superiority. Yet, what does it mean for a pitch to be hierarchically superior, if not that it is some domain in force and/or in control? Straus's explanation of prolongation in terms of the phrases "in force" and "in control" seems to indicate that this is not merely a semantic question of how strictly we limit our use of the word "prolongation."

In this example, the intervening notes are not random, as they were above, and the structure is neither linear nor functionally tonal. However, in adhering to his tonal/post-tonal division of repertoire, Straus chooses to apply the principles of his "extreme" example to Stravinksy's neo-classicism in the same way that he applies them to Webern's serialism, rather than in shades of gray. Moreover, almost no indication is given as to how we ought to deal with other transitional repertoire where the tonal/post-tonal dichotomy is even more problematic (such as certain Scriabin or Ravel).[201]

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[200] Ibid., 13. Emphasis added.

[201] Salzer may also be seen as categorical in his annexing of Stravinsky to the sphere of "tonal" music, but a much better example of failing to adequately differentiate one repertory from another may be seen in the work of Salzer's student, Travis. As it turns out, Travis may have encouraged Salzer, who was in fact much more interested in pre-Schenkerian repertoire, to work more with post-Schenkerian repertoire. See John Koslovsky's recent dissertation, "From *Sinn und Wesen* to *Structural Hearing*: The Development of Felix Salzer's Ideas in Interwar Vienna and Their Transmission in Post-War United States," 357-58.

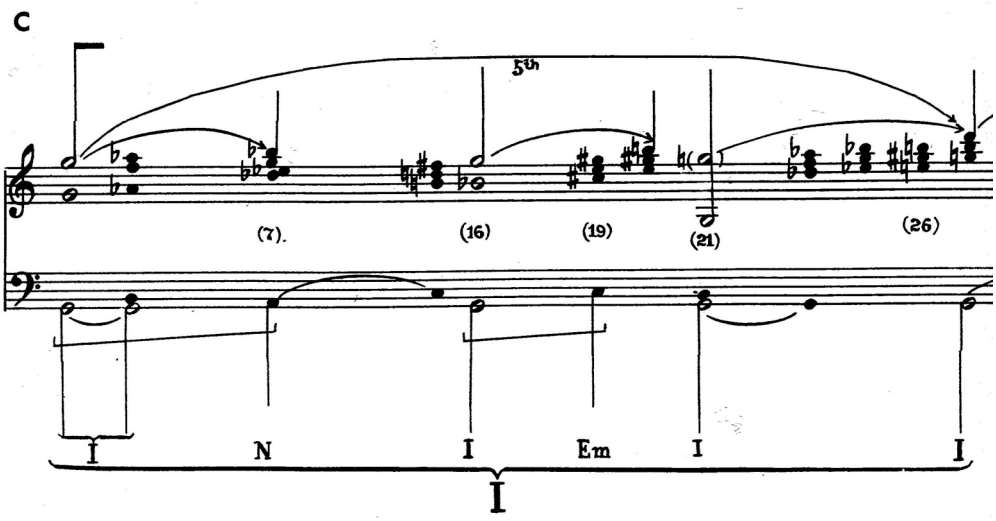

Figure 2.2. Salzer's analysis of Stravinsky, *Symphony in Three Movements* (I), rehearsal numbers 1-26. Salzer, *Structural Hearing*, Example 472c.

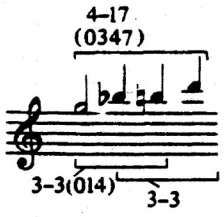

Figure 2.3. Straus's "motivic reinterpretation" of Salzer's analysis. Straus, "The Problem of Prolongation in Post-Tonal Music," 11.

Straus's commentary on Salzer's analysis continues as such: "Those notes [B♭, B♮, and D], however, cannot be reasonably described as 'prolonging.'. . . The B♭ and D are not part of the original polychord and thus cannot be arpeggiations." Salzer does use the word "prolongation" in his description of the motions here, as indeed he does throughout *Structural Hearing*. However, Straus makes a serious error here: all four of the upper-voice arrows in Salzer's analysis (shown in Figure 2.2) are shown as slurs in his reproduction of the graph.[202] Furthermore, Straus's discussion, such as his reference above to "arpeggiations," seems to ignore

[202] See Straus's Example 6a. Straus, "Problem of Prolongation," 11.

other aspects of Salzer's accompanying prose. While Salzer's definition of terms (at the beginning of volume 2) does not generalize about how curved arrows differ in meaning from slurs, his specific language in this case, which will be further discussed below, clarifies the use of arrows by referring solely to melodic directionality and not to harmony.[203]

Straus makes an important point about limiting our assertions in post-tonal analysis, as appropriate: "Reinterpreting his [Salzer's] upper voice as a large-scale motivic statement claims less about the music."[204] Similarly, in his Bartók analysis, he remarks, "I have made no claim, however, regarding the pitches that intervene between the associated pitches."[205] To some extent, I agree with Straus's point, although perhaps in a different way than he intended it. In the analysis of transitional repertoire, there are times when the local-level harmony may be quite ambiguous, but the next level of structure is clear, due to larger harmonic goals and/or to salience. In such cases, one should not feel pressured by the demands of theoretical rigor to perform a local-level stem-and-slur analysis.[206]

Yet, for the most part, Salzer's graphs of this piece do not make claims about "the pitches that intervene between the associated pitches."[207] Since Salzer makes no claims about these

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[203] In addition to the excerpts below, Salzer refers to prolongations of "G," not to prolongations of any particular type of G harmony (see pages 218-19).
[204] Straus, "Problem of Prolongation," 13.
[205] Ibid., 15.
[206] Lerdahl, who is more concerned with theoretical rigor, responds to this point in "Atonal Prolongational Theory": "It is not enough to settle, as he [Straus] suggests, for a more modest atonal theory that just employs motivic associations in a set-theoretic manner. Straus regrets this posture, and has reason to." Ibid., 68. As mentioned, I agree to some extent with Straus, but I also agree to some extent with Lerdahl, particularly since his comments apply specifically to atonal music, not just post-tonal music. Although, I am not certain that Lerdahl's characterization of Straus's view ultimately applies as stated to music which is post-tonal but not-atonal (even if Straus does seem overly categorical in his approach).
[207] There are hardly any slurs in the upper staves of Salzer's Examples 472a and 472b, except for the dotted ones connecting the pitches that are the same to themselves. Sequences of several chords are often shown simply as stemless noteheads.

chords in the more detailed analyses, other than that they are structurally less significant, he simply draws arrows over the more important of these chords in the deeper level graph (shown in Figure 2.2), indicating the motions upwards to the most structural pitches. Salzer's language here is similarly focused upon the directionality of the motions. While he does refer to the motions as prolongations, he certainly does not speak of composing-out any particular chord, but rather states: "the first [prolongation] drives the melody up a third," "the second prolongation pushes the melody a further half-tone step up," and "the third prolongation . . . goes through the space of a third, already outlined before, and drives the melody upwards to D." Salzer then—in appropriately non-technical language—collectively refers to "these three melodic outlining motions."[208] Moreover, all of this is very audible in the music.[209]

What, then, does Straus claim? He states, "Set-class 3-3 occurs many times in the opening measures [of the *Symphony in Three Movements* (I)] and is a subset of virtually every vertical. It is emphasized locally in the opening measures, and then composed-out in the melody over the first 107 measures."[210] Here, Straus uses the term "composing-out" in a broad sense, not unlike the way Salzer uses the term "prolongation." Yet, the two are closely related, so much so that "prolongation" is sometimes translated as such from *Auskomponierung*.[211]

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[208] Salzer, *Structural Hearing*, 218.

[209] Slurs (or arrows) may also be more necessary if one chooses to represent several levels of analysis on one graph (unlike Salzer's analysis, which contains four successive graphs to deal with different levels of structure, not including the two detailed analyses of the opening measures found in his Examples 417a and 417b). In such graphs, it is important to account for as much as possible in order to clarify the levels, whereas on a graph that does not engage with many different levels, stems alone may be more or less sufficient.

[210] Straus, "Problem of Prolongation," 12.

[211] In *FC*, *Auskomponierung* is translated as "composing-out," but also sometimes as "prolongation." See page 163 of Appendix 5, "List of Terms," as well as Snarrenberg's discussion on page 325 of "The Art of Translating Schenker: A Commentary on *The Masterwork in Music*, Vol. 1."

Similarly, Straus seems unwilling in practice to abandon the use of slurs to denote motion that is not strictly prolongational, despite his theoretical remarks to the contrary. In Figure 2.4, which pertains to the Bartók piano sonata, Straus slurs a large-scale bass motion from A to D, and from D back to A.[212] Straus is clear that prolongation is not involved here, but previously in the essay, in discussing his Example 3 (see our Figure 2.5, below), he is equally clear that slurs should not be used in such cases. This well-known example involves potential prolongations of the 012 trichord, and Straus rules out not only the slurs from D to other pitches (such as neighboring tones), but also those from one D to another: "The problem in Example 3 is not the stems on the D's, but the slurs that follow. The D's may be strong in this musical context, but they are not prolonged."[213] Later, in his discussion of Salzer, Straus states that we must avoid our "strong temptation" to slur passing motions that are not strictly prolongational: "Such a simple slur is really a complex analytical act, one which depends on certain theoretical assumptions. If the musical context makes the assumptions untenable, the analysis will be, strictly speaking, meaningless."[214]

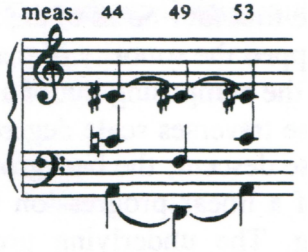

Figure 2.4. Straus's analysis of the Bartók piano sonata, mm. 44-53, which bears the caption, "a large-scale bass motion." Straus, "The Problem of Prolongation in Post-Tonal Music," 16.

[212] Straus's Bartók analysis may be found on pages 15 to 16.
[213] Straus, "Problem of Prolongation," 6. As can be seen, Straus also slurs the upper-voice repetitions of C♯ to themselves in his Bartók analysis. Evidently wanting to describe the relationship as something beyond mere association, he refers to C♯ as being "sustained and harmonized by different forms of a single set-class." Ibid., 15.
[214] Ibid., 12.

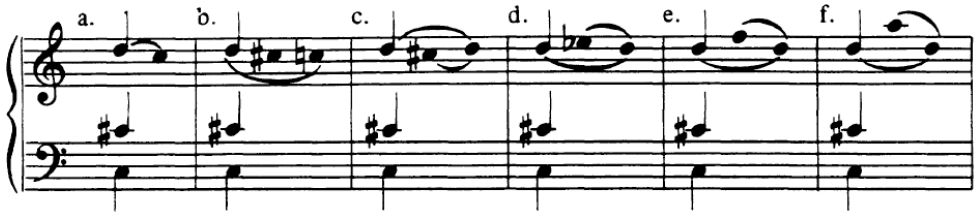

Figure 2.5. Straus's Example 3, showing hypothetical prolongations of set-class 3-1 (012). Straus, "The Problem of Prolongation in Post-Tonal Music," 3.

Furthermore, in the Bartók analysis given above, Straus's slurs over the bass notes actually do seem to be "meaningless." Straus clearly wishes to avoid the appearance of a Schenkerian/Salzerian graph in his analysis.[215] Therefore every note is stemmed, and he makes no assertion about which chord is more structurally significant. (Considering the excerpt Straus provides in isolation, it would certainly appear that the chord with bass A is structurally more significant, since it is departed from and returned to.) What, then, is conveyed by his slurs in the bass? They do not indicate the connection of the first chord with the last chord, nor do they indicate the dependency of one chord on another chord, since no hierarchical relationship is established. They are not needed to show that one chord goes to another or is associated with another by salience since there are no other chords shown (the reduction itself communicates those facts). And, of course, they do not indicate Schenkerian prolongation.

It might be argued that Straus earns the right to use slurs in his Bartók analysis since he has clarified the difference between Schenkerian prolongation and association. Still, it is frustrating that he does so with no comment about it, given his previous remarks. More

[215] In actuality, Straus's Bartók analysis is a Salzerian analysis, but one that also entails a clear set-theoretical relationship. This relationship is intriguing, but such striking connections surely do not permeate every phrase of the sonata. And, at least in the case of this excerpt, the equivalency of the sonorities does not impact our decision regarding the reduction; or, at least, it is in no way necessary for making the reduction.

important, one is left with the impression that ultimately Straus's contribution is largely semantic, and, as Lerdahl observes, circular.[216] If the problem with slurs in post-tonal structural analysis is that they are not prolongational in a strict Schenkerian sense, which in any case can be easily ascertained by context, then why not merely say that they are only prolongational in a broader sense?[217] That must be Straus's implicit conclusion as well.

As further evidence of Straus's tacit acceptance of Salzerian analysis, consider the fact that his "motivic reinterpretation" (Figure 2.3) is entirely dependent upon Salzer's analysis (Figure 2.2) (and is also entirely compatible with it). Straus's diagram is, in part, a further reduction of Salzer's analysis.[218] The only way to get there is through Salzer's work. One cannot simply assert that those four notes are the most structural; reductive graphs are necessary to substantiate such a claim. If Straus values the observations he makes, then he must necessarily value Salzer's analysis as well.

In addition, Straus is not merely dependent upon Salzer's recognition of the emphasis on those pitches themselves. Salzer's reduction depends not only upon melodic emphasis, but also

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[216] Lerdahl writes, "He [Straus] constrains the concept of prolongation to fit only classical tonal music and then demonstrates that other music does not fit it." Moreover, Straus's terminology and concepts were not new at the time. Consider the following passage from Laufer's review of *FC*: "The technical problems of twentieth-century application are obvious. There is no triad to be prolonged: thus, some contextually derived associative sonority must take its place. The concepts of consonance and dissonance, as technically defined, therefore cannot exist, nor can, strictly speaking, the notions of passing and neighbor notes where these were dissonant events." Lerdahl, "Atonal Prolongational Structure," 67-68; Laufer, review of *FC*, 161.

[217] Salzer, after all, is entirely clear that he means "tonality" in a broad sense, and defines tonality in terms of prolongation, which must also then be broadly conceived (Salzer would have been wise to clarify this, however). Perhaps in music where Schenkerian prolongation and non-Schenkerian prolongation are intermingled, a small slash through the slurs of non-Schenkerian nature could be used to indicate the difference. In web-based formats, color-coded slurs could be used, which would also enable one to illustrate ambiguity between the two.

[218] Salzer "skips" the level illustrated by Straus, moving directly from the analysis shown in Figure 2.2 (a portion of Salzer's Example 472c) to a deeper-level analysis of the larger excerpt (Example 472d), where the melody of the portion shown in Figure 2.2 is simply reduced to G.

upon the large-scale harmonic shifts. However one wishes to define the harmonic regions, the shifts themselves are very audible, and contribute to the segmentation of the surface into time-spans, each of which is accorded one structural melodic pitch.[219]

Straus's observations regarding set-class 3-3 are noteworthy. However, I would like to suggest that this is not the only way to supplement Salzer's analysis. As Straus is no doubt aware, eight distinct forms of set-class 3-3 are entailed in any given octatonic collection, and octatonicism pervades much of this excerpt, particularly the opening measures that Straus investigates.[220] However, two other pitches also occur, C and A, which are not part of $OCT_{1,2}$. These pitches occur only in the lower register (C4 and below) (but can be quite prominent, as in the trombones in measure 7), and are sometimes members of 014 trichords. Five out of fourteen of the 014 trichords present in these measures involve the pitches C or A; the rest involve only $OCT_{1,2}$.

At rehearsal number 7, the harmonic space is essentially transposed up a whole-step. Instead of D♭ major over G, we have an E♭ dominant-seventh chord over A (in this sense, the B of Salzer's polychord might be thought of as part of a D♭ dominant-seventh chord, but that harmony is not articulated as clearly as is the later E♭ dominant-seventh chord). $OCT_{1,2}$ again prevails in the upper voices at rehearsal number 16 (with exceptions filtering in just before the embellishing chord), and again with D missing (B♮ is also conspicuously absent). The lower voices have D and B, but in the context of rising G mixolydian scales. (This might be seen as similar to the lower voices in measures 3 to 4, which rise diatonically through the 0♯/0♭ collection

[219] Note, however, that the structural B♭ (over the bass pitch A) overlaps with the previous harmonic region with G in the bass. See Salzer's Examples 472a and 472b.
[220] Salzer's analysis of these measures is given in Figure 2.6, below. In his Examples 5a and 5b, Straus reproduces this analysis and also provides a set-class analysis of the "harmonic support for Stravinsky's melody." Straus, "Problem of Prolongation," 11.

from G in thirds, partially accounting for the presence of C and A.)

Similarly, beginning at rehearsal number 21, the background texture (played by the strings starting at rehearsal number 22) outlines G major triads for some time. The four triads featured in the upper register all belong to the $OCT_{1,2}$, except for the E♭ major triad. More important, as Salzer notes, the upper voice methodically recapitulates the previous structural soprano pitches, including A♭ (G♯ at rehearsal number 19), all of which do belong to this collection. Finally, with increasing energy and tension, the line moves beyond these pitches up to D, the arrival of which is even more significant since, once again, it had been absent from the principal (and generally upper) voices throughout this section. The D thus completes the home octatonic collection on both local and large-scale levels.

While Straus mentions the presence of octatonicism in a parenthetical note, he instead deals with specific sonorities from a set-theoretical perspective. His observations add important details to our understanding of the piece, while the more general octatonic account offered above may be more audible. It also deals consistently with the horizontal aspects of the upper register and/or principal melodic lines, rather than attempting to connect horizontal motions with specific verticalities (which does not, however, preclude the possibility that Stravinsky worked along such lines), and does not ignore A♭. (That A♭ creates another 014 trichord with G and B is simply another reminder of the fact that 014 trichords are a natural byproduct of octatonicism.)

Salzer's local-level analyses of the opening measures will now be addressed (see Figure 2.6). Here Salzer does claim a stricter sort of prolongation. Although the texture does not meet Straus's conditions for prolongation, the polychord Salzer identifies is very audible. It may appear contradictory that the slur over A♭-G-F indicates G as being passing, since G is also the "root" of the chord, and because Salzer asserts that G is the most important pitch of this section

of the piece. This latter potential objection is easily disposed of, since pitches function in different ways on different levels, just as G could be a passing tone in a tonal passage in G featuring a D dominant-seventh chord. As for the issue of G being the root, that is why Salzer specifically designates the sonority as a "polychord," a term which usually has range-specific implications. In this case, G and B are active in the bass and D♭ major is active in the upper lines.

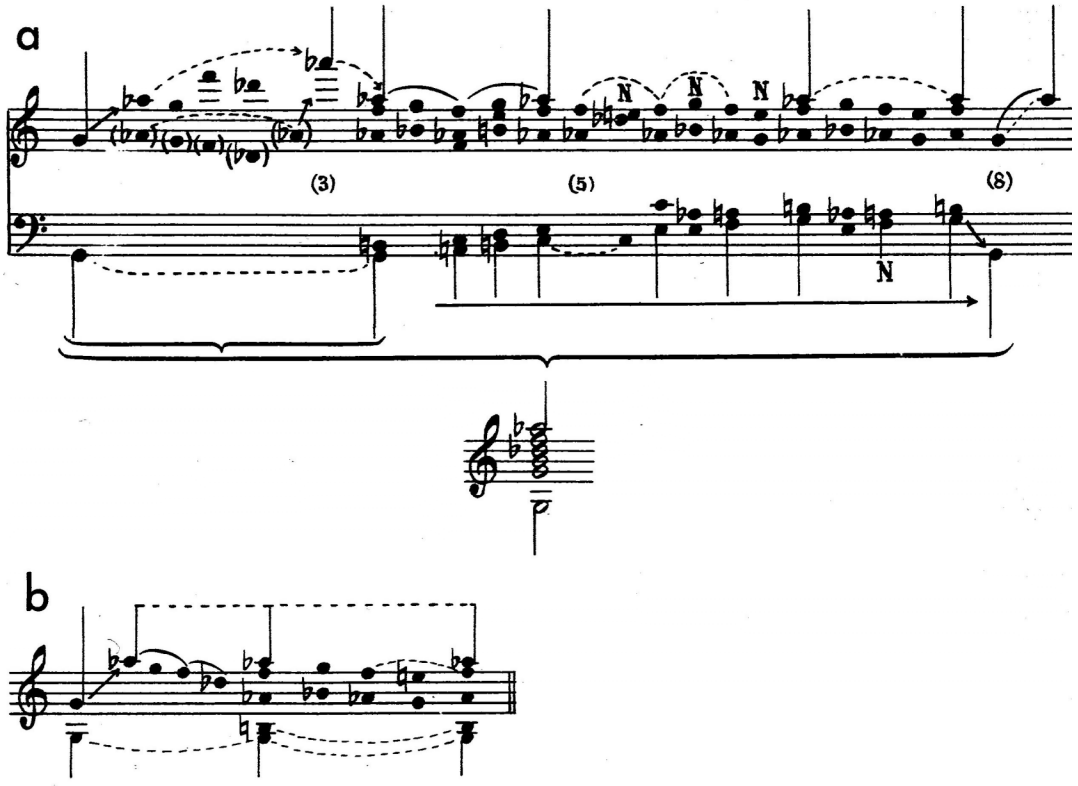

Figure 2.6. Salzer's analysis of Stravinsky, *Symphony in Three Movements* (I), mm. 1-8. Salzer, *Structural Hearing*, Examples 417a and 417b.

As previously mentioned, Straus agrees with Salzer's choice of A♭ as being the structural melodic pitch in this passage, because of its salience. But if we can have melodic structure based on salience, then surely inner voices may also be defined in such fashion, thus allowing for the

possibility of the passing and neighboring motions that Straus rules out. Moreover, the excerpt in question is itself a perfect example of this (see Figure 2.7). While the melody articulated by the winds is played on all four beats and extends from A♭ down to E, the strings only participate in this melodic line on every other beat. Since the A♭s and Fs in the melody also occur every other beat, the strings only play the melodic A♭s and Fs, as the top notes of chords consisting mostly of these same pitches.[221] While these pitches (and the E) appear on offbeats, we hear them as strong beats due to their emphasis and to the fact that the pattern begins on an offbeat (in measure three), after only a brief introduction. Due to their salience, A♭ and F are heard as chord tones, while the Gs and Es are heard as passing tones and neighbor tones.

[221] The only exception to this is the melodic tone E in measure 5, which receives emphasis from the strings, and is accented and sustained for two beats. This E sounds like an exception—an accented neighbor-tone (or perhaps even its own entity to some extent, since it functions as a phrase-divider).

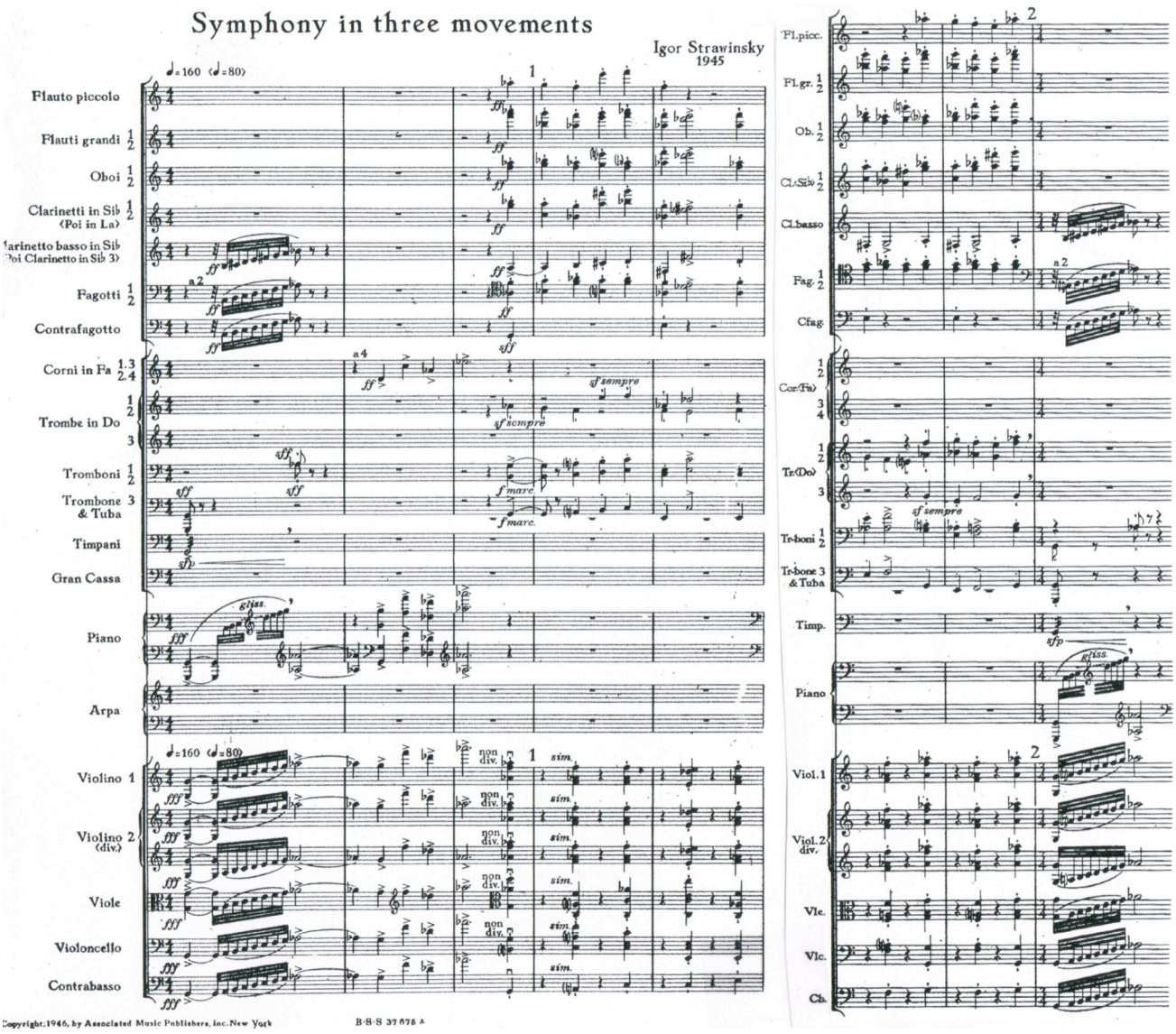

Figure 2.7. The opening measures of Stravinsky's *Symphony in Three Movements* (I).

Returning now to the issue of the polychord itself, it may be further observed that if the D♭ were a D♮, then we would have a $V^{\flat 9}$ sonority, which is a staple of the Schenkerian repertoire. The tonal context here would meet Straus's conditions and fill in the gaps in our understanding of the sonority, but the same problem—if it is a problem—of A♭-G-F would exist. These three pitches form an 013 trichord, and thus are somewhat analogous to Straus's Example 3, which

features an 012 trichord. Of Example 3b (see our Figure 2.5, above), which features descending melodic motion through D-C♯-C, harmonized with C♯ and C, Straus writes: "Is the C♯ a passing tone between two supported tones or is it part of an arpeggiation among the members of the harmony? There is no way of knowing or of making clear, consistent distinctions among the prolongation types."[222] Yet, the same issue exists in the case of the V^{b9} sonority, when the flatted ninth, root, and seventh are used in succession.

One also deals with the matter of steps among non-triadic chord tones—the central issue (Straus's example simply uses two steps, in order to emphasize his point)—in the analysis of seventh chords; for example, when attempting to determine how to label a passing seventh. How much emphasis is required to warrant labeling it as a chord tone, and should the 7 be enclosed in parentheses or not? However, this potential ambiguity does not prevent one from recognizing the dominant function of the chord, and from carrying on with the analysis.[223] The dominant-seventh chord was, of course, sometimes problematic for Schenker as well, but that did not prevent Schenker or Schenkerians from proceeding with their work.

All of these problems are really only theoretical in nature. In actual analytical situations, one simply must adapt to the circumstances at hand. Recall from Chapter 1 that in "Response to Larson," Straus refers to "the same theoretical impasse with the same lack of practical consequence." In this contribution, Straus does back down somewhat from the rigidity of a couple of his original points (prompted by Larson's citation of Schachter).[224] The observations above provide further illustration of Straus's comment, as well as further evidence of the

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[222] Straus, "Problem of Prolongation," 6.
[223] For another example involving prolongation of a dominant-seventh chord, see Larson, "Problem of Prolongation," 107.
[224] Straus also defends himself against the charge of circularity leveled by Lerdahl, and repeated by Larson. Straus, "Response to Larson," 138.

limitations of his original article.

In the following section of this chapter, I will explore some ideas regarding theory and repertoire. Straus's article is relevant to some of the points made there, but I will discuss his views now, as a preface to my later investigation.

Early on in his discussion of Salzer, Straus mentions the issue of theoretical consistency: "Salzer's determination of structural pitches, then, seems not to depend upon a consistent distinction of consonance and dissonance or a clearly articulated notion of harmonic support. In fact a consistent notion of harmonic support would be virtually impossible to develop for this music."[225] In his concluding remarks on Salzer he states:

> Salzer's analysis is interesting in itself, showing how one particularly fine musician tried to hear this passage, but its lessons cannot be generalized or applied to other pieces. Salzer's approach is essentially ad hoc, unsupported by a secure theoretical foundation. . . . For the larger musical spans . . . and for music that is most characteristic of the twentieth century, prolongation has proven an attractive but ultimately useless tool.[226]

If, as Straus argues, it is essentially impossible to develop consistent criteria for harmonic support in this repertoire, then how is it possible to avoid an ad hoc approach when one wishes to engage with the harmonic aspects of this music in a way that goes beyond the mere labeling of related sonorities? His answer, as indicated by the last sentence cited, is simply that the concept of harmonic support is irrelevant for post-tonal music, at least as he defines it. Again, there appears to be something circular about this sort of explanation. Straus defines prolongation to fit only the Schenkerian repertoire, and then argues that only a set-theoretical approach is appropriate "for music that is most characteristic of the twentieth-century." Moreover, music lying between these two poles is simply deemed to be less important; this sense is reinforced by

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[225] Straus, "Problem of Prolongation," 10, 12.
[226] Ibid., 13.

the fact that Straus makes similar statements earlier in the essay, referring to "the most significant post-tonal music," and "the post-tonal music we care most about."[227]

Straus also seems to suggest that an analysis must be applicable to other pieces for it to be worthwhile; that analysis should be in the service of theory.[228] In my own experience, I find that I am often driven to analyze a passage or piece of music because I am struck by something unusual about it that I cannot immediately grasp. This would seem to be sufficient justification for producing an analysis. Yet, such atypical passages might be more likely to stretch the existing gamut of analytical tools beyond their normal range of application. It would be unfortunate if we felt pressured to examine normative music in order to produce analyses of maximum rigor (remarks from Lerdahl's *Tonal Pitch Space*, cited below, are closely related to this issue). In light of the common observation that twentieth-century compositions often create their own individual language and logic—of which Straus here provides a variant—it is worth asking whether the pursuit of general principles ought to necessarily be valued over the knowledge of particular pieces.

The Problem of Dilution

In the conclusion of his essay, Straus states, "If we cherish the concept of prolongation, we should not allow it to be watered down."[229] The phrase "watered down" will be familiar to some readers, as it or a variation of it—"diluted"—is often used in reference to Salzer directly (or indirectly through his student, Roy Travis). In his review of *FC*, Laufer writes, in reference to

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[227] Ibid., 6, 1. Straus also repeats his point regarding the "most characteristic" music of the twentieth century in the final paragraph of his essay.
[228] Recall a similar issue arising in the discussion of Smith; see Chapter 1, page 57.
[229] Ibid., 19.

the analysis of later repertoire, "By and by one asks what is left, as all the specific techniques Schenker described must all go by the board or be diluted into an indistinct blur."[230] Similarly, Rothstein remarks in "Ernst Oster (1908-1977)," "Oster . . . resisted all attempts to water down that [Schenker's] work for reasons either pedagogical or ideological"; previously, in his "Americanization" essay, he had written that Salzer's extension of Schenker's techniques to later repertoire "may strike us oddly now, as a watering-down of essential distinctions."[231] And Ulrich Kurth, in "Alte Musik im Werk Heinrich Schenkers und Felix Salzers," asserts, "The success of 'reform Schenkerism' in the United States is due to his pupils Hans Weisse and Felix Salzer having diluted and compromised his ideas."[232] Most significantly, there is Oster's polemical response to Roy Travis's "Towards a New Concept of Tonality?," "Re: A New Concept of Tonality (?)," where he writes:

> Schenker's basic idea is the projection in time of the triad as given by nature. Mutilate this idea and substitute for triad "a particular tone, interval, or chord" (no matter how dissonant or far-fetched), and an "explanation" for virtually anything can be devised. Application of such a diluted idea makes a diluted way of thinking a necessity; thought becomes more general, hazier, less accurate. And, as in matters of the mind, this inaccurate way of thinking does not restrict itself to the new, "extended" field of application, but infects the original field where the most rigorous kind of thinking is required. As a result everything appears in the same haziness; everything seems related and differences in value cease to exist. "Triad," "major seventh," "Stravinsky," "Chopin"—they all are more or less alike.[233]

Salzer et al. did in fact dilute Schenker's ideas in extending them to repertoire for which they were not intended, and as Oster observes, these diluted ideas were then applied to the repertoire for which they were intended. In the introduction to Elisabeth Mann Borgese's

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[230] Laufer, review of *FC*, 161. The sentence which precedes this excerpt is relevant to our examination of salience and subjectivity: "Principal tones must be designated by other kinds of emphasis, but on what consistent, non-subjective basis?"
[231] Rothstein, "Ernst Oster (1908-1977), 130; idem, "Americanization," 199.
[232] Kurth, "Alte Musik," 337. This statement appears in an abstract in English.
[233] Oster, "New Concept," 96, 98.

translation of Schenker's *Harmonielehre*, Jonas makes a similar statement to those above, remarking that Salzer's attempt to apply Schenker's ideas to later repertoire "was possible only through misinterpretation of Schenker's basic theories . . . and therefore is doomed to fail."[234] But what strikes me about this passage is the phrase "was possible only": the application of Schenker's ideas to later repertoire *is possible*, but *only* if those ideas are diluted. The chief idea that must be diluted is that of strictly-defined prolongation, and this translates into a focus on salience rather than stability. This is in fact what Salzer did, except that he did so intuitively (and inconsistently).[235] Salzer's mistake—if indeed it ought to be referred to as such (see Schachter's remarks, below)—was thus not so much his actual approach, but simply the fact that he dared to apply Schenker's ideas to other repertoire.

For if Schenker's ideas must be diluted to examine other repertoire, then it follows logically that the other repertoire itself was in some sense "diluted," and this, of course, was much of what the nineteenth-century debate over the New German School was about; the tonal system *was* being radically altered, and new compositional techniques threatened to eclipse the traditional harmonic/contrapuntal framework. Although his motivations were complex in origin, Schenker carried on the "traditionalist" criticism of the New German School, and he used his theoretical ideas as a potent weapon for passing aesthetic judgment on its composers (and those who came after).[236]

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[234] Schenker, *Harmony*, viii (note 2). David Carson Berry cites this passage on page 104 (note 1) of his article, "Hans Weisse and the Dawn of American Schenkerism."

[235] Regarding this inconsistency, Lerdahl, in his only mention of Salzer, compares Salzer's analysis of the opening of Debussy's *Prélude à l'après-midi d'un faune* to that of Brown. He notes that while Salzer's analysis here favors stability criteria, Brown's favors salience criteria. Lerdahl takes advantage of this situation to argue for an interpretation that is founded on both stability and salience. Lerdahl, *Tonal Pitch Space*, 315-16.

[236] A significant source in this regard is Brahms's manuscript, "Oktaven u. Quinten u.A.," to which Schenker provided commentary in the facsimile edition of 1933. Robert Laudon's "The

We may claim to detest these aesthetic judgments of Schenker, but they are insidiously propagated if we collectively balk at the analysis of other music because it does not work as consistently or systematically. Oster's comment regarding "hazier, less accurate" thought, while an appropriate criticism of Travis, in a way corresponds to the pursuit of clear shapes that is generally part of the Schenkerian enterprise.[237] Rothstein's candid remarks in the preface to *Phrase Rhythm in Tonal Music* are illuminating in this regard:

> There is one bias in particular that colors my aesthetic judgments: in general, I prefer clear structures to obscure ones. On the one hand, I prefer that musical structures be complex and subtle enough so that clarity does not become trivial. On the other, I prefer that ambiguity in music be subject to ultimate clarification, so that ambiguity itself serves a structural purpose (as well as an expressive one) and obscurity does not become an end in itself. This is hardly an original bias. I share it with, among others, Heinrich Schenker.[238]

Apart from Schenker, Rothstein does not say with whom he shares this bias, and I am not aware of other passages where Schenkerians express this actual preference, although there are places

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Debate about Consecutive Fifths: A Context for Brahms's Manuscript 'Oktaven und Quinten'" illustrates ways in which Brahms et al. might have viewed the music of the New German School as a dilution of the tonal system. His observation that they "looked at the new music and found it full of cheap, virtuoso tricks," is obvious, and general enough, but Laudon's work offers detailed insights of relevance as well. (Laudon, "Consecutive Fifths," 57.) For example, Laudon discusses a passage from one of Brahms's letters to Clara Schumann: "Polyphony means *Vielstimmigkeit*, many-voiced. And *Vielstimmigkeit*, the many-voiced, must be carefully distinguished from *Vollgriffigkeit*, whole fistfuls of notes." Laudon compares passages of Brahms and Liszt—all containing consecutives—that seem to exemplify Brahms's notions of *Vielstimmigkeit* and *Vollgriffigkeit*, respectively. Brahms's letter and Laudon's article conclude: "Can an ocean of notes by Bach truly be compared with these fistfuls?" On an elemental level, the debate over the New German School was about counterpoint. Letter from Brahms to Clara Schumann, May 31, 1856, in *Clara Schumann–Johannes Brahms: Briefe aus den Jahren 1853-1896*, edited by Berthold Litzmann, vol. 1, 191; page 61 in Laudon. Translation by Laudon. For more on the path to Schenker's rejection of Wagner—in particular—in favor of Brahms, see Cook, *Schenker Project*, 85ff, 231ff.

[237] Oster's crticism is of course also meant to apply to Salzer, by proxy.

[238] Rothstein, *Phrase Rhythm*, ix. This work is focused on the traditional Schenkerian repertoire, although Rothstein notably includes a chapter devoted to Wagner.

where they do seem to praise the clarity that may be found in the Schenkerian repertoire. For example, in "Either/Or," Schachter writes that "it is just as much a part of the composer's art as it is of the sculptor's or painter's to be able to create clear and distinct shapes."[239] Also notable are Rothgeb's comments in one of his reviews of *Beyond Schenkerism*, where he refers to Beethoven's "characteristic clarity," and also remarks that "Beethoven has . . . underscored its meaning as a strong, initial bar—and clarity of this kind is part of the essence of classicism in music—by dynamics, orchestration, and, as we shall presently see, articulation."[240]

It is certainly true, as Rothgeb notes, that clear shapes are a hallmark of classicism, and all of the composers that interested Schenker retained part of the classicist aesthetic, including those considered to be part of the Romantic era. And while neither Schachter nor Rothgeb express an actual bias, it is easy to see why Schenkerians might naturally hold one, at least with respect to the music that they prefer to analyze. (Of course there is nothing wrong with preferring certain music. The issue that concerns me is the combined effect of many individuals sharing the same biases, such that other music appears less important by comparison.)

Consider Russ's comment that "the music of Mozart has always been a happy hunting ground for Schenkerian analysts, since his music is structured perfectly according to their principles."[241] While this is of course an overstatement, as there are plenty of challenges and ambiguities one faces in analyzing Mozart, Schenkerian analysis is indeed highly effective at revealing the clear shapes in this music. But the pull towards certain repertoire is not limited to

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[239] Schachter, "Either/Or," 124. Russ discusses this passage as well, although I think Russ, and others, do not seem fully to understand Schachter's strategy of beginning "Either/Or" with elementary examples in order to demonstrate that ambiguity is in fact sometimes only perceived. Similarly, Russ's critique of Schachter's analysis here is flawed and seems to miss the point. Russ, "On Schenkerism," 269.

[240] Rothgeb, Review of *Beyond Schenkerism* in *Theory and Practice*, 38 (note 15), 38.

[241] Russ, "On Schenkerism," 267

the Schenkerian domain. Our analytical tools are also highly effective (though certainly not fully sufficient) at revealing the logic of, for example, Webern. There is something pure—one might say, undiluted—about the perfect correspondence of compositional technique and creative disposition found in these two composers especially, and our analytical systems function most rigorously for music closest to these poles. Hence the natural gravitation we have often felt, perhaps particularly in the past, towards "Schenker and sets" and its concomitant repertoire.

The music that lies in between is more difficult to generalize, or theorize, about. It may then by comparison appear, and perhaps even in some sense be, less "systematic." (This sense of "systematic" will be further explicated below, in connection with Lerdahl's *Tonal Pitch Space*.) For the more highly one is trained in Schenkerian analysis, the more acutely one perceives the technical differences between the composers of the New German School (and beyond) and their more "traditionalist" contemporaries; the more acutely one perceives the rigorous, but strictly tonal, logic of the latter.

Rothstein also mentions that Haydn depicts "Chaos without writing chaotic music." How, then, will pieces such as Scriabin's prelude op. 33, no. 2, which is marked "Vagamente," or that of op. 74, no. 4, which bears the indication, "lent, vague, indécis," appear when we view them through the lens of Schenkerian analysis?[242] Will they appear to be "obscure" and "chaotic" for their own sake? Perhaps, although it depends on who is doing the viewing. And Rothstein, it should be mentioned, devotes an entire chapter to Wagner in this volume. He also notes that "ambiguities" can be "precisely calibrated."[243] But a passage from Schachter's essay, "Felix Salzer (1904-1986)," is particularly apt:

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[242] The latter of these preludes approaches atonality.
[243] Rothstein, *Phrase Rhythm*, ix.

> Salzer's own analyses of pieces from the late nineteenth and twentieth centuries are hardly cited any more except perhaps as *Gegenbeispiele.* Still, I think that some of them—especially those of pieces reasonably close to earlier practice—would repay study. His attempt to find large-scale patterns of voice leading in this music does not seem to me to be a futile or unworthy enterprise—indeed quite the contrary. In this connection I might suggest that one look at his analysis in *Counterpoint in Composition* of Scriabin's Prelude, Opus 39, Number 2. I don't agree with it in every respect, but nonetheless I find it very interesting and illuminating.[244]

Moreover, this is by no means the only place where Schachter expresses such a view; indeed, he has consistently supported the extension of Schenker's ideas to other repertoire. In another passage from the same essay he goes even further in characterizing the importance of Salzer's work, stating that "Salzer's willingness to broaden the scope of the approach while purging it of musical polemics and political ideology was a positive, indeed a necessary, step."[245] In "A Dialog between Author and Editor," Schachter states, "The various attempts by Salzer, Travis, and Laufer to modify the approach in order to deal with later repertory are perfectly legitimate."[246] And, in his article on Schenker's politics, Schachter writes, "Schenker himself had little if any interest in the kinds of non-functional verticalities that characterize this [Chopin] Etude, but they can be an important element in the design of a composition. Awareness of them is perfectly compatible with a Schenkerian orientation in other matters, but it extends the analyst's (and performer's) reach into areas that Schenker himself did not enter. And why not extend it?"[247] These statements stand in stark contrast to those of Jonas and Oster (and, interestingly, Laufer), above.

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[244] Schachter, "Felix Salzer," 110. Scriabin's op. 39, no. 2 was written in 1903, the same year as the op. 33 prelude mentioned above. It is marked "Elevato," is highly chromatic, replete with altered dominants, and contains some chromatic third relations as well.
[245] Schachter, "Felix Salzer," 109.
[246] Schachter, "Dialogue," 10.
[247] Schachter, "Schenker's Politics," 15.

Schachter here mentions the elder analysts Salzer, Travis, and Laufer, but other later contributors have done important work on transitional repertoire as well, for example, Robert Morgan, Anthony Pople, James Baker, and Matthew Brown.[248] Significantly, many analysts working in this area also combine the Schenkerian/Salzerian approach with neo-Riemannian theory and/or Fortean set theory, tools which were developed after *Structural Hearing* was written. Nevertheless, I would argue that this body of work has not received as much attention as it merits, and still represents a slim margin of the analytical literature.[249]

These analysts, working during a later and more specialized time period, oftentimes refine aspects of Salzer's approach. However, I have attempted to defend the Salzerian tradition directly at its source, in part by demonstrating how Salzer's own work withstands its most well-known criticisms. This is not to say that Salzer's analyses are always completely satisfactory, or that his Stravinsky analysis captures every significant feature of the piece, but rather to affirm the validity and necessity of his approach in general. Now I would like to address the present-day Salzerian enterprise from a different perspective, through the work that is most significant for our purposes, Lerdahl's *Tonal Pitch Space*.

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[248] See Baker, *The Music of Alexander Scriabin*; idem, "Alexander Scriabin: The Transition from Tonality to Atonality"; idem., "Schenkerian Analysis and Post-Tonal Music"; Pople, "Skryabin's Prelude, op.67, no.1: Sets and Structure"; idem, *Skryabin and Stravinsky, 1908-1914: Studies in Theory and Analysis*; Brown, "Tonality and Form in Debussy's *Prélude à 'L'Après-midi d'un faune'*"; *Explaining Tonality: Schenkerian Theory and Beyond*; Morgan, "Dissonant Prolongation: Theoretical and Compositional Precedents." Another elder theorist, Forte, did related work early on; soon after the publication of *Structural Hearing*, he published a somewhat similar work, *Contemporary Tone Structures*. According to Rothstein, Forte "no longer stands by that book." (Rothstein, "Americanization," 199). However, many years later, around the time that Baker, Morgan, and Pople published the aforementioned works, Forte returned to work in this area; see, for example, "New Approaches to the Linear Analysis of Music," and "Middleground Motives in the Adagietto of Mahler's Fifth Symphony."

[249] Russ makes a similar observation. Idem., "On Schenkerism," 267-68.

Lerdahl's *Tonal Pitch Space*

In "Atonal Prolongational Structure," Lerdahl states, "The historical development from tonality to atonality (and back) is richly continuous. Theories of tonality and atonality should be comparably linked."[250] Twelve years later, in the preface to *Tonal Pitch Space*, he states:

> When I matured musically in the late 1960s, the reigning view was that Schenkerian theory explained tonal music and twelve-tone theory (with its set-theoretic offshoot) explained twentieth-century music. I have never been comfortable with this dichotomy and have endeavored to develop a framework for understanding music that incorporates both the relatively unchanging cognitive foundations of the musical mind and the historical continuities that underlie changes in musical style.[251]

Indeed, *Tonal Pitch Space* commences with the Schenkerian repertoire and ends with atonal repertoire, but also deals with music that lies between.[252] The repertoire covered is thus similar to that dealt with in *Structural Hearing*, except that Salzer begins with earlier repertoire, and Lerdahl ends with later repertoire. *Tonal Pitch Space* begins with an overview of *GTTM*, presents new theoretical ideas pertaining to tonal music, and then applies all of these concepts to transitional and atonal repertoire. *Tonal Pitch Space*, in many respects, is therefore a formalization of Salzer, just as *GTTM* is essentially a formalization of Schenker (as discussed in Chapter 1).

There is another significant correspondence between Lerdahl and Salzer: both strongly emphasize bottom-up analytical technique in their approach to high-level structure. They both avoid what Lerdahl and others have referred to as Schenker's "axiomatic" background structures (as discussed in Chapter 1). Salzer is of course more closely tied to Schenker's three *Ursatz* models, and occasionally uses them to analyze transitional repertoire in a way that is not very

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[250] Lerdahl, "Atonal Prolongational Structure," 67.
[251] Lerdahl, *Tonal Pitch Space*, vii.
[252] Lerdahl does not address serialist works in *Tonal Pitch Space*.

convincing. His analytical technique, as noted above, is not consistent. But even his approach to the Schenkerian repertoire can hardly be described as being axiomatic, because of his willingness to alter the background structure on an ad hoc basis (also as discussed in Chapter 1).

The question of bottom-up versus top-down analytical techniques has been implicit in much of the discussion in this chapter, and in portions of the previous chapter.[253] We have seen that the traditional *Ursatz* models, at some point in the development of Western music, are no longer relevant. However, this point can only be determined within the context of examining individual pieces. The repertoire cannot be cleanly divided into Schenkerian and non-Schenkerian categories. There are many "problematic" compositions within the Schenkerian repertoire as it is traditionally defined, and there are many pieces outside of this repertoire for which one of the three standard *Ursatz* models work well.[254] Both Lerdahl and Salzer avoid the

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[253] Naturally, much other discourse intrinsically involves this issue as well, such as any discussion of reduction or the perception of the whole and the part. For discussion pertaining more specifically to the problem at hand, see Pople, "Systems and Strategies," 113-14 and 121; Schachter, "Structure as Foreground," 302; Salzer, *Structural Hearing*, 206-208; Larson, "Problem of Prolongation" 116; Narmour, "Our Varying Histories," 13; Eyton Agmon, "Music Theory as Cognitive Science: Some Conceptual and Methodological Issues," 297-98; Keiler, "On Some Properties of Schenker's Pitch Derivations," 203ff.; Keiler, "Empiricist Illusion: Narmour's *Beyond Schenkerism*," 194; Narmour, *Beyond Schenkerism*, 70 and 122; Brown, "Rothstein's Paradox and Neumeyer's Fallacies," 121; and Lerdahl, "Response to Larson," 152-53.

[254] It should also be noted that Salzer himself discusses a category of "problematic compositions," which indicates that even with a freer approach to background structure, concepts of linear (and/or directed) motion and large-scale structural unity are not necessarily appropriate for every piece. The Schenkerian/Salzerian approach can nevertheless function to reveal the absence of these attributes (as they are typically defined); indeed, Salzer still presents graphs of pieces he finds to be problematic in order to illustrate his point of view. Salzer also does not shy away from investigating such pieces, but rather mentions that "the analysis of unclear or at least problematic pieces should also be considered." With respect to a work of Chopin, he observes, "I believe that this lack of large-scale melodic organization contributes much to the kaleidoscopic impression of this Nocturne, although its tonal plan is convincing." Salzer, *Structural Hearing*, vol. 1, 261-63.

conundrum of how to partition the repertoire, instead advancing a largely bottom-up approach that allows the analyst to simply discover the background as they hear it.[255]

In *GTTM*, Lerdahl and Jackendoff recognize the ambiguities that may arise when preference rules conflict with one another and explore the option of attempting to resolve such ambiguities with quantification:

> The reason that the rules fail to produce a definitive analysis is that we have not completely characterized what happens when two preference rules come into conflict. Sometimes the outcome is a vague or ambiguous intuition; sometimes one rule overrides the other, resulting in an unambiguous judgment anyway. We suggested above the possibility of quantifying rule strengths, so that the nature of a conflicting situation could be determined numerically.[256]

Lerdahl and Jackendoff wisely conclude that such quantification—and the concomitant quantification of the degree to which various rules apply in a given situation—is too problematic to attempt. (They do, however, remain open to the option, pending further developments in the study of music cognition: "Achieving computability in any meaningful way requires a much better understanding of many difficult musical and psychological issues than exists at present. In the meantime, we have . . ."[257]) In explaining this decision, they offer an impressive description of the difficulties and complexities of quantification. Of particular concern to them are issues regarding parallelism, which is a form of salience, and it is clear from their discussion that matters of salience are closely related to problems with quantification.[258]

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[255] Another benefit of a bottom-up approach to background structure is that *Ursatz* parallelism (if we wish to still call it that) takes on added significance. In a work exemplifying a traditional *Ursatz* from $\hat{3}$, for example, it may be all too easy to find parallelisms occurring on various levels, due to the generic nature of the background. In my Thelonious Monk Quartet analysis, which appears in Chapter 3, I have found parallelisms of large-scale structure that I feel are compelling due to the unusual nature of the structure itself.

[256] Lerdahl and Jackendoff, *GTTM*, 54.

[257] Ibid., 55.

[258] The actual term "salience," however, is not used much in *GTTM*, as mentioned in Chapter 1.

Of course, preference rules do not always conflict, as, for example, when salience and stability are in accordance with one another (as discussed in Chapter 1). In such cases, *GTTM*'s theory will be more successful, but the music will also be more simple (as mentioned). Fortunately, when they are not in accordance, stability will usually override salience in the Schenkerian repertoire, thus resolving many of those issues. But many preferences are in fact subjective and cannot be made into objective preference rules; "when two preference rules come into conflict," people might simply disagree. This becomes strikingly apparent in the analysis of transitional repertoire, where tonal closure is weaker and less frequent, and salience is thus more structurally significant. As has been seen, salience is also inherently more subjective. The problem of quantification thus becomes a more serious issue in this repertoire.

In "Atonal Prolongational Structure," Lerdahl first introduces his concept of salience conditions.[259] Significantly, each condition on his list is accompanied by a number from one to three, which indicates the relative strength of the rule, although Lerdahl notes that "this quantification is only a rough indication." In *Tonal Pitch Space*, Lerdahl gives the same list of salience conditions, presenting it in one of the chapters dealing with "chromatic spaces," i.e., those frequently found in transitional repertoire ("atonal spaces" are dealt with in a separate chapter).[260] However, the numbers given in "Atonal Prolongational Structure" are omitted here;

Also recall that parallelism in *GTTM* is a broadly defined phenomenon, and Lerdahl and Jackendoff state that "the importance of parallelism in musical structure cannot be overestimated." Due to the importance of parallelism, Lerdahl and Jackendoff make the statement cited in Chapter 1 regarding a "serious gap" in their theory, and observe that formalizing the perception of parallelism is a problem in the field of psychology in general. In lieu of formalization, they instead "must rely on intuitive judgments" in this domain. Lerdahl and Jackendoff, *GTTM*, 52, 53.

[259] Lerdahl, "Atonal Prolongational Structure," 73-74.

[260] Lerdahl, *Tonal Pitch Space*, 320-21.

Lerdahl evidently decided that even this small step towards quantification was injudicious and/or not meaningful enough to be included.

Although the lack of quantification of various elements is occasionally evident in *Tonal Pitch Space*, this issue generally remains in the background.[261] However, a passage from Lerdahl's concluding remarks directly addresses how the matter of quantification fits into the overall scheme of things:

> The last three chapters have shown how the entire tonal theory—grouping and meter, time-span and prolongational reduction, pitch space with its versions of δ, prolongational paths, tensional curves and attractions, functions and phrasal form schemas—can be applied, with appropriate modifications, to highly chromatic and atonal music. In the process, however, the theory has gradually become less systematic, with increasing reliance on the underspecified interaction of unquantified rules of salience and consonance. Changes in the basic spaces themselves cause this decrease in derivational clarity. If the musical signal does not facilitate the inference and transformation of stratified basic spaces, the listener turns to pyschoacoustic factors to organize the stimulus."[262]

Lerdahl's recognition that his theory becomes "less systematic," or diluted, as it is applied to increasingly chromatic repertoire is apropos to our discussion, as is his observation that this process of dilution stems directly from the music itself, and is thus unavoidable.

Without quantification of salience, we only have a list of ten salience conditions (including two pertaining to the problematic issue of parallelism) and a preference rule that simply states, "Of the possible choices for the head of a time-span T, choose an event that is

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[261] See ibid., 77-80 for a section entitled "Issues of Quantification." This discussion, however, investigates discrepancies between some of the newer aspects of Lerdahl's theory with specific empirical studies reported in the music cognition literature, and does not deal with issues of the quantification of salience conditions in the theory itself.

[262] Ibid., 381. The reader may notice that several components of Lerdahl's tonal theory mentioned here are not familiar from *GTTM*. However, Lerdahl's characteristic diagrams from *GTTM* are still central to his analyses, with all but one of the other components being presented separately.

. . ."[263] As Lerdahl and Jackendoff acknowledge, when the rules are insufficient for dealing with certain aspects of the music, they must then be dealt with intuitively.[264] This, of course, is precisely what Salzer did to begin with.

While discussing the tonal music that is the subject of *GTTM*, Lerdahl mentions how "the influence of performance nuances" creates difficulties for the quantification of grouping structure.[265] It would seem, though, that these nuances are more important in the analysis of later repertoire, as they pertain to salience (dynamics, accents, pauses, timing, and so forth), not to stability (since the notes themselves are not usually changed by performers). In any case, in the intuitionist approach, these performance variables fall within the purview of individual analysts, who subjectively interpret the work according to how they hear it, their analysis constituting a "hearing."

The role of performance takes on even more significance in Nicola Dibben's 1994 contribution, "The Cognitive Reality of Hierarchic Structure in Tonal and Atonal Music," which reports and interprets the results of three experiments designed to test whether or not listeners perceive the sort of time-span reductions presented in *GTTM* and in "Atonal Prolongational Structure." Dibben's subjects perceived these reductions in tonal music but not in atonal music, leading her to suggest that Straus's limitations on post-tonal prolongation are more appropriate than Lerdahl's conclusions. Straus, in his 1997 essay, "Voice-Leading in Atonal Music," in turn points to Dibben's article as providing "some empirical support for the critique offered in these articles and in the following discussion."[266]

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[263] Ibid., 320, 389.
[264] For example, see the above discussion regarding parallelism.
[265] Ibid., 7.
[266] Straus, "Voice-Leading," 239 (note 4). "These articles" refers to Straus's earlier article on post-tonal prolongation and to Baker's "Schenkerian Analysis and Post-Tonal Music."

However, Dibben errs in not accounting for performance variables; no information is given about what recordings were used in the experiments. Dibben uses Lerdahl's time-span reductions from "Atonal Prolongational Structure" of Schoenberg's *Three Piano Pieces*, op. 11, no. 1, and *Six Little Piano Pieces*, op. 19, no. 2 (see Figure 2.8, below), but only mentions that "performances of the original extracts were recorded onto tape from compact disc recording," with no further specification.[267]

[267] Dibben, "Cognitive Reality," 15. In another experiment reported in this article, an unspecified commercial recording was used, as well as a student recording made in lieu of any available commercial recordings. Ibid., 6.

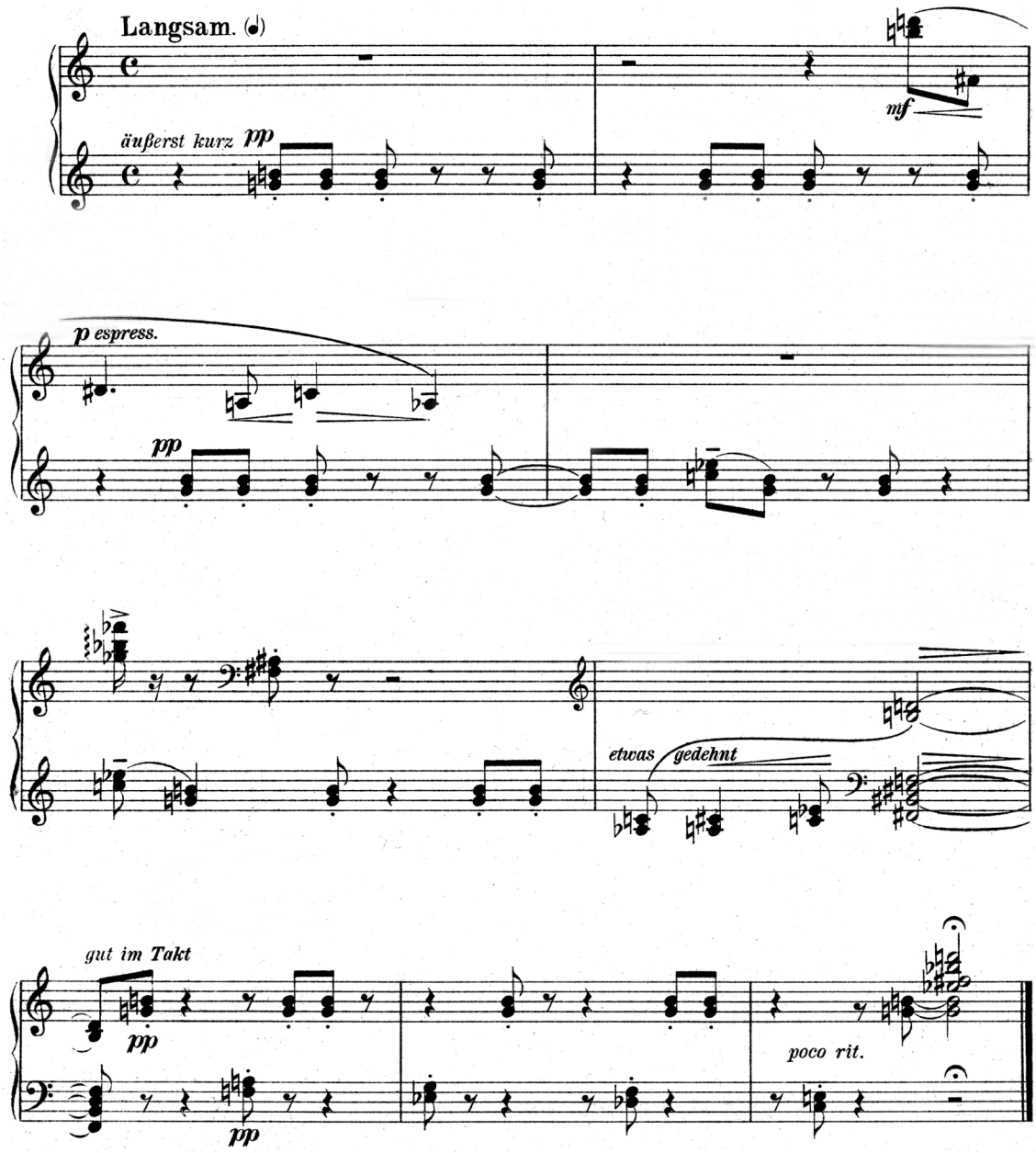

Figure 2.8. Schoenberg's *Six Little Piano Pieces*, op. 19, no. 2.

I consulted recordings by Maurizio Pollini, Paul Jacobs, and Peter Hill of Schoenberg's op. 19, no. 2—an extremely sparse work in which the subtleties of dynamics, articulation, and timing are highly significant—and, as expected, found a large degree of variation in their performances. For example, Hill puts much greater dramatic emphasis on the D and B dyad

sounding in measure 2, which is only marked mezzo-forte (with a brief crescendo into the F♯ that follows), but is the loudest dynamic marking of the piece. In Dibben's foil that is paired with Lerdahl's reduction, this high dyad is reduced out.[268] Only fourteen out of twenty-seven subjects chose Lerdahl's reduction over the foil, which the remaining thirteen subjects chose.[269] But surely the results would have been different if the subjects had heard Hill's recording. Or, perhaps they did in fact hear Hill's recording—since we are given no information in this regard, it is rather difficult to interpret the data. More important, Dibben seems oblivious to this issue, never mentioning it in the discussion section where other possible experimental weaknesses are indicated.

However, Lerdahl himself may be partly responsible for this situation. In "Atonal Prolongational Structure," he specifically asks whether or not the mid-range dyad G-B, which is repeated throughout most of the piece, is the "main thing" or "accompanimental," and even presents two different full analyses based on this "ambiguity."[270] He decides that the G-B dyad is more accompanimental, but he does not mention the role of performance in this context, or anywhere else in the article. Lerdahl and Jackendoff had already addressed the effects of performance in *GTTM* (where there was of course more space for such discussion), so in a sense that ground had already been covered; nevertheless, such remarks would seem to be even more important in an investigation of music where salience is the principal determinant.[271]

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[268] Two other pairs of reductions, all foils, are used in conjunction with this piece as well. Dibben explains, "events in the reduction were substituted by events occupying a lower place in the structural hierarchy in order to create a number of foils, each differing in various degrees from the reduction." Ibid, 3.
[269] Ibid., 21.
[270] Lerdahl, "Atonal Prolongational Structure," 79-82.
[271] See pages 63 and 64 of *GTTM*, for example.

Dibben does note that "real performances of the *reductions* could have been used," but that in order to eliminate possible performance variations, computer-generated recordings were used instead.[272] Then, in her 1999 contribution, "The Perception of Structural Stability in Atonal Music: The Influence of Salience, Stability, Horizontal Motion, Pitch Commonality, and Dissonance," she cites work from the intervening years: "Previous research suggests that performance expression provides cues to the perception of musical structure, particularly in cases where structural relationships between musical events are ambiguous."[273] However, Dibben's response to this work is to have the musical examples performed on a Disklavier MIDI piano, and then to remove the "timing deviations and all dynamic differentiation . . . to create 'dead-pan' versions."[274]

It is hard to understand how the effects of salience can really be studied using such flat recordings, and this study attempts to address all of the various salience factors. These "dead-pan" recordings would certainly not work in the context of Dibben's 1994 discussion of Schoenberg's op. 19, no. 2. However, her 1999 studies are much different than those previously reported, and she cleverly crafts the experiments around this limitation. For example, she embeds the phenomenal accents (which are removed from the recording) into an alternate and irregular metric interpretation, which is then tested on the subjects. Although, this strategy only seems to work because, as Dibben notes, "these materials exhibit a high degree of congruence between metric structure and salience."[275] She also discusses the issues that arise from her use of dead-pan recordings later in the article.[276]

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[272] Dibben, "Cognitive Reality," 6. Emphasis added.
[273] Dibben, "Influence of Salience," 271.
[274] Ibid., 271.
[275] Ibid., 276.
[276] Ibid., 283-84.

The above remarks concerning Dibben's work highlight how the challenges of attempting to quantify salience not only make it difficult to formalize the analysis of this music (as well as the analysis of the Schenkerian repertoire), but also undermine attempts to provide empirical evidence for such formalism. Other researchers who study this music empirically confront the same sorts of complications that Dibben encounters. As is the case with formalist analysis, empirical work will often be indefinite in its conclusions.

One of the main effects of *GTTM* is that, through formalism, it clarifies aspects of Schenkerian analysis. In Chapter 1, *GTTM* and Schenkerian analysis were characterized as being two sides of the same coin. Similarly, *Tonal Pitch Space*, through formalism, clarifies aspects of Salzerian analysis, but is still only one side of the coin. Above, I have called attention to some of the limitations of *Tonal Pitch Space*; however, I also believe that it contributes a great deal to our understanding of this music, and is equally as masterful a work as *GTTM* is. *Tonal Pitch Space* may not have had as broad of an impact as *GTTM* did, but this is probably due in large part to the fact that it was not as groundbreaking (much of *Tonal Pitch Space* is devoted to extending the theory presented in *GTTM* to later repertoire), and is not really a reason to value the work itself any less than we value *GTTM*.[277] In fact, if we decide that we do not value *Tonal Pitch Space* as highly as *GTTM*, it is hard to come up with compelling reasons as to why. Surely, a chief candidate would be the explanation that its analyses are more subjective and therefore do not "work" as well as those of *GTTM*. Yet, as we have seen, this apparent shortcoming stems from the nature of the repertoire itself. This argument, then, would seem to involve a self-reinforcing set of biases for "Schenker and sets," as discussed above. If, on the other hand, we decide that we do value *Tonal Pitch Space* as highly as *GTTM*, then the former

[277] In 1983 our field was also less diverse and eclectic than it is today, and thus perhaps more susceptible to widespread influence from a single work.

may almost be regarded as a sort of mandate for an increase in activity pertaining to the Salzerian tradition—for ultimately, the "meta-theory" of formalism must be applied to everyday musical analysis, and not only to short pieces.

This last point about short pieces is not insignificant. Lerdahl's approach really is limited in the length of pieces to which it may practically be applied. The analyses in *GTTM* and *Tonal Pitch Space* require a full vertical page (or two pages in landscape format, as Lerdahl employs in *Tonal Pitch Space*, which alleviates the need for the minuscularity of some of the diagrams found in *GTTM* (see that found on page 259, for example)) for each line of a score, to allow for about twelve staves of music and reductions (the actual score is typically given on one system, minus some of the performance indications), the metric and grouping analysis, and the tree diagram. The longer the piece or excerpt is, the taller the tree diagram will likely be. A continuous analysis of an extended work might be as large as the side of a building. Of course a computer could be used to help navigate a large document, but if the full size of the document is so big, then viewing most levels beyond the surface would require zooming out to such an extent that the diagram would be illegibly tiny.

Of the seven complete analyses Lerdahl offers in *Tonal Pitch Space*, one is of a Bach chorale, two are of pieces by Schoenberg and Webern, each of which are just nine measures long, three are of Chopin and Scriabin preludes eleven to thirty-five measures in length, and one is of Schoenberg's *Three Piano Pieces* op. 11, no. 1, which is still only a sixty-four measure work. In Lerdahl's analysis of op. 11, no. 1, a two-page spread is used to analyze the first eleven measures of the piece.[278] Another page is devoted only to the melody of the first four measures, with separate diagrams showing what Lerdahl refers to as "functional analysis," "computations

[278] See pages 353 to 368 of *Tonal Pitch Space* for Lerdahl's analysis of Schoenberg's op. 11, no. 1.

for the melodic attractions," "computations for the metrical attractions," and "combined melodic/metrical tensional analysis." After discussing two other figures, Lerdahl presents the rest of the surface-level analysis through five diagrams spread over four pages, in which the higher-level branches are truncated. However, in these diagrams, Lerdahl omits the time-span analysis and the "derivation of the prolongational connections from it," presumably because of the space that would be required to do so (even though the work is only sixty-four measures long). Similarly, a final page offers two deep-level diagrams, given with only the prolongational tree diagram and its "secondary notation," which consists of the stem-and-slur notation of Schenkerian analysis with some modifications.[279]

This is a rather ironic set of circumstances. On a superficial level, one might look at these large-scale diagrams and note that they resemble Salzerian graphs, although the stems and slurs of course mean slightly different things. Since (to my knowledge) this is the first time in his writings that Lerdahl examines a complete piece long enough that the analysis does not fit on one page, he seems to be at pains to avoid using terms such as "foreground" or "middleground," and his solution does not really work. His caption for the two diagrams on the final page of his analysis reads as follows: "Global prolongational analysis . . . a) at the level of the exposition, development, and recapitulation; b) the entire piece." The problem is, both diagrams show the entire piece and both label the exposition, development, and recapitulation.[280]

More significant is the omission of the time-span analyses. One might examine the prolongational reduction and wonder why a certain aspect of it is given as such. One might even

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[279] For more on secondary notation, see Lerdahl and Jackendoff, *GTTM*, 201-03. In *Tonal Pitch Space*, Lerdahl uses stems and flags as well as noteheads, and in the analysis discussed here he includes more than just the outer voices, due to the harmonic complexity.

[280] In keeping with tradition, I myself have avoided using the terms "foreground," "middleground," and "background." However, I am not convinced that these very helpful words must be confined indefinitely to the discussion of music where Schenkerian prolongation exists.

disagree with a reductional decision, but be unable to find the reason for it in Lerdahl's work, since the long-form of his process is not provided. Yet this is exactly the sort of criticism that is often leveled against Schenkerian or Salzerian analysis—that the reasons for reductive decisions are not provided.

In fact, the omitted time-span analysis entails precisely the sort of rhythmic work that ostensibly distinguished Lerdahl's work (with Jackendoff) from Schenkerian analysis in the first place. The reader will recall from Chapter 1 that Lerdahl and Jackendoff referred to the "tacit" rhythmic analysis of Schenkerians, and asserted that their work would unify pitch and rhythm "in one overarching theory."[281] Of course, the time-span analysis still takes place as part of the process of arriving at the prolongational reduction in Lerdahl's work, but if this analysis is not shown, then it too is merely tacit.

That Lerdahl omits the time-span analysis for practical reasons (although he does not directly say this) is more telling than it is justificatory. Schenkerians also have the tools to produce rhythmic analyses (as reviewed in Chapter 1), but generally choose not to present such analyses in their published work. In addition, they discuss only select analytical decisions in prose, and often do not provide foreground-level graphs. These choices enable Schenker and Salzer to produce volumes with hundreds of analyses, including many of complete and lengthy works.[282]

Lerdahl could, of course, produce the omitted work upon demand, but so may a Schenkerian or Salzerian analyst provide explanation for their decisions if requested. In both

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[281] See chapter 1 at note 63.

[282] *Structural Hearing* contains a staggering 549 examples (including the ten given in roman numerals at the beginning of volume 2); similarly, *FC* contains 158 figures, most of which contain analyses of several different works.

cases, a long process lies behind the final product. The chief difference is simply that Lerdahl's process is formalized.

Moreover, it is often objected that the decisions of those working in the intuitionist tradition—with or without explanation—are arbitrary, and this is another one of the motivations for the formalist enterprise. Yet, since salience conditions play a primary role in determining the time-span structure in this repertoire, and since these salience conditions are unquantifiable, and thus intuitively and subjectively assessed, then Lerdahl's results could also be construed as being arbitrary. This also means that even if one seeks to understand his prolongational reduction of op. 11, no. 1 by performing the time-span reduction, one would still have to work backwards from the prolongational reduction, in order to get the time-span reduction to work out correspondingly.

None of this is to say, however, that Lerdahl should have done anything differently. Lerdahl explores a wide range of repertoire, and closely "follows the music" in doing so, as Salzer urged. The conclusion he reaches, cited above, is simply the logical consequence of studying this repertoire in formalist fashion. Furthermore, as discussed in Chapter 1, the system of *GTTM* was not constructed to be an analytical practice competing directly with the Schenkerian approach, and the same is true of *Tonal Pitch Space*.[283]

In fact, this is precisely the point. My chief aim here is to highlight the importance of the intuitionist interpretive practice that *Tonal Pitch Space* is partly intended to inform. Lerdahl's op. 11, no. 1 analysis is successful, but also delineates what is more or less the practical limit of such analysis, particularly in terms of its public presentation. While his work clarifies our understanding of post-Schenkerian repertoire, it is essential that we make full use of the insights

[283] See also Brown, "Rothstein's Paradox," 125.

it provides by sustaining a vital analytical practice that engages comprehensively with this repertoire.

The onus of objectivity weighs heavily upon much of our work and discourse today. Lerdahl is bold to acknowledge the subjectivity inherent in the analysis of late-nineteenth and early-twentieth century music.[284] (One reason he is able to do this is because his approach itself is so rigorous and formal, i.e., "objective," and because of his stature. Analysts working in the Salzerian tradition might risk being written off entirely if they were to make a statement about their work such as Lerdahl's, above.) This acknowledgment is significant. If, a quarter of a century after "Toward a Formal Theory of Music," a theorist of Lerdahl's prowess and rigor is unable—indeed unwilling even to attempt—to quantify some of the most important aspects of this music, then we ought to take notice of this fact and consider adjusting our priorities accordingly.

Specifically, we should renew our efforts in the area of non-formalist analysis of this repertoire, despite its inherent difficulties. In doing so, it will be important to bear in mind that while the problem of analysis of this repertoire stems from the music itself, the music is not the problem itself. Nor does the problem necessarily always lie with our analyses of this music (although some analyses are certainly more successful than others). Sometimes the issue concerns our own notions of what constitutes significant work in music theory. This is natural enough, for what we do as theorists frequently involves generalizing about aspects of music as much as possible, in order to produce knowledge of a higher order. But if transitional repertoire often impedes our freedom of motion along the general-particular axis, then perhaps we should recall Rothstein's answer to Babbitt, in his "Americanization" article: "If you don't want to call

[284] As previously discussed, in *GTTM*, Lerdahl and Jackendoff also acknowledge a certain amount of subjectivity in the analysis of the Schenkerian repertoire.

what Schenkerians do 'theory,' then call it something else."[285]

It may seem ironic to cite this remark, since it is easier (though often still problematic) to generalize about the Schenkerian repertoire than the post-Schenkerian repertoire, and since Rothstein might not be willing to call what Salzerians do "Schenkerian analysis"; yet, by the same token, it is also all the more appropriate to mention his comment here. Babbitt had helped to secure the place of music theory within the academy, and Rothstein's point was that we no longer needed to try "to appear more scientific than we really" were.[286] Rothstein, in turn, helped to secure the place of Schenkerian analysis—in its original, undiluted, and humanistic form—in music theory, and my point is that we no longer need to confine ourselves to safe repertoire for the sake of proving the explanatory power of Schenker's approach.

Rothstein also memorably wrote that "Salzer and the revisionists allied to him may have won the rhetorical battles back in the fifties; but the pendulum was eventually to swing the other way, and the ostensibly 'narrow-minded' disciples such as Jonas and Oster were to gain parity and finally ascendancy within the fractious community of Schenkerians."[287] Twenty-seven years passed between the publication of *Structural Hearing* in 1952 and the publication of *FC* in 1979, and twenty-seven years have now passed since Rothstein made this comment in 1986. During this time, the music theory community has continued to value strict Schenkerian theory, but has also moved towards greater eclecticism. The pendulum is swinging back the other direction, and

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[285] Rothstein, "Americanization," 202.
[286] Ibid., 201. As Rothstein previously notes, Babbitt (and Forte) had also brought "Schenker firmly into the Ivy League." Ibid., 199. For more on Babbitt and Forte's "Americanization" of Schenker, and the role that this played played in its institutional acceptance, see Snarrenberg's monograph, *Schenker's Interpretive Practice*, xvii-xviii; Snarrenberg, "Competing Myths," 49-52; McDonald, "De-composition?," 240; David Carson Berry's "Journal of Music Theory under Allen Forte's Editorship, 9-11; Berry, "Hans Weisse and the Dawn of American Schenkerism," 150-51; and Berry, "Schenkerian Theory in the United States: A Review of Its Establishment and a Survey of Current Research Topics."
[287] Rothstein, "Americanization," 12.

in order to keep up, we must continually revise our concept of music theory and the field in general.

CHAPTER 3

SALIENCE AND JAZZ ANALYSIS

Schenkerian versus Salzerian Analysis of Jazz

Bebop is sometimes referred to as the *lingua franca* of jazz, or as the common-practice period of jazz.[288] It is generally accepted by jazz musicians, educators, and scholars that "modern jazz" begins with bebop. Most of the various jazz styles to follow use bebop as their fundamental language, and aspiring jazz musicians are expected to gain fluency in it.[289] It thus is natural that the work of the late Steve Larson—the scholar most associated with the Schenkerian analysis of jazz—centers on modern jazz, as opposed to what he refers to as "post-modern jazz."[290]

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[288] For example, see Thomas Owens's *Bebop: The Music and Its Players*, 3-4; David Baker's *How to Play Bebop, Volume 1: The Bebop Scales and Other Scales in Common Use*, Preface (pages unnumbered); Scott DeVeaux and Gary Giddins' *Jazz*, 607; and Richard Hermann's "Charlie Parker's Solo to 'Ornithology': Facets of Counterpoint, Analysis, and Pedagogy," 222 (Hermann quotes Owens). In "Parallel Developments: Coltrane and Late-Romantic Music," a paper given at the 2008 West Coast Conference on Music Theory and Analysis, I examine relationships between the development of the jazz and classical traditions using neo-Riemannian theory.

[289] Of course, bebop was both a revolution and an evolution, and there were key musicians in the swing era that laid the groundwork for bebop.

[290] Larson, "Schenkerian Analysis of Modern Jazz: Questions about Method," 218. (Other scholars involved with the Schenkerian analysis of jazz will be cited throughout this chapter.) Larson's hyphenation and the context would seem to indicate that by "post-modern jazz" he refers more to what is "post-bebop" than to what might be thought of as "postmodern" per se, such as "free jazz." Other writers refer to "contemporary jazz" (see David Baker's *Modern Concepts in Jazz Improvisation: A New Approach to Fourths, Pentatonics, and Bitonals*), or simply reference the time period beginning around 1960 (see Keith Waters and Kent Williams's "Modeling Diatonic, Acoustic, Hexatonic, and Octatonic Harmonies and Progressions in Two-

Generally speaking, Larson treats the performances he analyzes as theme-and-variations forms. The themes involved are standards (or "jazz standards"), and are amenable to the Schenkerian approach.[291] Each chorus of improvisation is essentially analyzed as a variation upon the theme, or on the "underlying voice-leading strands of the theme," and thus a traditional Schenkerian analysis of the improvisation works relatively well.[292]

One limitation of this approach is the fact that the improvisations of modern jazz are often markedly unrelated to the original theme, in contrast with the practices of some prior and/or more commercialized idioms. Bebop musicians tended to view the original composition as a harmonic "vehicle" for improvisation, a word that reputedly was first used by Dizzy Gillespie in this context.[293] Furthermore, the melodies of popular songs (references to which would be easily perceived) were often replaced with rapid and improvisatory bop melodies, creating what are known as contrafacts, which allowed the musicians to avoid copyright issues yet still improvise over harmonic progressions that they knew well. The musicians Larson

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and Three-Dimensional Pitch Spaces; or Jazz Harmony after 1960," and Jack Chambers's *Milestones 2: The Music and Times of Miles Davis Since 1960*; in the former, the text was written by Waters, and Williams created the examples).

[291] For more on Schenkerian analysis of standards, see Forte's *The American Popular Ballad of the Golden Era: 1924-1950*. Also see Larson's review of Forte's work (as well as Gilbert's *The Music of Gershwin* and Henry Martin's *Charlie Parker and Thematic Improvisation*) in *Music Theory Spectrum*.

[292] Larson, "Swing and Motive in Three Performances by Oscar Peterson," 286. When dealing with multi-chorus solos, Larson illustrates ways in which performers delay or avoid tonal closure at the end of individual choruses, waiting until the conclusion of the improvisation to provide clear resolution. See, for example, Larson, *Analyzing Jazz: A Schenkerian Approach*, 66. Martin is less inclined to perform voice-leading analyses of multi-chorus improvisations. When he discusses such solos in *Charlie Parker and Thematic Improvisation*, he argues that the background should usually correspond to only one chorus of a solo (in contrast to Larson), but also allows for some exceptions to this guideline; see pages 30-32. Also see Martin, "More Than Just Guide Tones: Steve Larson's *Analyzing Jazz—A Schenkerian Approach*," 130-31; idem, "Schenker and the Tonal Jazz Repertory," 18; and Hermann, "Charlie Parker's Solo," 230-32.

[293] See Jerry Coker's *How to Listen to Jazz*, 9.

examines are somewhat unusual in the degree and directness with which they engage the original theme in their improvisations.[294]

Nevertheless, Larson's work is a powerful testament to the large-scale organization and unity that can be achieved through thematic reference. Moreover, thematic reference is very much a matter of degree. It might even be said that the extent to which thematic reference is present is the extent to which an improvisation will be amenable to a Larsonian strict Schenkerian analytical treatment of it as a theme-and-variations form.[295]

The issue of whether or not to use a strict Schenkerian approach in analyzing jazz is highly significant, and debate over this matter has recently been renewed with the sudden passing of both Larson and Strunk, as well as with the re-publication of Larson's 1987 dissertation, with minor revisions, as *Analyzing Jazz: A Schenkerian Approach*.[296] This question is fraught with political import: if Schenkerian analysis is used by some as an aesthetic litmus test for greatness, jazz scholars have a clear interest in demonstrating that jazz performances are capable of exhibiting the same sort of organic coherence that Schenker revered in European

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[294] Larson's "The Art of Charlie Parker's Rhetoric" is an exception to this. Martin's "thematic improvisation" does not refer to the practice of directly referencing the original theme.

[295] In one of his last publications, Larson acknowledges that unity does not stem only from thematic reference: "But I will grant that such global logic does not seem to require reference to the original melody or guarantee the sophisticated structures (e.g., hidden repetitions) admired in the common-practice works that theorists typically analyze." It might be observed that the repeating harmonic progression is enough to produce a very basic sort of unity, to say nothing of motivic coherence, whether the motives are derived from the theme (which they often are), or not. Larson, "Composition versus Improvisation?," 259.

[296] See *Music Theory Online*, volume 18, number 3 (September 2012), which is a festschrift for Larson, based upon a memorial conference held in the spring of 2012 at the University of Oregon. The 2013 conference of the Music Theory Society of the Mid-Atlantic featured a special session in memory of Steven Strunk. Larson's dissertation is entitled "Schenkerian Analysis of Modern Jazz." Short-title references in this chapter to "Schenkerian Analysis" cite his article, not the dissertation.

concert music. Larson has in fact demonstrated this, and in so doing has implicitly defined what might be referred to as the Schenkerian jazz repertoire.[297]

However, as in classical music, problems arise if one attempts to apply a strict Schenkerian approach to music that falls outside of certain boundaries, in this case, those delimited by Larson's work; these boundaries may be clearly defined in theory, but in practice there will be a multitude of gray areas; and the repertoire amenable to a strict Schenkerian approach only represents a small portion of jazz. This means that a less strict—i.e. "Salzerian"—approach to much jazz is necessary if one wants to examine it from a "structural" perspective. If the Salzerian tradition were held in higher esteem, as I have argued it should be, then jazz analysts would perhaps feel less as if they needed to force the music into a strict Schenkerian model in order to demonstrate the value of jazz and jazz theory.[298]

In previous chapters, I have promoted the value of intuitionist analysis of both the Schenkerian and post-Schenkerian classical repertoire through methodological and critical discussion. In this chapter, I will directly demonstrate the value of the Salzerian approach generally as well its usefulness in the analysis of jazz. This will be accomplished chiefly through an analysis of a complete performance of "Green Chimneys" by the Thelonious Monk Quartet,

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[297] Whereas "repertoire" typically refers to compositions, here it designates not just (or perhaps not at all) jazz compositions themselves, but rather to recorded performances of them. A standard tune in jazz—even if it may be successfully analyzed with a strict Schenkerian approach—may be performed in a limitless number of ways; some avant-garde artists choose to perform standards in a manner that at first appears to have little or no relationship to the original composition.

[298] In his recent article, "Schenker and the Tonal Jazz Repertory" (2011), Martin addresses the issue of "problematic compositions" in tonal jazz, proposing a number of additional *Ursatz* prototypes (his work is in some respects reminiscent of Smith's). He suggests that these models may be applied systematically to later jazz repertoire as well. In addition, Martin discusses degrees of thematic reference in improvisation, noting that "in freer playing, one might have to begin with a deeper structural level of the original song to derive the solo" (his earlier work on Parker also deals with this issue). Ibid., 11.

in which I reveal the same sort of sophisticated large-scale organization that Schenker, Salzer, and Larson have found in the repertoires with which they are most associated, despite the post-Schenkerian nature of this particular jazz composition and performance.[299]

Before presenting actual analyses, it will be instructive to consider some of the ways in which post-Schenkerian jazz practices may differ from those of common-practice jazz. This list (given below in Table 3.1), is by no means comprehensive, but is intended to illustrate the need for jazz analysis in the Salzerian tradition.

[299] Larson analyzes performances of Monk from a strict Schenkerian perspective. However, as Larson notes, some performers play both modern jazz and post-modern jazz. See Larson, "Schenkerian Analysis," 218.

1	Increased use of non-functional chord progressions in the compositions themselves, oftentimes stemming from a more modal conception (chord changes may result from a change of bass within one referential collection).[300]
2	Increased freedom with respect to the improvised lines played over the original chord changes (more "outside" playing—playing notes outside of the scales that naturally correspond to the chords).
3	Increased freedom with respect to the original chords themselves, on the part of the ensemble as a whole.[301]
4	A decrease in thematic paraphrase and/or reference.[302]
5	Increased tendency towards longer improvisations (partly deriving from the increased prevalence of the long-playing record).
6	Increased tendency for improvisations with a long structural arc as opposed to more even improvisations structured on a chorus-by-chorus basis.
7	Increased tendency for metric dissonance, up to the hypermetric level of complete choruses themselves.[303]
8	Increased emphasis upon chordal extensions (tension tones).
9	Increased use of chords with chromatic alterations.
10	In connection with points 8 and 9, decreased organization around conventional guide-tone lines.
11	In connection with point 8, decreased emphasis (by any performers, including bassists) upon more basic chord tones, often resulting in extended passages where roots are merely implied, or passages where roots may be found but are neither salient nor in the lower register.

Table 3.1. Some differences between post-Schenkerian jazz practices and those of common-practice jazz.

[300] For an introduction to this subject, see Keith Waters's "Modes, Scales, Functional Harmony, and Nonfunctional Harmony in the Compositions of Herbie Hancock."
[301] An extreme example of this would be the practice known as "time, no changes," sometimes used by Miles Davis's quintet of the mid-1960s. See Waters's *The Studio Recordings of the Miles Davis Quintet, 1965-1968*, and Todd Coolman's dissertation, "Miles Davis' Quintet of the mid-1960s: Synthesis of Improvisational and Compositional Elements."
[302] For more on the way that thematic reference may be used in post-bop, see David Morgan's "Superimposition in the Improvisations of Herbie Hancock."
[303] For an introduction to metrical issues in jazz, see Waters's "Blurring the Barline: Metric Displacement in the Piano Solos of Herbie Hancock," and Larson's "Rhyhmic Displacement in the Music of Bill Evans."

Points 8, 9, and 11 will now be further explored, as they are particularly relevant to the issue of salience versus stability. One of the fundamental premises of Larson's work concerns the issue of pitch stability vis-à-vis the presence of ninths, elevenths, and thirteenths.[304] In "Schenkerian Analysis of Modern Jazz: Questions about Method," Larson writes: "So-called ninths, elevenths, and thirteenths occur in both repertories [classical and jazz]. And in either case, the functions of upper chord tones—including the seventh—are best explained in terms of their melodic relationships with more stable notes at more basic structural levels."[305] (As evidence that Schenkerians use the same reasoning within the context of classical repertoire, Larson cites Aldwell and Schachter's analysis of a Ravel passage as well as analyses of a late Brahms work by Cadwallader, Salzer, and by Forte and Gilbert.)

Larson illustrates this principle with several examples based upon Strunk's work. One shows how tension tones are often heard in terms of their resolutions, sometimes creating chains of suspensions (with the harmony changing at each point of resolution); another demonstrates how a tension tone in one chord may be a stable tone in the local key, and thus may become a stable chord tone if sustained into a cadence or structurally superior harmony. Larson also acknowledges that sometimes tension tones are more coloristic in function, and lists this as being among several features of modern jazz that are anomalous in terms of Schenkerian analytical explanations.[306] However, such features, which become more and more prevalent as one moves

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[304] Larson's approach to these tension tones relies heavily upon work of the also late Steven Strunk; see "Bebop Melodic Lines: Tonal Characteristics," "The Harmony of Early Bop: A Layered Approach," and "Linear Intervallic Patterns in Jazz Repertory."
[305] Larson, "Schenkerian Analysis," 213; a different wording of this argument appears on page 214. Larson's approach to these tension tones relies heavily upon work by the also late Steven Strunk; see "Bebop Melodic Lines: Tonal Characteristics," "The Harmony of Early Bop: A Layered Approach," and "Linear Intervallic Patterns in Jazz Repertory."
[306] Larson, "Schenkerian Analysis," 217.

away from the common-practice period in jazz, may often be explained from a Salzerian perspective, and that is what I will demonstrate in the examples and analyses that follow.

Figure 3.1 gives the second half of the first chorus of a 1963 Bill Evans improvisation on Victor Young's "Stella by Starlight."[307] For much of the first chorus, Evans plays relatively traditional bop lines over the chord changes, while referencing the melody of "Stella" clearly and with some frequency. It is apparent that Evans has deeply internalized this theme. (Listeners must also be thoroughly acquainted with the theme if they are to fully perceive Evans's artful referencing of it.)

[307] This performance was originally released on *Bill Evans Trio: At Shelly's Manne-Hole, Hollywood, California*. "Stella by Starlight" is a thirty-two measure composition in B♭ major, with normative phraseology. For more on "Stella" see the ninth volume of the *Annual Review of Jazz Studies*. The first half of this double-issue consists of the (revised) proceedings of an analysis symposium centered upon "Stella" (and a response by Forte). Larson investigates Evans's three-track recording of the tune on *Conversations with Myself* in one contribution (Larson also discusses this performance in "Composition versus Improvisation?").

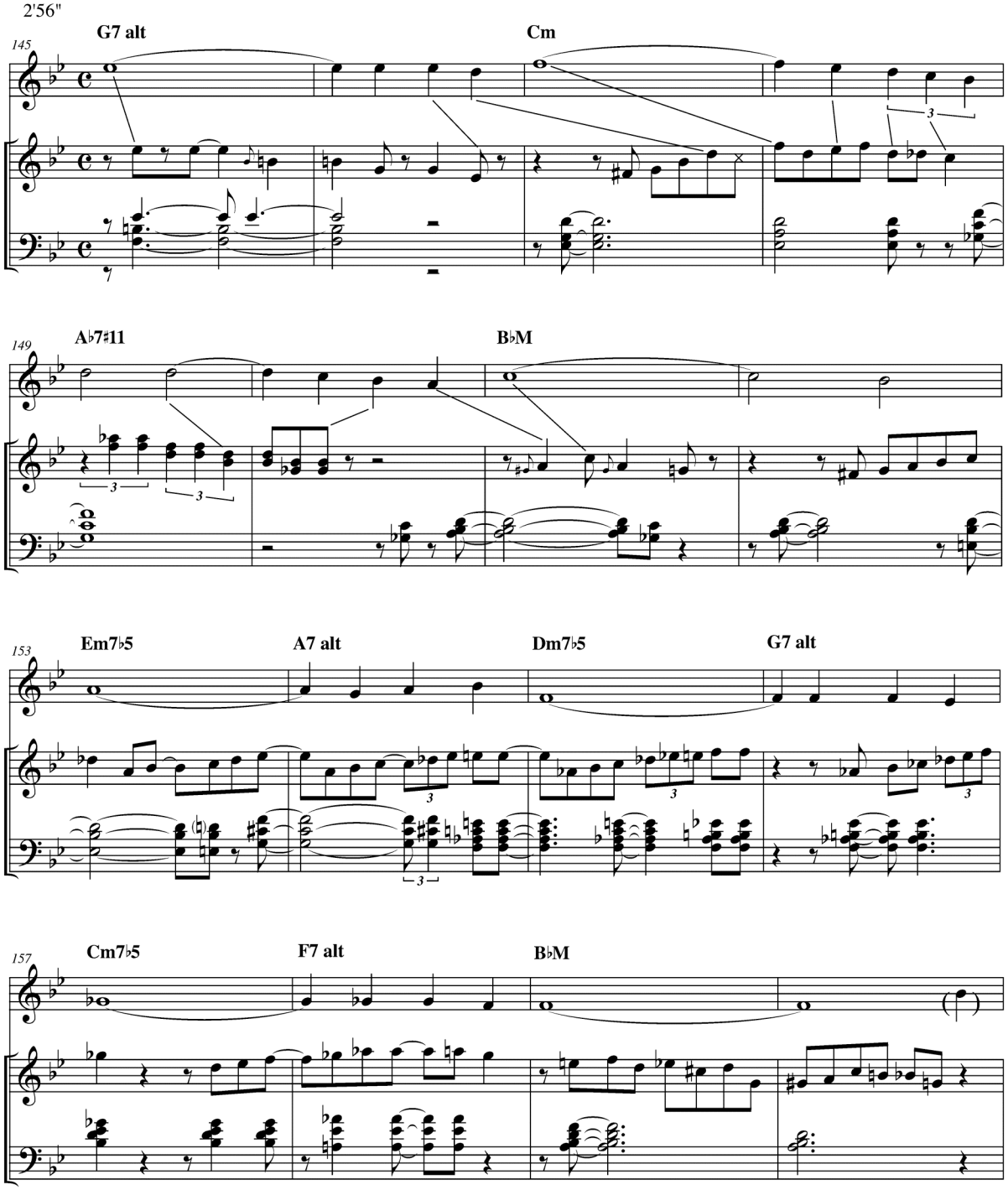

Figure 3.1. A transcription of mm. 145-60 of Bill Evans's improvisation on "Stella by Starlight." The top stave provides the original melody of "Stella." In mm. 145-51, diagonal lines connect Evans's improvisation with tones of the original melody. Thematic reference in mm. 152-60 is addressed separately, in Figure 3.2.[308]

[308] This version of the melody is taken from *The Real Book*. For a complete transcription of this performance, including bass and drum parts, see *The Bill Evans Trio: Volume 2, 1962-1965*, 105-

During measures 17-24 of "Stella" (145-52 in Figure 3.1), the melody itself features much use of dissonance, but is still fully compatible with the Larson/Strunk model. The salient melodic tones of these measures are chordal extensions and/or alterations. These tension tones are sustained for several beats, but they eventually resolve downwards by step to either the root, third, or fifth of the chord.

Evans's thematic referencing is particularly evident during these measures, as indicated by the diagonal lines. An exception seems to occur in measures 149-50, where the melody note D occurs in the middle of an arpeggio. Nevertheless, Evans emphasizes the second D by placing it on a downbeat, accenting it, and changing the rhythm of the gesture. The C of measure 151, although not emphasized much in terms of volume, articulation, or metric placement, is the highest pitch played during the B♭ chord; in any case, the A which precedes the C is also a tone from the original melody. More significant, however, is the way in which the C is connected to the measures that follow.

During measures 152-58, Evans plays several ascending foreground lines, generally emphasizing the final, uppermost note of each line with both articulation and a new chord in the left hand (most of the chord changes in these measures are anticipated by one beat or half of a beat). These endpoints themselves form an ascending middleground structure, expressed in Figure 3.2 as a rhythmic reduction.[309]

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22. Figure 3.1 is based upon this transcription, to which some minor corrections have been made.

[309] In measure 158, duration, metric placement, articulation, and resolution weaken the structural significance of the stable tone A♮ in Evans's melodic line, which is the leading tone. Rather, the A♮ is a neighbor—an échappée in this case—to A♭ (the raised ninth), which is a neighbor to G♭ (the flatted ninth), and thus does not appear in Figure 3.2. This contrapuntal motion from the raised ninth to the flatted ninth, and finally down to the fifth of the tonic chord, is strongly directional, and is a staple of modern jazz. (Strunk and Larson deal with the raised-ninth/flatted-ninth resolution as a special case. For more, see Strunk, "Bebop Melodic Lines," 30; and

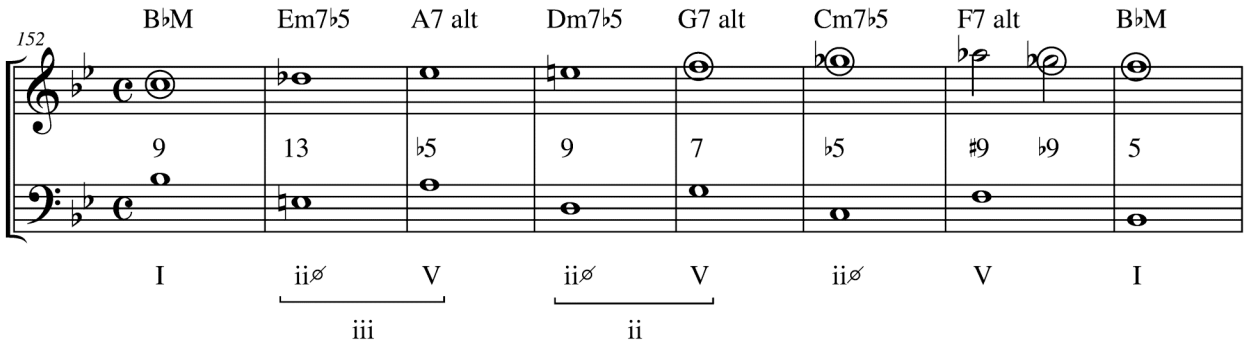

Figure 3.2. An ascending middleground line in mm. 152-59 of Evans's performance of "Stella by Starlight." Tones from the original theme are circled.

The relationship of this ascending middleground line to the original theme, the notes of which have been circled in Figure 3.2, is striking. Evans uses the melody note C from measure 151 as a starting point (the C shown in measure 152 is carried over from the previous measure).[310] He then departs from the original melody until the rising line naturally reconnects with it in measure 156. In measure 158, he pushes the sequence still higher, and beyond the G♭ of the theme, only to then reverse course just in time to resolve the G♭ down to F, in accordance with the original melody.[311]

Larson, "Schenkerian Analysis," 215-16.) A similar situation may be found in a more simple context, when $\hat{5}$ occurs as an échappée in a melody line $\hat{4}$-$\hat{5}$-$\hat{3}$ over V-I, although this is something of a special case as well.

[310] The B♭ occurring on beat 4 of measure 152 may be heard as thematic reference, but the connection between the C from measure 151 and the D♭ of measure 153 is stronger. Some other thematic tones in measures 152-60, while present in Evans's right hand line, are similarly overshadowed by the middleground line given in Figure 3.2. That is why diagonal lines are not provided during these measures in Figure 3.1.

[311] Curiously, after arriving at the final thematic tone F, Evans closes off the pitch space of this first chorus with a descent to $\hat{1}$. Lower neighbors embellish the on-beat $\hat{5}$-$\hat{4}$-$\hat{3}$ in measure 159, with a brief move to a lower voice before the on-beat $\hat{2}$-$\hat{1}$ in measure 160. As shown in Figure 6.1, B♭ is, in fact, also the pickup melody tone for the next chorus, with A succeeding it on the downbeat of the first measure of the form. Evans does begin his next phrase with this A, although it is up an octave; the B♭ seems to relate more to what precedes it rather than what follows it.

Because of the way in which Evans frames this sequential passage in terms of thematic reference, these measures offer a powerful illustration of why the Strunk/Larson model works, and of the remarkable control that Evans had over his ideas. At the same time, this passage demonstrates how salience can override stability, in this case prefiguring later developments in Evans's style (more below). For although these measures taken as a whole fit into Strunk and Larson's model, the middleground line itself is at odds with their explanation of dissonances.

While the line itself ascends, the harmony descends through the circle of fifths. Figure 3.3 shows a diagram, also featuring descending-fifths harmonic motion, that Larson uses to demonstrate how ninths and thirteenths may be viewed linearly as chains of suspensions, and thus as displacements of lower chord tones. (As regards an eleventh (unaltered) in a descending-fifths progression, if sustained into the next harmony it becomes the root, thus losing its "'need' to resolve.")[312] Larson explains:

> Viewing the model's levels starting with level a and progressing to e, it may be seen as a means of generating ninths and thirteenths through the delay of pitches of a 5-8 linear intervallic pattern. Viewed from level e back through a, it may be seen as a means of analytically reducing such ninths and thirteenths to more stable intervals at deeper structural levels.[313]

[312] See Strunk, "Bebop Melodic Lines," 112; and Larson, "Schenkerian Analysis," 217.
[313] Larson, "Schenkerian Analysis," 216-17.

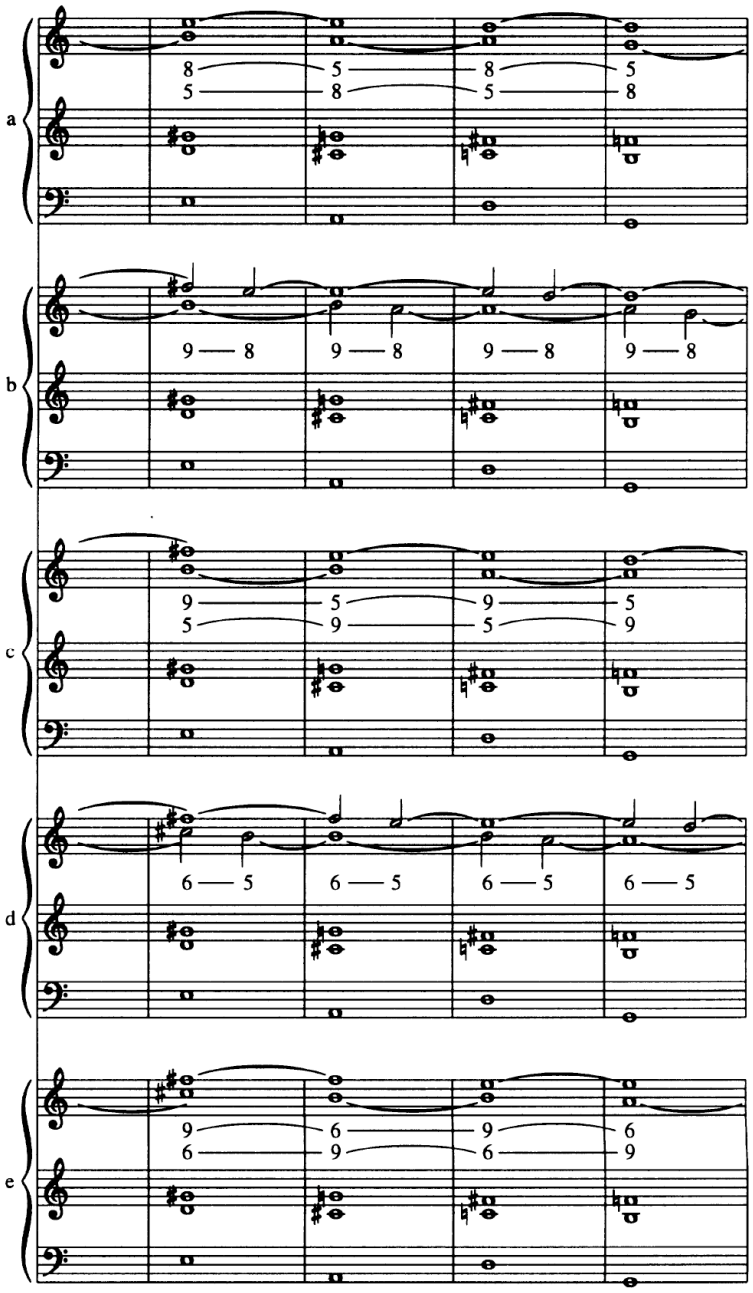

Figure 3.3. A generative/reductive diagram used by Larson. From Larson, "Schenkerian Analysis of Modern Jazz: Questions about Method," 216.

The similarity between the harmonic progression in Larson's diagram and these measures of "Stella" suggests a way to consider the Strunk/Larson model in the context of this excerpt. Taking level e (and c) from Larson's diagram as a starting point, Figure 3.4 displays chord tones

and resolutions—potential voice-leading strands—in measures 24-31. (Measures 25-28 may be compared directly to Larson's diagram, as the chord roots are identical.) For the sake of visual organization, the chord tones in every odd-numbered measure (the first measure of each ii-V progression) have been arranged as stacks of thirds, with the lower chord tones on the middle staff and the upper chord tones (extensions) on the upper staff.

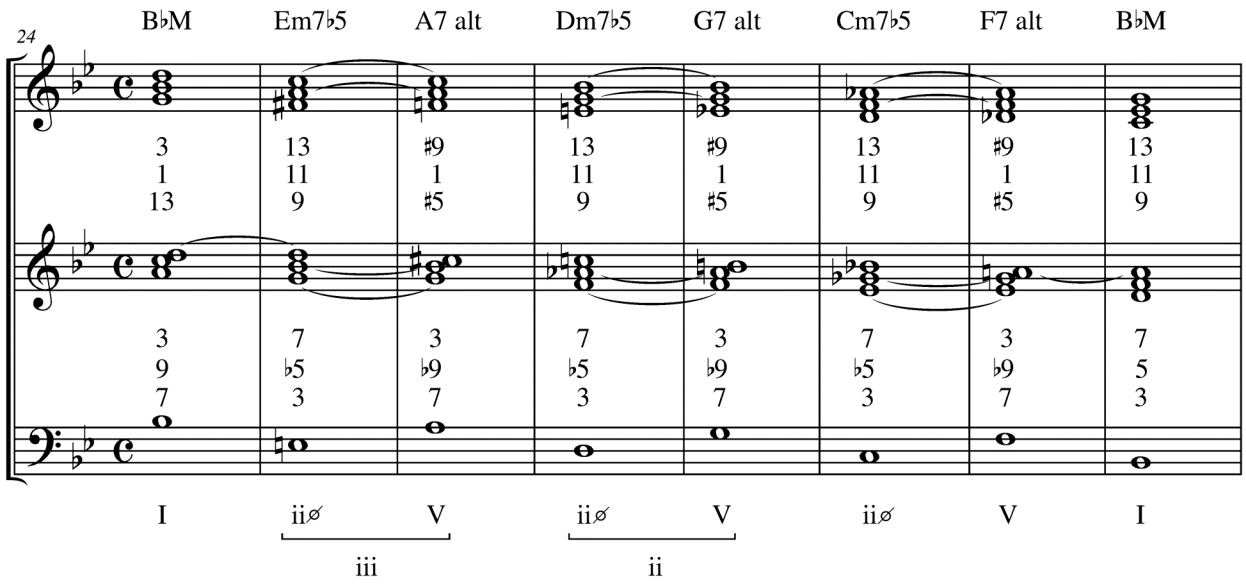

Figure 3.4. Chord tones and resolutions in mm. 24-31 of Young's "Stella by Starlight."[314]

[314] The numbers appearing in measure 24, particularly the 3 and the 13, may at first seem to be anomalous in terms of the pattern used for the rest of the example. However, this apparent aberration disappears if one remembers that the raised ninths appearing in the diagram are enharmonically equivalent to flatted thirds, and that the raised fifths are enharmonically equivalent to flatted thirteenths.
Where there is a choice, the specific chord/scale tones given in this diagram attempt to reflect what Evans actually plays. For example, although the flatted ninth is also often played on a half-diminished ii chord, the natural ninth is given as that is what Evans plays in these measures. In measure 31, Evans plays both the natural eleventh and the raised eleventh on the B♭ major chord, but the E♮ is a chromatic lower neighbor (see footnote above). In two cases, the diagram does not reflect what Evans plays. The major thirteenth (D♭) he plays over the half-diminished chord in measure 25 is not given, as the minor thirteenth is usually played; Evans actually plays both, but strongly emphasizes the D♭. The salient flatted fifth (E♭) of measure 26 is not given; fifths—flatted-fifths on dominant chords—have been omitted from even-numbered measures for the sake of simplicity. (Odd-numbered measures of this strand would contain root doublings.)

This diagram differs from Larson's in that he numbers tones above the bass according to the conventions of figured bass and/or linear intervallic patterns. In this and other examples, he mostly uses the numerals 5 through 10, emphasizing the linear derivation of the upper chord tones. Since Larson has already made this demonstration, I have chosen to use standard jazz designations for chord tones.

Other adaptations have been made as well, due to the different chord qualities present in this excerpt. For example, the strand that alternates ninths with raised fifths (the bottom of the top stave) is essentially a combination of, or the halfway point between, Larson's level c and level e. The ninths do not fall to fifths and then become ninths again, as in level c; nor do they become thirteenths and then fall to ninths again, as in level e. Rather, the ninths fall by chromatic step to become raised fifths and then fall by chromatic step to become ninths again. (This is because neither the natural thirteenth nor the natural fifth occurs in the seventh mode of melodic minor that Evans plays on the dominant chords in these measures.)[315]

Of course, this arrangement of tones is not intended to illustrate actual chord voicings, but rather to conceptualize some of the possible voice-leading strands suggested by these chord changes. (Other resolutions are possible; for example, the flatted fifths of the half-diminished chords could resolve to the roots of the dominant chords, forming a descending chromatic line.) These strands may then serve as guide-tone lines (middleground structures) around which melodic lines may be organized, or they may be combined to form successions of chord

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[315] The question of how the lack of a perfect fifth might affect the Strunk/Larson model is a separate issue, and one that applies to the half-diminished chord-types in use here as well. For an introduction to melodic-minor harmony, see Mark Levine's *The Jazz Theory Book*, 55-77. For recent scholarship on the subject, see Dmitri Tymoczko, *A Geometry of Music: Harmony and Counterpoint in the Extended Common Practice*; Waters, "Diatonic, Acoustic, Hexatonic"; and Waters, "Modes, Scales."

voicings. Indeed, one can see that the notes of Evans's left hand in measures 154-56 consist of an aggregate of three to four voice-leading strands from Figure 3.4.

Evans's right-hand melodic line, however, follows a different path through the chord changes, one unrelated to these voice-leading strands. Any of the tones of the middleground line shown in Figure 3.2 may be resolved down by step to a root, third, or fifth in the next chord.[316] Thus, at any point in measures 152-59, he could have changed the direction of the line and connected with the matrix of voice-leading pathways presented in Figure 3.4. Instead, he increases the tension by continually pushing the line higher, waiting to descend until reconnecting with the melody and until the melody itself then descends.[317]

As has been discussed throughout this study, the Schenkerian approach often requires one to hear salient events in terms of the underlying pitch stability. In later repertoire, our perception of what is stable increasingly has to compete with our perception of what is salient. Ultimately, the surface becomes less "illusory," at least in this sense. In this excerpt, we hear the tension tones of Evans's ascending middleground line in terms of the voice-leading strands of Figure 3.4, yet we also hear the rising line itself, which, strictly speaking, works against the implied resolutions of each of these tones (as well as the descending nature of the harmonic motion overall).

The proportion in which salience and stability are perceived in this excerpt, relative to one another, depends in part upon the level of experience the listener possesses, especially in the

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[316] The major thirteenth of measure 153 (D♭), essentially anticipates the resolution of the seventh, D, down to C♯ in the next measure. The D♭ thus would not resolve down by step, but rather would "resolve" by common-tone. Note also that the raised-ninth of measure 158 (A♭) must pass through the flatted ninth, as indeed it does, in order to resolve down by step (which is why, as noted above, Strunk and Larson deal with it as a special case, as cited above).

[317] This situation is somewhat similar to those encompassed by Schenker's reaching-over. Here, however, the tones of the ascending line are not stable chord tones, and the potential inner voice tones are often not found in Evans's foreground lines.

jazz idiom, as well as the extent of their familiarity with "Stella" and with this specific performance of it. However, it would seem that salience outweighs stability at the level of the ascending line itself, as the line is so forceful and all of its constituent tones are extensions and/or dissonant. By contrast, stability overrides salience at a deeper structural level, as we hear the ascending line within the context of thematic reference and cadential closure.

The main purpose of this example has been to demonstrate the way that issues of salience and stability play out in the jazz idiom, and to dramatize the way in which the relationship between the two can change, even within one improvisation. Over the course of these sixteen measures, Evans's improvisation moves from more stable structures organized around the original theme to less stable structures that initially do not relate to the theme. In a sense, this motion parallels the overall trajectory of Evans's career. Readers familiar with Evans's work will know that the texture of measures 152-58, with its tension-filled rising line and urgent chordal accompaniment, is only a foretaste of the direction Evans went late in his career.[318] While his early work was stricter in its conception and execution, his playing near the end of his life featured, among other things, more freedom in terms of line and (in some respects) dissonance, faster note values, bigger chords, more "rubato" and other tempo fluctuations (often pushing the tempo to an extreme degree), greater use of the outer ranges of the piano, and more pedal; in short, his playing was more late-romantic.[319]

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[318] In the first half of the excerpt, Evans comps in a manner closer to that of traditional bop style, where the left hand fills gaps in the right hand melodic line and offers other unobtrusive support.

[319] In his biography, *Bill Evans: How My Heart Sings*, Peter Pettinger recalls Evans's playing at his final performances at the Village Vanguard: "Now the notes were pouring out in a desperation born of inner fervor. Opening rhapsodies were massed in tiers, shifting tides around formal skeletons; piano solo codas were multilayered, like a one-man execution of *Conversations with Myself*." In *Bill Evans: Everything Happens to Me—A Musical Biography*, Keith Shadwick refers to Evans's "Brahmsian clouds of romanticism" in describing a recording drawn from these same performances at the Vanguard. Shadwick also quotes Harold Danko's

Evan's late style is also characterized by an abundance of rising middleground structures such as that discussed above. However, compared with the excerpt above, these structures are often less repetitive (sequential), push higher, have smaller apexes along the way, and unfold over a longer period of time. These strongly directional motions also are not always entirely stepwise, and are not always as disciplined in the way that they conclude. The sense of urgency this creates is not unlike, for example, a continually rising Wagnerian line that seems to defy resolution every step of the way (the difference is that in most jazz, the underlying chord changes, though there may be substitutions and other variations, repeat every chorus, so we hear the counterpoint of the melodic line against the root motion, even if roots are not actually present).

For other artists, the move away from common-practice techniques took different forms. The proportion in which we hear salience and stability relative to one another depends upon the various contexts created, which are largely a function of the eleven points listed above. These contexts may shift rapidly during the course of an improvisation, and may involve more variables than in the Evans example above. Consider, for example, Morgan's description of Hancock's use of superimposition in playing standards with Davis's quintet, which he demonstrates with a transcription and analysis of one of Hancock's improvisations on "All of You":

> The types of superimposition in Hancock's improvisations—side slips, superimpositions of bop formulas, superimposed quotation, and superimposed sequences of fragments—

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liner notes to the boxed set of these recordings as stating, "Rachmaninov comes to mind on these recordings even more than do Chopin, Ravel, and Debussy." Pettinger, *Bill Evans*, 278; Shadwick, *Bill Evans*, 193, 195.

> are woven seamlessly through the fabric of thematic paraphrase and inside bop formulas, with meticulous attention to voice-leading in both inside and outside material.[320]

Morgan's explanation of Hancock's use of sequences is similar to what we observed above in Evans's sequential passage, except that Evans stays inside the changes:

> Frequently, Hancock's melodic sequences begin with a pattern that, as initially stated, is consonant with the underlying changes and even emphasizes thematic pitches. Subsequent transpositions of the model stray from the underlying progression, until the end of the sequence returns the line to inside material and its thematic goal pitch.[321]

Both Evans and Hancock begin and end with thematic reference. However, in between these structural bookends, Evans uses extensions and/or alterations in a way that works against the natural resolutions of the progression, whereas Hancock goes a step further and plays outside the changes. For Evans was an inside player, largely working within the bop tradition and bringing his own individualistic refinements to it; Hancock (and the rest of Davis's quintet) combined inside and outside playing, commenting upon the bop tradition.[322]

As in classical repertoire, there is a "richly continuous" spectrum of music that lies between common-practice jazz and fully atonal music. In the case of Evans (and many others), Schenkerian analysis may be used to trace his movement along this spectrum. However, in order to adequately address music that is not entirely common-practice, certain principles of the

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[320] Morgan, "Superimposition," 86. By "superimposition," Morgan refers to "the technique by which an improviser plays a melody implying a chord, chord progression, or tonal center other than that being stated by the rhythm section. Ibid., 69.

[321] Ibid., 83.

[322] See ibid., 86-88, for remarks concerning the significance of this commentary on the bop tradition. Note that all these remarks apply to the quintet's playing of standards. On originals, the modus operandi was often "time, no changes," as mentioned above, although this dichotomy is something of an oversimplification.

Schenkerian approach must be relaxed. There is no guidebook to tell us when and how this is to be done, but avoiding the issue risks marginalizing this music, if only by default.

Of course, some may do so by design, assuming incorrectly that if surface salience becomes increasingly important in later repertoire, then the music must be more "superficial." On the one hand, transitional repertoire in both the classical and jazz idioms possesses a sort of subtlety that common-practice repertoire does not, due to the increased difficulty involved with hearing the pitch stability underlying surface salience; on the other hand, the surface itself may be more directly involved with large-scale structural organization.[323] The Thelonious Monk example that follows will demonstrate both of these observations.

An Analysis of a Performance of "Green Chimneys" by the Thelonious Monk Quartet

This section will examine a performance of "Green Chimneys" by the Thelonious Monk Quartet. Before proceeding with the analysis, some preliminary remarks concerning the relationship between salience and transcription must be made. Transcriptions, no matter how

[323] An example of the former point would be passages in jazz of rootless music, as described above. (Such passages no doubt exist in some way in classical repertoire as well, perhaps in the music of composers such as Ravel or Scriabin.) Straus's observations in "The Problem of Prolongation in Post-Tonal Music," as discussed in the previous chapter, provide evidence of the latter point. Furthermore, in jazz, and in certain classical repertoire, it is not merely pitch stability that is disguised by salience, but also the form itself, which in most jazz remains constant (and thus constitutes another type of "stability"). Keeping track of the form as a listener to or performer of jazz is "ear training" of the highest level, melodically, harmonically, rhythmically, and hypermetrically (up to and including the level of the chorus itself). The most skillful jazz musicians are capable of creating surface illusions so powerful that even very experienced listeners may have difficulty following the form. For listeners who may wonder whether or not the musicians do in fact follow the form precisely throughout a given performance, transcription can clarify things, and usually provides clear evidence that they do. For a recent study that addresses this issue from a metrical perspective, see Stefan Love, "Subliminal Dissonance or 'Consonance'? Two Views of Jazz Meter" (2013).

detailed and explicit, are approximate representations of a performance. While transcriptions generally entail a basic set of performance practice conventions, knowledge of performance practice of a specific jazz genre or even a specific jazz artist is insufficient to enable one to deduce from the transcription the way in which the notes were actually played. Transcriptions are also subjective documents, particularly when it comes to issues of emphasis (salience) and timing.[324] Jazz lines tend to be heavily variegated in terms of accent, and markings denoting emphasis are often not given in transcriptions, perhaps partly due to the large quantity and type of markings that would be needed to accurately represent a jazz performance. In short, transcriptions constitute a guide to listening.

All of these remarks apply with extra force to performances of Monk, whose idiosyncratic style is defined in part by his striking approach to articulation and timing (most players are much more consistent in their handling of these parameters).[325] However, rather than attempt to capture these constant fluctuations in my transcription, I have generally chosen not to make such indications. One of the main reasons for this decision is that the analysis itself is very much related to salience considerations. It would seem unscrupulous, or circular, to represent my subjective hearing of what is salient in the transcription itself (in the form of accent marks, etc.), and then appeal to those representations in my analytical remarks. This would put undue emphasis upon the transcription. The document which is under study, and by which the analysis is to be evaluated, is the recording.

This performance of "Green Chimneys" was recorded at Columbia Studios in New York City on November 14, 1966, with Monk's standard sidemen throughout much of the 1960s: tenor

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[324] Technology does not resolve the issue of subjectivity. For an introduction to this subject, see Nazir Jairazbhoy, "The 'Objective' and Subjective in Music Transcription."

[325] By the time this recording of "Green Chimneys" was made, Monk's style had actually evened out considerably, compared with his work in the 1940s and 1950s.

saxophonist Charlie Rouse, bassist Larry Gales, and drummer Ben Riley. A transcription is given in Appendix 1.[326] Material from this session (as well as sessions from November 15 and from January 10 of 1967) was released on *Straight, No Chaser* in 1967. However, "Green Chimneys" did not make it onto the original record, and this particular performance was not issued until 1996, when Columbia re-released the album on compact disc (another performance with the same personnel was recorded in December of 1967 and released on *Underground*).[327]

Figure 3.5 provides an overview of my analysis. Of central significance is the relationship between the composition itself (head) and the solo section taken as a whole (considering the section of improvised solos as its own entity constitutes a departure from the Strunk/Larson approach). The head is a traditional thirty-two bar popular song form (AABA). Rouse and Monk each take solos which are two choruses in length. At the end of his solo, Monk goes to the outhead, but Rouse simultaneously begins a second solo, which lasts for just one chorus.[328] The large-scale structure of Rouse's solos reflects the A section of the head, whereas the large-scale structure of Monk's solo reflects the B section of the head, despite the fact that the surface of each solo follows the AABA structure through each chorus (as indicated by the arrow). The radically different sound of their improvisations is in part due to their different

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[326] "Green Chimneys" was composed in December 1965 and January 1966, and was named after the school that Monk's daughter Barbara (Boo Boo) attended in Putnam County, New York. See Robin Kelley's *Thelonious Monk: The Life and Times of an American Original*, 378 and 325. I have rendered the transcription in G♯ minor, although it is usually customary in jazz to prefer keys with flats to keys with sharps. Steve Cardenas transcribes the head of the version from *Underground* in A♭ minor. See *Thelonious Monk Fake Book*, edited by Don Sickler.

[327] Kelley refers to the performance analyzed here as "a sluggish first attempt," and the performance released on *Underground* as "an acceptable rendition." Kelley, *Thelonious Monk*, 384 and 393. There is also an unreleased recording of the same personnel performing "Green Chimneys" live at the Puebla Arts Festival in Puebla, Mexico, on May 12, 1967. See Chris Sheridan's *Brilliant Corners: A Bio-Discography of Thelonious Monk*, 176.

[328] It is somewhat unusual for one musician to take two separate solos in a given performance. One notable exception is Coltrane's two solos on "Giant Steps."

interpretations of the chord changes, which even imply different key centers. The large-scale structure of the solo section as a whole (AABBA) thus mirrors the structure of the composition itself (AABA), and Rouse's second solo closes off what Monk had previously left open. To my knowledge, this is the first reductive analysis of jazz that has been done which explicitly addresses the structural relationships between the original composition and all improvisations in a given performance, considered both individually and collectively. The full meaning of Figure 3.5 will become clear after examining more detailed levels of analysis.

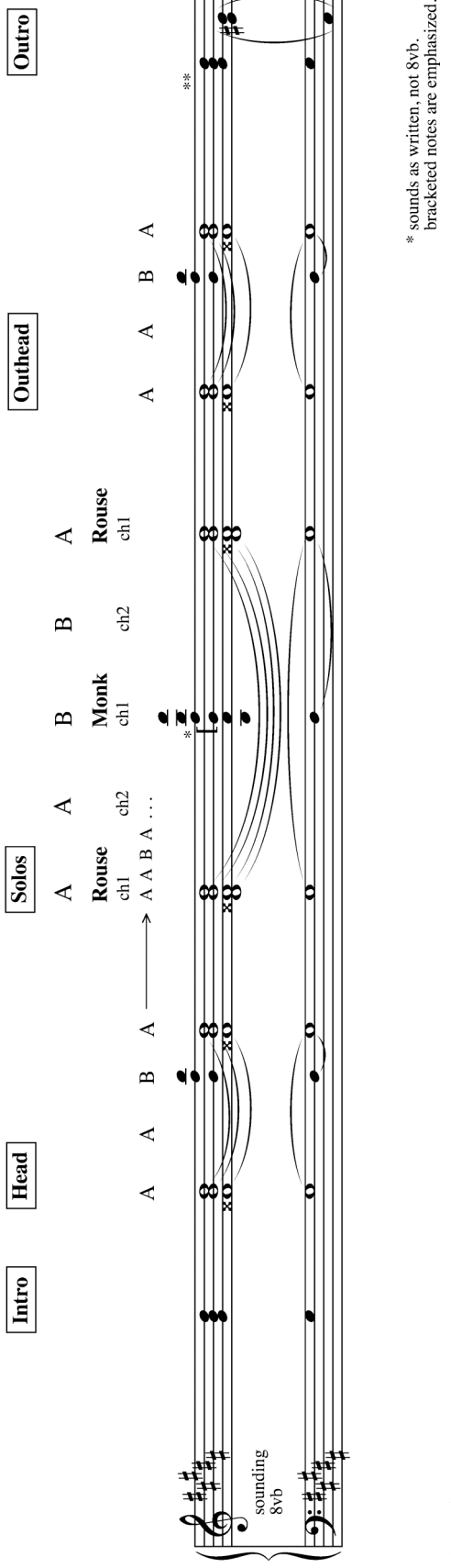

Figure 3.4. “Green Chimneys,” deep-level structure.

Figure 3.6 shows the structure of the head. There is some ambiguity as to what the "actual" changes are, and during the course of the performance, Monk, Rouse, and Gales all go different directions with them, implying different chords and different keys, often simultaneously. In the A section, the chords essentially alternate every measure between G♯ minor and C♯7(♯11). Most of the pitches belong to the G♯ melodic-minor collection, the only exception being the F♯ in the tenor line of Monk's left hand (note that the bass notes on the piano slowly fade away and eventually drop out, leaving only the tenor line). During the bridge, the harmony again essentially alternates every measure, this time between F♯7 and B7, evoking the blues. However, Gales emphasizes the F♯ harmony on the bridge, throughout the performance. Furthermore, Gales plays many occurrences of A♯ somewhat sharp, and many occurrences of B somewhat flat, particularly when these tones occur on even-numbered measures, thus heightening the ambiguity between the F♯ and B harmonies.[329]

Regarding the stemming of the lower melodic voice, the E♯ is a fundamental chord tone of the C♯ harmony, but it leads to the F𝄪, the two subphrases exhibiting an antecedent-consequent relationship. The F𝄪 is not one of the lower chord tones of the C♯ harmony, but it is the characteristic tone of that chord in that it is the raised-eleventh. More importantly, F𝄪 is the leading tone of the tonic harmony. Since we hear the melody overall in G♯ minor, and in quasi-

[329] Part of Gales's emphasis on the F♯ harmony has to do with the fact that in the head, the B chord actually occurs on beat three of the even-numbered measures. However, in such situations, musicians will often smooth out the distribution of the changes to a rate of one chord per measure, and in any case, Rouse almost exclusively implies the B chord, as described below. Also note that in the head, the saxophone and piano similarly place the C♯ chord on beat three of the odd-numbered measures, although Gales clearly and consistently places it on beat one.

modal fashion, we hear F𝄪 as more structurally significant than E♯.[330] In addition, Rouse strongly emphasizes the F𝄪 in his solos (see below); although, it is also then possible that our hearing of the head is in turn influenced by our hearing of his solos.

[330] The melody line Monk plays actually differs from that played by Rouse. Monk concludes each of the two subphrases on G♯ and B, respectively, thus reinforcing the key of G♯. E♯ and F𝄪 are actually harmony notes that Monk plays beneath the G♯ and B, respectively. Rouse's line doubles that of Monk, except Rouse leaps down to Monk's harmony notes. Monk plays the same figure during the intro, but without Rouse's line.

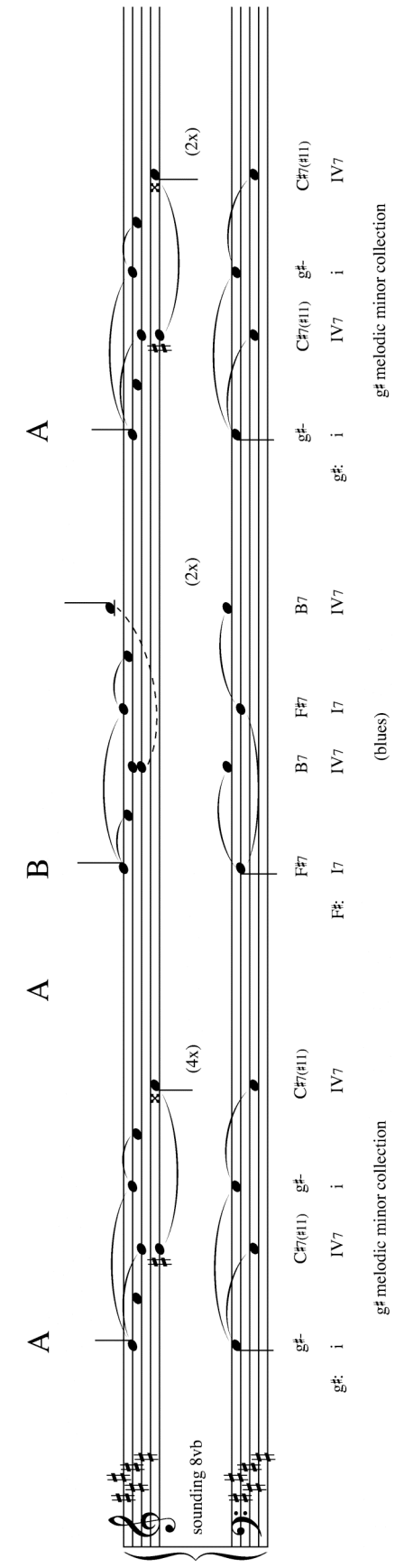

Figure 3.6. "Green Chimneys," head.

Following are some general explanatory remarks concerning the graphs used in the solo analyses that follow. (1) Rouse's lines are given in concert pitch, but up an octave so as to remain on the treble staff (this is the case in the transcription as well). (2) Phrases of the solos are separated by space on the graph. In Rouse's solos, one stem is generally assigned to each phrase, based upon salience. In the A sections of the first chorus of Monk's solo, Monk's phrases generally last for two chord changes (although he alters the durations of these changes; see below). Monk makes far greater differentiation between chord changes than does Rouse and often projects one chief melodic tone for each one. Generally, one stem is assigned to each chord change, based upon salience. In the bridge of Monk's first chorus, there are more changes per phrase, as well as lower stems due to the compound melody. Monk's second chorus is treated somewhat differently as it is fragmented and comprised almost entirely of chords, the top notes of which are indicated on the graph. Although the relationships between stemmed notes are not displayed in the surface-level graph (except in Monk's second chorus), these stemmed notes essentially constitute the next reductional level. (3) Occasionally tension tones must be treated like chord tones, in terms of the stem/slur analysis. In such cases, the number (9, 11, or 13) is shown beneath the staff (between the staves when there are two).[331] (4) Neither chord symbols nor Gales's bassline are given in the saxophone and piano solos. As further explained below, the solo lines, Monk's comping, and Gales's bassline all operate somewhat independently of the chord changes of the head, and of each other. In the analysis of the piano solo, Monk's left hand notes are given, with roots shown as implied tones when they are not played by Monk. (Freestanding implied tones are also occasionally given.) For the sake of simplicity, most of the

[331] An exception is in the bridge of Monk's second chorus, where pairs of numbers between staves indicate the harmony played, since the chords beneath Monk's upper line are not given in the graph.

clusters and dense chords do not appear on the graphs. (5) The constantly alternating chords create intrinsic ambiguity, particularly since, in the A section (particularly in Rouse's interpretation), these chords share the same referential collection.[332] In the most ambiguous situations, alternate interpretations are indicated, or no slurs at all are given, which indeed "claims less about the music," as Straus advocates.[333] Fortunately, this ambiguity mostly affects the slurring, and rarely if ever interferes significantly with stem selection. (6) The music necessitates a number of other obvious departures from traditional Schenkerian practices, such as slurred seconds, tritones, and sevenths, notes analyzed as parts of two harmonies, and so forth. (7) The higher-level melodic structures that emerge in these analyses do not consist of stepwise motion. Precedent for this may be found in *Structural Hearing*, even at the highest analytical levels (see Figures 480 and 489, for example), but such structures are particularly common in *Tonal Pitch Space*. This may in part be because *Tonal Pitch Space* explores atonal literature, but is also due to the more strictly bottom-up approach Lerdahl employs. Martin has worked with gapped background structures in a jazz context.[334]

Figure 3.7 gives an analysis of Rouse's first solo. With very little exception, Rouse stays inside the G♯ melodic-minor collection during the A sections. As mentioned, this creates some ambiguity as to what the harmony is. Rouse's lines generally seem to imply the G♯ harmony,

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[332] Because of this, the music may be thought of as quasi-modal. This is particularly true during Rouse's solos, as he not only plays one referential collection during the A section, but also during the bridge. This modality weakens, to a degree, the (traditional) functionality of the harmonies. See below for more on Rouse's improvisations; for more on modality in jazz, see Waters, "Modes, Scales," and "Diatonic, Acoustic, Hexatonic."

[333] Straus, "Problem of Prolongation," 13. See Chapter 2, page 88 for discussion.

[334] Martin, *Charlie Parker*, 29; idem, "Tonal Jazz Repertory," 15-17.

although the C♯ harmony is sometimes projected.[335] In the B sections, Rouse exclusively plays B Mixolydian, except for a single A♯ in measure 67, which is used in a phrase employing the B bebop-dominant scale. (Rouse's first phrase in the bridge does begin with repeated F♯s, reflecting the head, although the phrase overall arpeggiates the B harmony, also as in the head.) Despite the fact that Gales almost never truly addresses the B chord, Rouse's lines clearly outline it.[336] The harmonic organization of Rouse's solo is therefore such that we hear it in G♯ minor, with a move to the relative major during the bridge.[337]

[335] For example, Rouse sometimes ends his phrases with an accented C♯ on an even-numbered measure, which strongly suggests the C♯ harmony (see measures 64, 88, and 92). When Rouse ends on F𝄪, the same issue arises as in the analysis of the head. F𝄪 is the raised eleventh of the C♯ harmony, but is also the seventh of the G♯ harmony, and the leading tone of G♯ minor.

[336] Gales only rarely plays A♮ during the B sections, but plays many A♯s. In fact, during the course of the entire performance, Gales only plays A♮ on the bridge three times, in measures 134, 165, and 194; of these three, the latter two occur as part of an ascending chromatic line (and thus are notated as G𝄪). Similarly, Gales only plays D♯ four times, in measures 131, 163, 194, and 195; of these four, the last two occur as part of a long (relative to the rest of Gales's playing on this tune) stepwise passage. Gales also plays many E♯s during the bridges of Rouse's solo, even outlining a C♯ dominant-seventh chord in measure 70 (although this measure also contains one of only two occurrences in the whole performance of B on a downbeat, the other, played flat, being in measure 104). Gales only plays E♮ once during these two bridges. When the bridge occurs elsewhere in the performance, Gales does not do this (the only other E♯ played during the bridge occurs in the outhead, in measure 226). As described below, Monk's solo contains may E♯s during the bridge, but there Gales plays several E♮s).

[337] Further remarks concerning Rouse's first solo may be found below, in a discussion of Monk's comping.

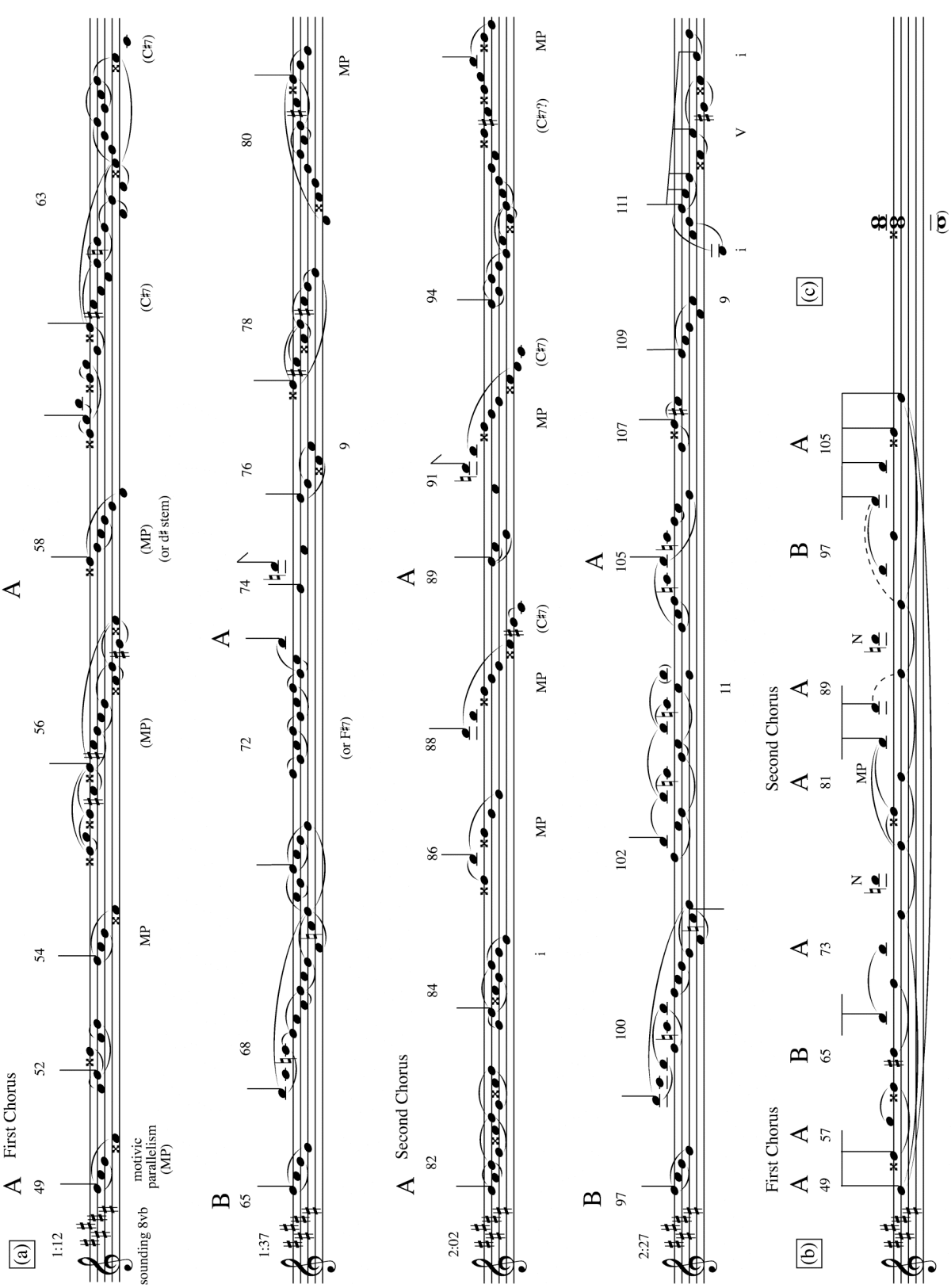

Figure 3.7. "Green Chimneys," Rouse, first solo.

Rouse frequently works directly with motives from the original melody (although the significance of this thematic referencing is not the same as it was in our discussion of "Stella"). He takes the repeated notes of the theme and turns it into a repeated eighth-note motive, sliding up into each note to reflect Monk's grace notes or dyads. This repeated-note gesture is then often followed by a descending figure similar or identical in shape to that of the theme. Sometimes the descending figure takes the form of an augmented triad, as is the case in the first and third phrases of the first chorus.[338] This motive stems directly from the A section of the head, and the significance of this will become evident throughout the course of this discussion.[339]

An important aspect of Rouse's solo is the use of F𝄪. Rouse only plays F♯ once during the A sections, in measure 105, and this occurrence is part of a phrase from the bridge, outlining the B chord, that runs over into the A section that follows. F𝄪 is the seventh of the G♯ chord (and the raised eleventh of the C♯ chord, when that is implied). While the major seventh is often played on a tonic minor chord in jazz, there is a sense in which this tone takes on more of the quality of a tension tone than a fundamental chord tone. The increased dissonance of the major seventh against the root, third, and fifth may be responsible for this—and Rouse exploits this dissonance to great effect. For the augmented triad formed from the third, fifth, and seventh of G♯ minor (B-D♯-F𝄪) is the chief motive of this improvisation, and is present at every level.

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[338] The fifth phrase, beginning in measure 58, is somewhat ambiguous. The D♯ is emphasized with the repeated-note gesture described and the ending note of the phrase, but the F𝄪 is heard in relation to the fourth phrase, which started and ended with F𝄪, the third phrase, which ended with F𝄪, and the sixth phrase, which begins with F𝄪.

[339] Rouse also introduces each B section with a repeated-note figure drawn from the head, as mentioned in the previous paragraph. This does not, however, conflict with my larger interpretation of how Rouse's and Monk's improvisations relate to the head. For one thing, Monk does not work directly from motives of the head; his improvisation is entirely different from Rouse's.

Instances of this augmented triad occurring at or near the surface are marked "MP," for motivic parallelism.

As can be seen at level (b), Rouse's improvisation slowly ascends and later descends through the augmented triad, from D♯ to D♯. This emphasis on D♯ is significant, as D♯ is also the chief melodic tone of the A sections of the original theme. Note that while there are three F♯s with stems in the B sections of the improvisation, there are also Bs and D♯s with stems in the B sections, as B and D♯ are essential chord tones of both G♯m7 and B7.

The striking outside tone D♮, played just after the bridge in measure 74, is a sort of "failed" attempt to push up to the high D♯. This is immediately followed by a retracing of the ascent through the augmented triad (shown at level (b)), which culminates in attaining the high D♯ in measure 88. Rouse then returns to the D♮ in measure 91 (again juxtaposing it with a C♯ one octave lower), before hitting the high D♯ one more time in measure 99. The D♮ thus serves a neighbor function, both in this solo and in Rouse's second solo.[340]

The large-scale arpeggiated motion described above is verticalized in the graph at level (c). However, there is an important nuance to Rouse's solo that must be mentioned in connection with this high-level analysis. While F𝄪 functions as a tension tone throughout the improvisation, Rouse treats this tone differently in the final phrase of his solo (marked with the

[340] We still hear these D♮s—and the high E in Rouse's second solo—in relation to D♯, regardless of their register and irrespective of whether or not D♯ is currently the "active" tone. D♯ is the single most important pitch-class of Rouse's solos, serving as both the upper and lower endpoint of the large-scale arpeggiated motion. In Rouse's first solo, the lower D♯ is also frequently emphasized, as can be seen in the graph at level (b). (The slurs on these lower D♯s should not be thought of as strict indications, but rather as illustrating how the D♯s overall form a sort of plane that defines the lower boundary of the whole. That certain D♯s from this plane also interface directly with the upper line, as in the aforementioned retracing and the register transfers of the second chorus, is thus not cause for question regarding their function.)

Roman numerals i-V-i), which is actually quite similar to that of Evans's first chorus, discussed above. Recall that Evans reached the structural thematic tone $\hat{5}$ in that phrase, and then closed off the pitch space in the foreground level with a stepwise descent to $\hat{1}$ before beginning a new chorus. Similarly, Rouse arrives at the structural thematic tone $\hat{5}$ in the final phrases of his improvisation, along with the repeated-note motive which belongs to it. In the final phrase, $\hat{5}$ is metrically accented and the highest tone, and is heard as structural due to contexts of various scale. Yet, $\hat{1}$ also plays an important role here. Rouse begins this final phrase with a low tonic note, the lowest pitch available on the tenor saxophone, which sounds quite loudly due to the saxophone's natural dynamic curve. After articulating $\hat{5}$, both Rouse and Evans close off the pitch space at the surface level with a stepwise descent to $\hat{1}$. Also like Evans, Rouse leaps down to an inner voice in the middle of this descending line, and as a result, resolves F𝄪 up to G♯. This resolution of F𝄪 to the tonic is striking after an improvisation in which F𝄪 is generally treated as a self-sufficient structural tone, with no apparent need to resolve.

Rouse's final phrase marks a shift from more progressive practices back to common-practice norms; in essence, this is a shift from salience to stability. The question of whether or not to include the resolution to G♯ at deeper reductional levels is a matter of weighing its significance relative to the rest of the solo, and trying to decide whether we hear the solo overall more in terms of salience or stability. The answer is, of course, not clear-cut. I have chosen not to include the resolution at level (b), but mainly for the sake of consistency—stemmed notes have been selected throughout level (a) based upon salience, and these stemmed notes have then—in bottom-up fashion—simply been transferred to the graph at level (b). My larger argument regarding the relationship of each solo to the head is not affected by this decision. (Just as one might consider G♯ to be part of the overall structure of Rouse's solo, G♯ might also

be considered to be part of the head; as noted above, Rouse's line in the head hits the harmony notes of Monk's line, which otherwise consists of a G♯ minor triad with a passing tone.)

An analysis of Monk's solo is given in Figure 3.8. The harmonic contrast with Rouse's solo is immediately evident. In the A sections, Monk plays F♯ rather than F𝄪, thus drawing from the 6♯ diatonic collection rather than the G♯ melodic-minor collection. Some isolated exceptions occur at the ends of larger phrases, in conjunction with the C♯ harmony.[341] Monk's phrases in the first chorus often aim for the C♯ harmony—and are punctuated with low fifths—but not in accordance with the changes as presented in the head (except for the first four bars); rather, the G♯ and C♯ harmonies seem to alternate every two measures.[342] (Monk's emphasis on the C♯

[341] Instances of F𝄪 in Monk's A sections occur in measures 120, 127, 139-41 (as part of a C♯ blues idea), and 155 (occurring briefly in a cluster chord and then switching to E♯). Monk also uses both F♯ and F𝄪 in his comping during Rouse's solos.

[342] The changes in the phrase beginning in measure 117 are somewhat ambiguous. Monk's left hand moves to B in measure 118, suggesting C♯7, as Monk's left hand single notes are generally either roots or sevenths. However, B could also be the third of G♯m7. This latter view is supported by the strong accentuation placed on the left-hand C♯ (and right-hand B) at the end of the measure, as well as the melodic emphasis on D♯. Furthermore, Monk more or less continues the pattern of two measures per chord change from this point until the bridge (with some ambiguity in the phrase beginning in measure 123). For whatever reason, Gales also plays two measures per chord during this phrase, and with relative clarity.

When looking at the transcription and graph of Monk's solo, it is also important to bear in mind that while his left hand notes often delineate a change of harmony, particularly when he sustains one left hand note into the next one (see especially the bridge of the first chorus), a new chord change can still be implied, by the right hand and/or by the (hyper)metric context, before it is reflected in the left hand. For example, Monk's phrases often begin in the right hand, with the left hand striking a note or chord only after several right hand notes. This is fairly typical though; what is unusual is the way in which he also changes the durations of the chord changes (often in conjunction with metric displacement). Since those chord changes are also closely related, the left hand is sometimes needed to clarify the harmony. The phrase starting just before measure 121 is a good example of the sort of ambiguity that exists as a result of all these conflicting considerations. The low fifth belongs harmonically with the previous phrase, but is played rhythmically in conjunction with the start of the new phrase. And measure 121 is the start of new two-, four-, and eight-bar hypermetric units, so a return to the G♯ harmony is implied, but

harmony is further discussed below.) Because of the use of F♯ and the alternation of harmonies, we hear the changes in Monk's A sections as ii and V in F♯ major.

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the left hand does not confirm this until partway through the phrase. Furthermore, the G♯ and B of the right hand are chord tones of both chord changes. (The lead-in to measure 129 is similarly launched with a low fifth, but the harmony there is unambiguous.)

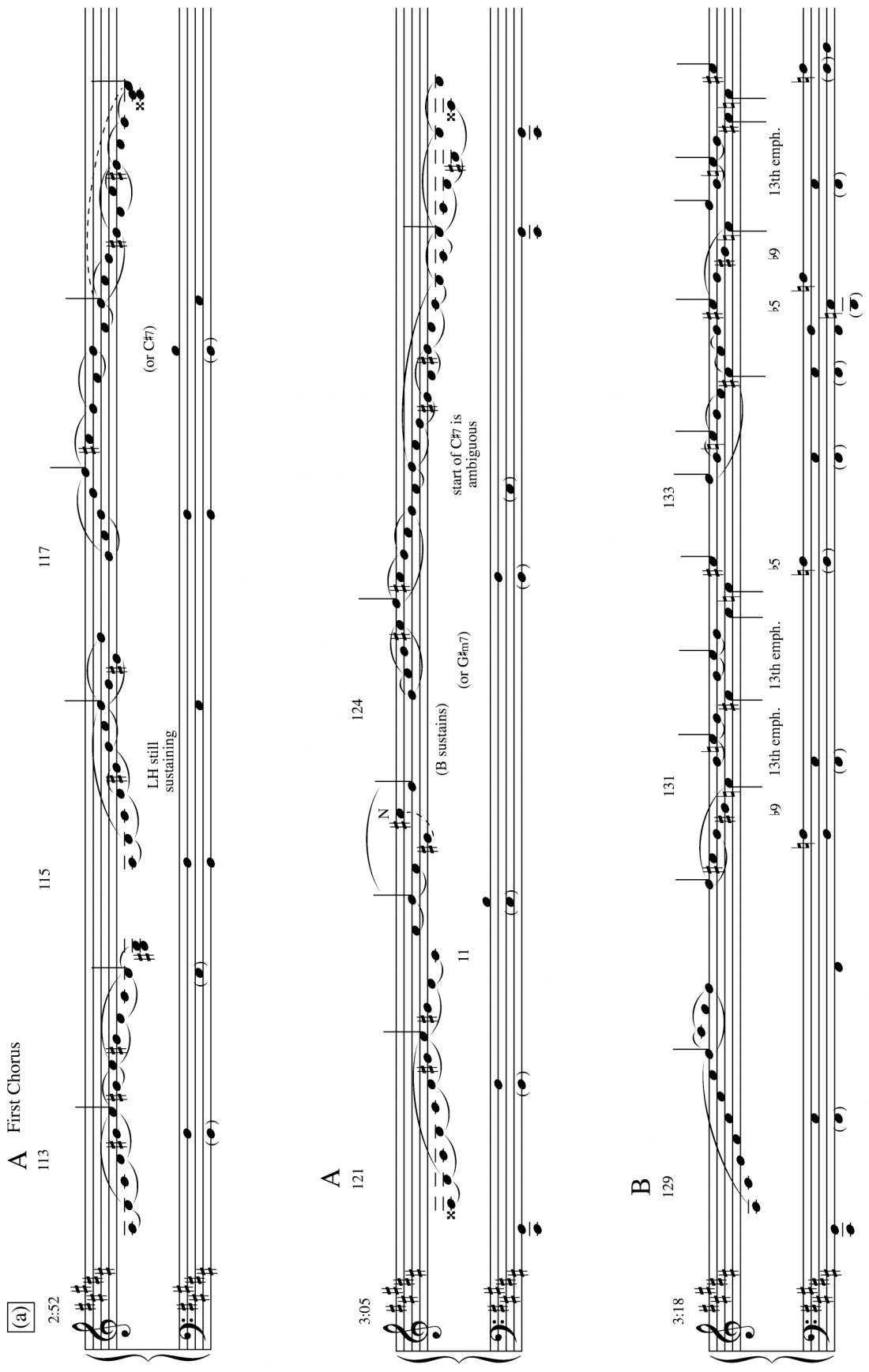

Figure 3.8. "Green Chimneys," Monk solo.

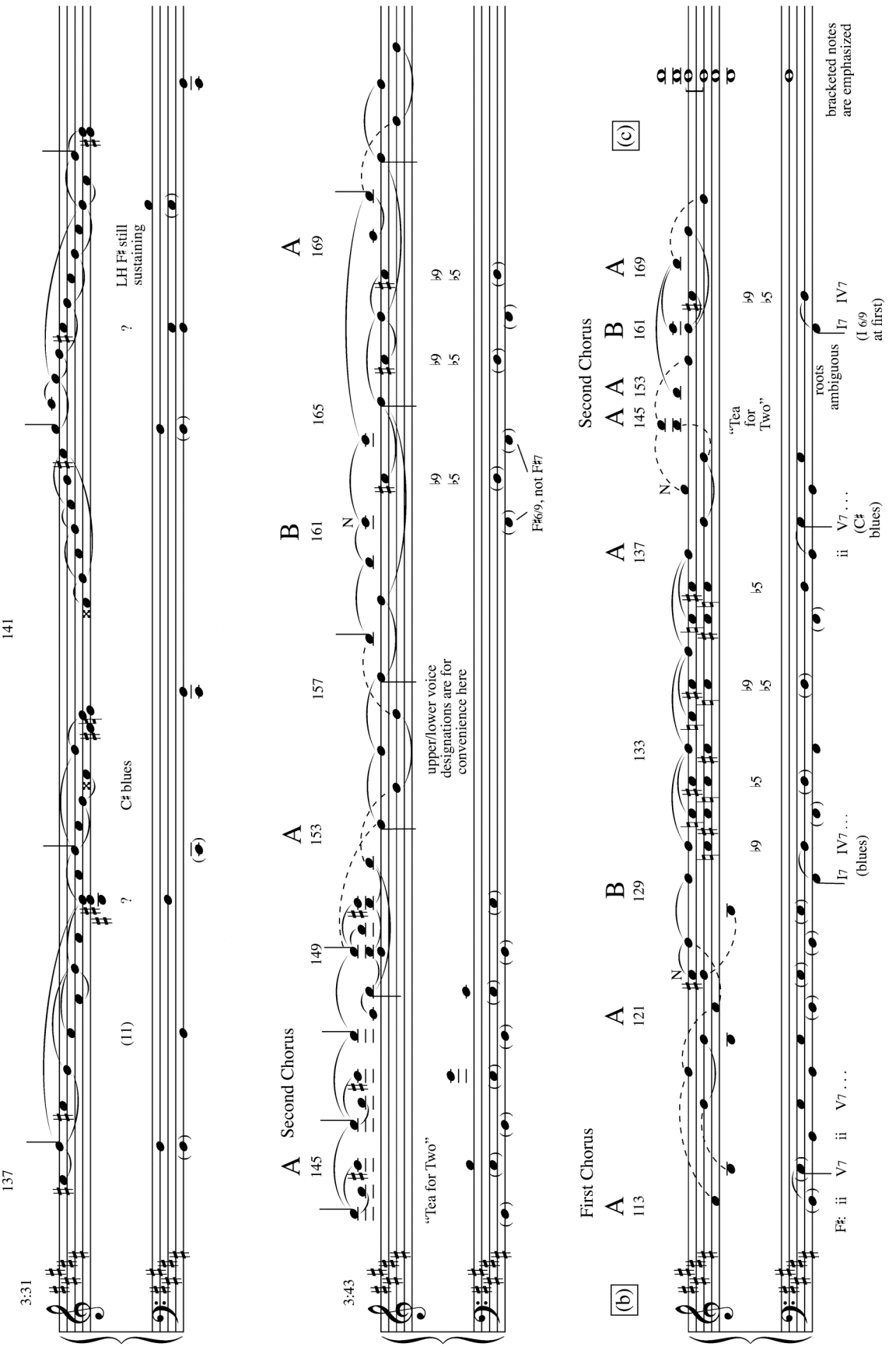

Figure 3.8. "Green Chimneys," Monk solo (continued).

In the B sections, Monk plays in accordance with the changes of the head, alternating F♯7 and B7, which we hear as I and IV. Significantly, Monk does not alter the F♯ chord, but plays the B chord with a flatted-ninth and a flatted-fifth (in blues forms, the IV chord is more frequently altered than the I chord). Further evidence of Monk's orientation towards F♯ major in his improvisation can be seen in his quotation of Vincent Youmans's "Tea for Two" at the beginning of his second chorus (see measures 145-49), which Monk had in fact recorded twice prior to this session—only one year before, in 1963, and also in 1956.[343] The harmonic progression of the first four measures and indeed much of the chorus of "Tea for Two" (as often played by jazz musicians) is strikingly similar to those of "Green Chimneys": ii V7 ii V7 I IV7 I IV7 (B♭m7 E♭7 B♭m7 E♭7 A♭Δ D♭7 A♭Δ D♭7). In a sense, "Green Chimneys" may thus be considered as a sort of contrafact of the standard "Tea for Two." In his second chorus, which consists almost entirely of chords, Monk in fact plays F♯6/9 at first, not F♯7, thus defining the tonic function of F♯ even more clearly.

Melodically, Monk's solo is based on the pitches F♯ and B, as shown in the graph at level (b). F♯ and B are, of course, the roots of the chord changes in the bridge, as well as the principal thematic tones of the bridge. One reason this works is that F♯ and B are also the sevenths of the chord changes of the A section. It is particularly interesting to trace Monk's melodic treatment of F♯ through his improvisation, due to the tension he creates between it and E♯. Sometimes this tension arises out of the alternation of the G♯ and C♯ harmonies, other times it does not. The opening phrase is an example of the latter situation; Monk introduces the E♯/F♯ vacillation right

[343] These recordings were released, respectively, on *Thelonious Monk: The Unique* and *Criss-Cross*.

away, over the G♯ chord. (Note that the last of these E♯s, occurring at the end of measure 113, is actually played simultaneously with F♯ (and E♮), but Monk emphasizes the E♯, the middle note of this cluster.) The second A section exemplifies the former situation. The prominent E♯^{5} of measure 123, the third of C♯7, "resolves" back up from where it came, to the seventh of G♯m7, to which it is a neighbor tone.

The bridge of the first chorus is a study in guide-tones, and illustrates how Monk continues to create tension between F♯ and E♯ despite the different harmonic context. The third and seventh of F♯7 naturally might lead to, respectively, the seventh and third of B7, but Monk instead leads the E up to the flatted fifth (E♯) of B7, itself the leading tone of F♯, which then follows.[344] At the beginning of next A section, the tension between E♯ and F♯ is made even more explicit. Here E♯ is metrically accented, but F♯ is higher and is played at a louder dynamic.

The beginning of the second chorus features the "Tea for Two" motive, which is played three times. This motive itself embodies the tension between E♯ and F♯, which occurs in conjunction with the harmonic alternation. In the bridge of the second chorus, Monk initiates a climactic plateau with the black-keys F♯6/9 cluster chord of measure 161, maintaining the suspense in part by again using the flatted fifth of B_7 to vacillate between E♯ and F♯.[345] The

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[344] Some clarification is called for here. In measures 131-32 and 135, Monk surrounds the E with salient D♯s, thus preempting a meaningful resolution to D♯ on the B chord. In measure 133, the E is also surrounded by D♯s, but E is more salient. For the sake of illustrating the chord-tone resolutions here (stability), E has been stemmed in all cases. This does not affect my overall argument, and both D♯ and E have a stepwise relationship to E♯. Pitches with lower stems here are shown as inner voices in the graph at level (b). These notes, while perhaps heard overall as neighbor tones to B, are not as salient as those of the upper voice.

[345] E♯ here is spelled as F♮ in the transcription. This is mainly to make Monk's voicing of F/B—which also contributes much to the suspenseful sound of this passage—more clear to the eye.

buildup of tension is released by the massive and bizarre cluster at the outset of the final A section.

Returning now to the bridge of the first chorus, another striking aspect of this passage is the way in which Monk obscures the root, particularly in measures 134-35. He often plays only the seventh of the chord for his left-hand voicings, but on beat four of measure 134, he plays the seventh of the B chord as an octave gesture, striking a lower-register A (A^2) that is in the same range as the bass. Of course, we have heard a similar right-hand figure in measures 130-31 with the root beneath it, and have also heard the same harmonies alternate throughout the performance, but Monk's left-hand emphasis on the seventh in measure 134 contributes to a disorienting effect, especially since Gales never outlines the B chord (as detailed above). Although what Gales plays in measure 134 very much suggests B7 (recall that this is one of only three measures in the entire performance in which Gales plays an A♮ on the bridge), B is nevertheless absent, and in any case Monk delays his arrival at the B chord until beat 4. In fact, Monk does play the root of the F♯ chord—as an octave—during beat 3, the only left-hand octave in the entire performance, thus strongly conflicting with Gales. (Note as well that the B in the bass in measure 135 is played flat and is part of a gesture that suggests the F♯ chord that "should" be the harmony for that measure.)

The type of (mostly) rootless playing exhibited here is very different from the lush mid-register rootless voicings for which Evans is known, particularly when the bass articulates the roots clearly, as is the case in "Stella," above.[346] (Although there are many times when Evans plays in such fashion without any accompanying bassline.) One reason why the bridge of this chorus still works harmonically is because the repetitive and quasi-modal nature of "Green

[346] For the bassline, see *Bill Evans Trio*, 115-16.

Chimneys" itself gives the listener ample opportunity to assimilate the harmonic structure. Passages such as this one, in any case, challenge us to hear stability—the underlying changes—despite its disparity with surface salience.

Having now discussed Monk's solo, we can more easily address his comping behind Rouse. Monk's comping is harmonically similar to his solo. In the A section, he plays F♯ on the G♯ chord, and F𝄪 on the C♯ chord, despite Rouse's avoidance of F♯ (Gales's F♯s also conflict with Rouse's F𝄪s). The rootless voicing for the G♯ harmony that he uses during much of Rouse's first chorus is notable for the same reason that measure 134 is (discussed above): the seventh, which is doubled, is played in so low a register as to frequently sound below the bass. Monk's cluster voicing for the C♯ chord is also very low. Furthermore, he plays these chords loudly, sometimes sustained (especially at first), and almost always on the beat, in a style antithetical to that of the traditional beboppers. During the second chorus of Rouse's first solo, Monk's comping is strikingly similar to the chordal improvisation of his own second chorus. The bridge is especially notable—Monk's ecstatic black key clusters here, again implying F♯ major, are much larger and louder than in his solo, and contrast markedly with Rouse's exclusive emphasis on the B chord and its concomitant A♮s.[347] In addition, Gales's bassline here (and even more so in the first bridge) is strongly suggestive of F♯ major, with its E♯s, A♯s, and tonic-dominant formations. Monk's comping in Rouse's second solo is similar overall to that in Rouse's first solo, and combines some elements from both choruses of the first solo.

An analysis of Rouse's second solo is given in Figure 3.9. He begins with a phrase that is particularly similar to the melody (although notably with G♯ rather than E♯ as the lower tone,

[347] Rouse does begin this bridge as he does his first bridge, previously described, with a line reflecting the head; the F♯s of the first part of that phrase may be heard as part of the F♯ harmony.

forming a tonic triad that quickly re-establishes the key of G♯ minor), presumably in part because of the above-mentioned confusion over whether or not to go to the outhead. Most of the above discussion of Rouse's first solo also applies to Rouse's second solo, as it is similar in overall conception. The same deep-level structure and motivic parallelism exists. The large-scale octave ascent through the augmented triad is particularly pronounced as it is compressed, occurring within fourteen measures, and is continually reinforced with surface-level parallelism. Measures 189-90 are particularly noteworthy, as the parallelism here most closely matches the larger structural motion, while simultaneously serving to complete that motion.[348] This surface-level activity is similar to the mid-level retracing behavior observed in Rouse's first solo, which also culminated in attaining the high D♯. A descending D♯ to D♯ arpeggiation in the succeeding phrase, while secondary to the B, serves to reinforce the D♯ while also functioning inversely with respect to the retracing that precedes it (*prefiguring* the octave *descent* that follows). During the last A section, Rouse resolves F𝄪 in a V-i gesture, again as in his first solo.

[348] It may be observed that the arpeggiation here, as well as in the previous phrase, contains G♯, not just the augmented triad. However, I have chosen to place a slur over the G♯ due to the fact that these lines are played as sixteenth notes, thus emphasizing the augmented triad.

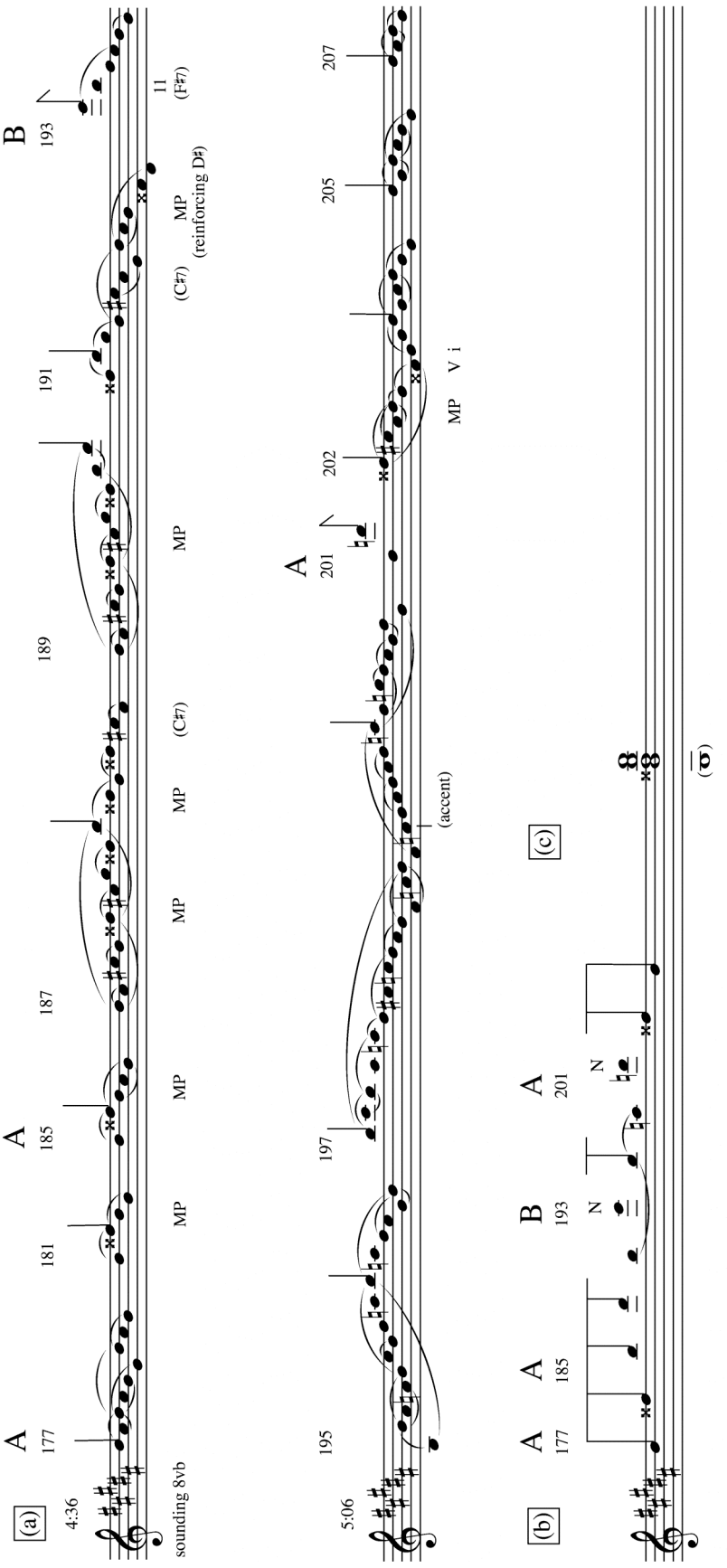

Figure 3.9. "Green Chimneys," Rouse, second solo.

One divergence from the first solo is the high E in measure 193 and the B and F♯ which follow; this is the closest Rouse comes to addressing the F♯ harmony. (Of course, the E might also be heard as the eleventh of the B chord; after all, to hear this idea as belonging to the F♯ chord requires us to hear the B as the eleventh.)[349] The E is surprising because of the emphasis on D♯ throughout both of Rouse's solos, and it is perceived as a neighbor to D♯. The rest of the bridge is again focused on the B harmony, using B mixolydian and dominant bebop.[350] Having heard the upper neighbor E, we then hear the lower neighbor D♮ at the beginning of the last A section, as in the first chorus of Rouse's first solo (again jutting out from a lower register), before D♯ is reaffirmed as the structural tone.[351]

The outhead is played the same as the inhead; that is to say, the ending is not altered to conclude on the tonic, but rather ends on the C♯ chord. Monk does play a brief outro, but this also clearly ends on C♯. Gales accompanies Monk with G♯s, but echoes Monk's conclusion on C♯ by plainly presenting a descending C♯ major triad. Jazz performances do sometimes conclude on non-tonic chords, but the effect here is not so much of a non-tonic chord as of an ambiguous

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[349] Natural elevenths functioning as chord tones are relatively rare on dominant chords. (However, one of Monk's cadential formulas is to add the natural eleventh to a dominant chord just above the third, and then resolve it to a tonic major chord with those same two tones—now the seventh and the root, respectively—next to each other.)

[350] At first glance, the E♯ in measure 197 may appear to be part of an F♯ dominant bebop structure, but it does not function in this way, and is part of a larger B dominant bebop phrase. Because of the skip in Rouse's line between A♮ and F♯, the chromatic passing tone E♯ is needed to get the B dominant bebop scale back on track, in other words, with the chord tones landing on the beats (and on the "and" of each beat, since this is a sixteenth-note passage). For more on bebop scales, see Baker, *Bebop*.

[351] Some explanation of the phrase in measures 195-96 is called for. The beginning of this phrase, picking up on the end of the previous phrase, is strongly centered on B. B is also the highest note of the phrase overall, although this B is not metrically accented. The emphasis of the phrase may shift from B to A, as in the following phrase.

chord and key center. Do we hear this C♯ major triad as IV in G♯ minor, V in F♯ major, or I in C♯ major?

This type of ambiguity is reminiscent of Bach's modal chorales, particularly when he employs the minor dominant. For to the extent that we may hear C♯ as tonic at any point in this performance, we must also then hear the G♯ chord as a minor dominant. Also related is the way in which dominant chords are used in the blues—not only on the V chord, but also on the I and IV chords. For while the C♯ chord that is played here is striking in that it is an unadorned triad, a dominant harmony is clearly implied, since the C♯ harmony has been played as a dominant throughout the entire performance. Yet, even if the seventh were played here, that would be entirely consistent with the sound of the final tonic chord in a blues, where musicians indeed often emphasize the seventh, playing on the ambiguity between the chord's function as both tonic and V of IV.[352]

Monk does, in fact, suggest C♯ blues at one point in his solo. It was mentioned above that the phrases in his first chorus often aim for the C♯ harmony. This effect becomes increasingly noticeable as his improvisation develops. In measures 139-40, as he returns to the A section after the bridge, he plays a repeated C♯ blues idea, and then concludes the phrase on a C♯ major triad with the flatted third added.

Finally, with respect to the role of C♯, it must be observed that during most of the first eight measures of the introduction, Monk plays a low fifth C♯-G♯, conflicting with Gales in

[352] Other aspects of the blues exhibit ambiguity as well; for example, the combination of tones from major and minor. On a general level, the coexistence of different interpretations in this performance may be seen as coming in part from the blues, by which Monk's music is strongly influenced.

measures 5 and 6. Monk thus emphasizes the C♯ harmony both at the beginning and at the end of the performance.

Despite the above observations regarding the significance of the C♯ harmony, I hear these occasional emphases on C♯ as inflections of the key areas I have already outlined. Nevertheless, there clearly are different ways in which to hear this performance, particularly when one considers the unusual degree of tonal independence between the saxophone, piano, and bass. My analysis focuses on each soloist individually, and captures what I perceive to be the most strongly projected tonal implications.[353]

Figure 3.10 combines the graphs at level (b) for each of the solo analyses above to give a mid-level view of the complete performance (the head has been further reduced here as well). As has been demonstrated, Rouse's improvisations reflect the A section of the head. Harmonically, they are in G♯ minor, with a move to the relative major in the bridge. Melodically, he outlines an augmented triad with D♯ as the principal tone, as in the head. Monk's solo reflects the B section of the head. Harmonically, it is in F♯ major. Melodically,

[353] It might seem as though a detailed comparison of this performance with that released on *Underground* would help to resolve some of these questions about tonal ambiguity. Such work would certainly be intriguing, but might also miss the point: this is a flexible form that naturally affords the musicians great freedom and spontaneity, and the goal is not to work backwards to find the definitive truth about what the "original composition" "is." Whatever version Monk may have put on paper has no special authority over recorded performances occurring later. Each performance of the piece is unique, self-sufficient, and has its own secrets to unlock. More broadly, we can observe that the performance on *Underground* is about twice as long as that on *Straight, No Chaser*, although the tempo is considerably more brisk. The saxophone and piano solos are several choruses long, and there are substantial solos by the bass and drums as well. The overall sound is significantly different, although some aspects are certainly similar.

Monk emphasizes the notes F♯ and B, which are the roots and principal melodic tones of the bridge.[354]

[354] Even Monk's C♯ blues idea reflects the bridge inasmuch as the bridge itself features a blues progression.

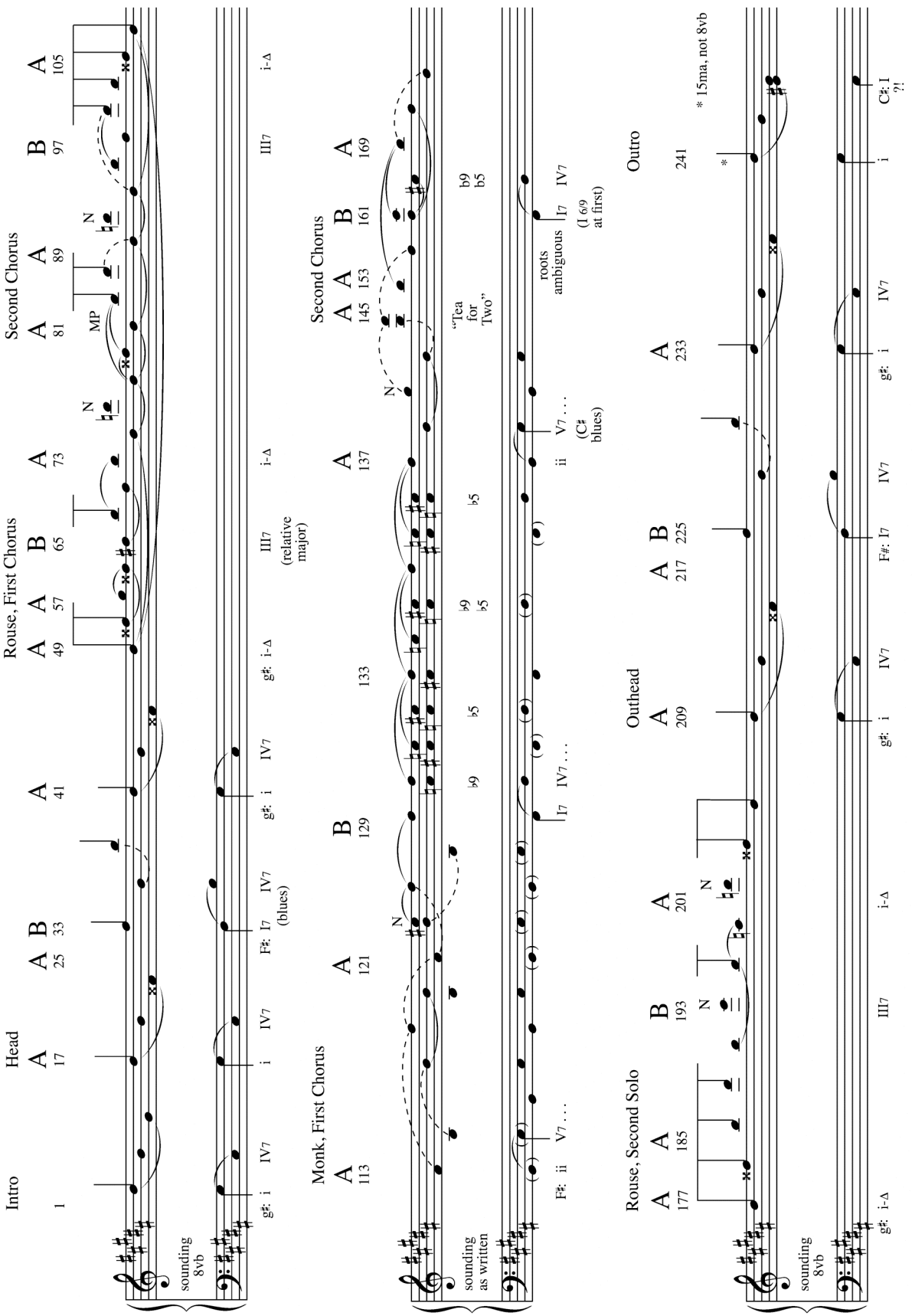

Figure 3.10. "Green Chimneys," mid-level structure.

We may now return to Figure 3.5, which combines the deep-level analyses of each segment into an overview of the complete performance. The large-scale structure of the solo section—two choruses of Rouse, two choruses of Monk, and one more chorus of Rouse—may be represented as AABBA. This structure mirrors the AABA structure of the head. Whether by design or not, Rouse's second solo provides structural closure after the fragmented ending of Monk's solo, which hovers inconclusively on cluster chords of ii and V in F♯. Rouse's use of the tonic triad in the opening phrase, rather than an augmented triad (by way of G♯ instead of F𝄪), articulates the return to G♯ minor. Furthermore, Rouse closes off the pitch space of his own improvisation with a V-i resolution at its conclusion, just as he did at the end of his first solo.

In his review of Larson's *Analyzing Jazz: A Schenkerian Approach*, Martin writes:

> I think . . . that Larson must be granted this . . . constant thumping of the drum of Schenkerian analysis. His book originates in the mid-1980s, when Schenkerian theory still carried the aura of the exotic. The impetus behind his dissertation was to show the value of applying Schenkerian principles to jazz, a music genre Schenker disdained. Thus Larson's pioneering tone should be excused, even if his original motivation has since lost its urgency.[355]

In the conclusion of Chapter 2, I observed that Babbitt and Rothstein had contributed to a wider acceptance of music theory and Schenkerian analysis, respectively.[356] Martin's observations reflect that increasing currency of Schenkerian analysis, while also touching on the fact that Larson capitalized upon Schenker's rising stock to bring greater attention to jazz theory. There is still much work to be done to bring jazz theory the acceptance it deserves, and Schenkerian

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[355] Martin, "Guide Tones," 124. See also Benjamin Givan's review in the *Journal of Music Theory*.

[356] As mentioned in Chapter 2, Babbitt also helped Schenkerian theory gain greater prestige in the academy, but here I refer to his efforts to establish music theory generally as a more technical field of inquiry.

analysis of jazz will continue to play a significant role in this process.[357] But the argument I made earlier in this study about Babbitt and Rothstein applies to Larson as well. Rothstein et al. have allowed us to move "beyond Schenker," though in a different sense than that intended by Narmour et al. We are free to move beyond Schenker—in the analysis of both classical and jazz idioms—not because it doesn't work, but because it does work.

In this chapter, I have demonstrated that the same type of sophisticated large-scale organization revealed by Schenker, Salzer, and Larson may be found in post-Schenkerian jazz. We have seen the applicability of Schenker's concept of organic coherence through the presence of motivic parallelism operating on all structural levels—that of a complete multi-chorus improvisation, a complete single-chorus improvisation, the solo section taken as a whole, the composition itself, as well as various lower levels. While continuing to refine our understanding of the structure of common-practice jazz, analysts may also find it fruitful to engage with the Salzerian tradition and investigate large-scale relationships in other forms of jazz.

[357] One of the greatest challenges facing jazz theorists is educating the music theory community about the fundamentals of jazz history and theory in a way that avoids infantilizing one or both parties.

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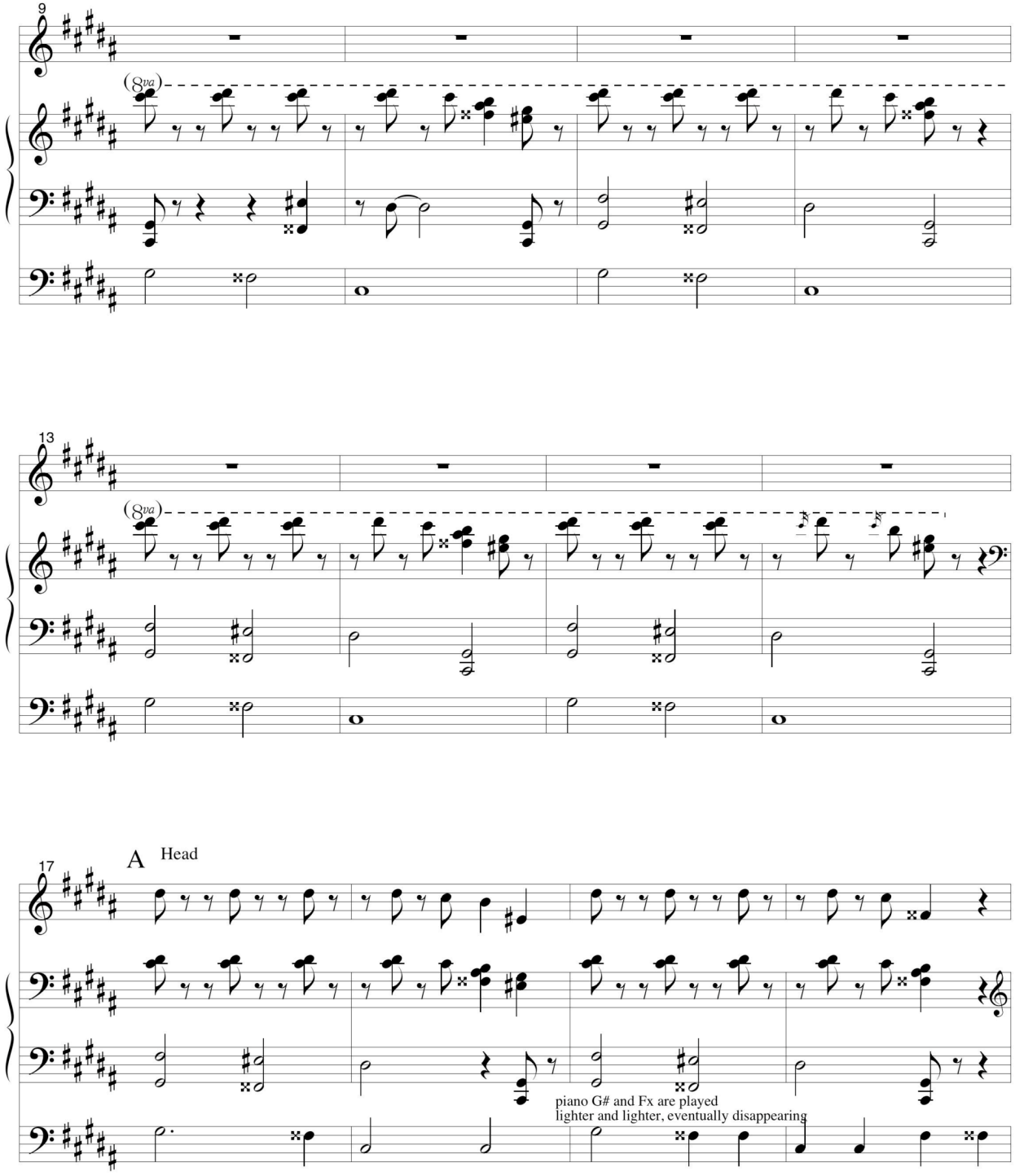
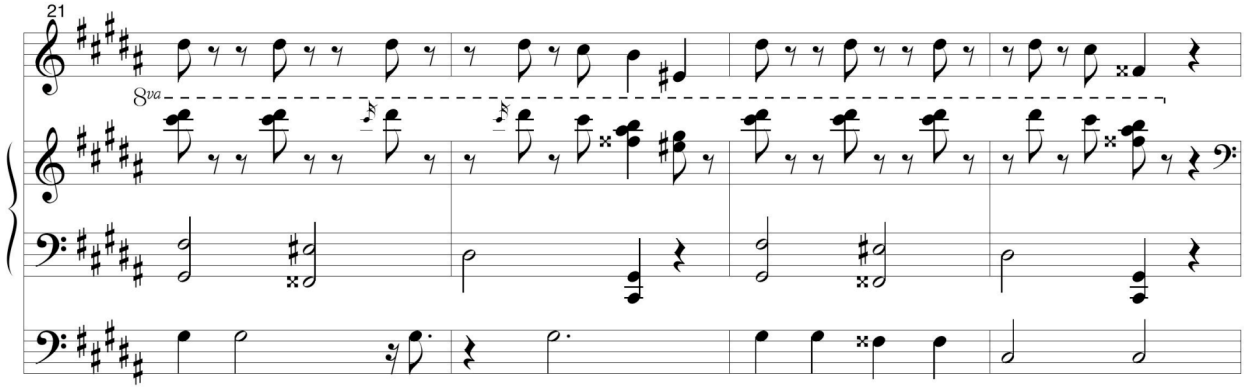
APPENDIX: TRANSCRIPTION OF A PERFORMANCE OF "GREEN CHIMNEYS" BY THE THELONIOUS MONK QUARTET

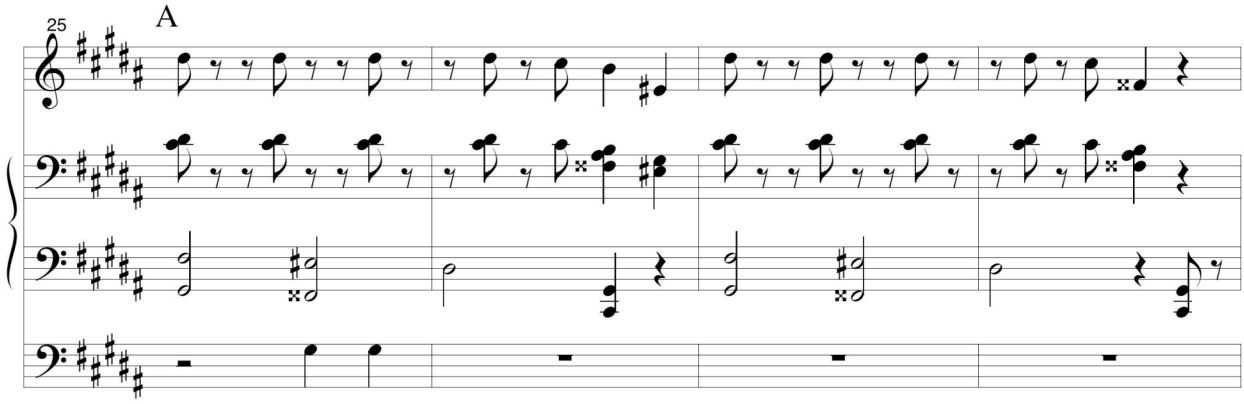
Recorded on November 14, 1966
at Columbia Studios in New York

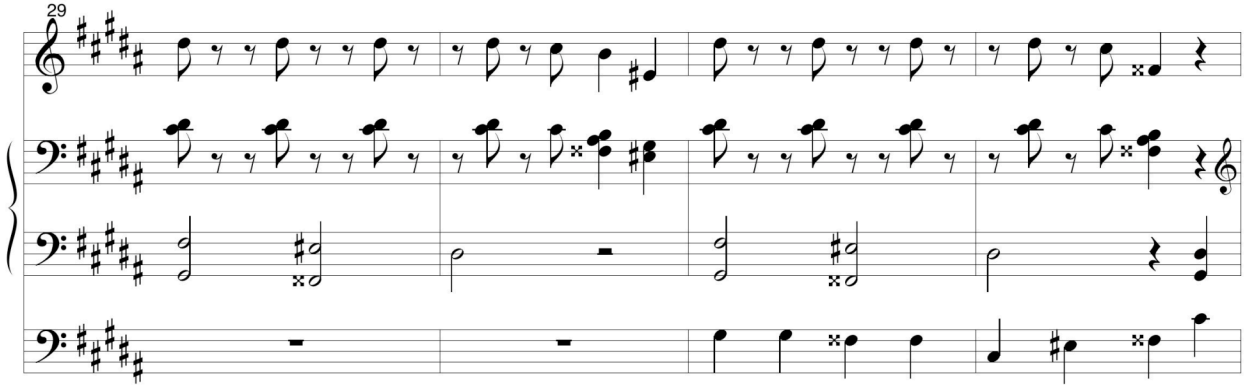
Thelonious Monk (p) Charlie Rouse (ts)
Larry Gales (b) Ben Riley (d)

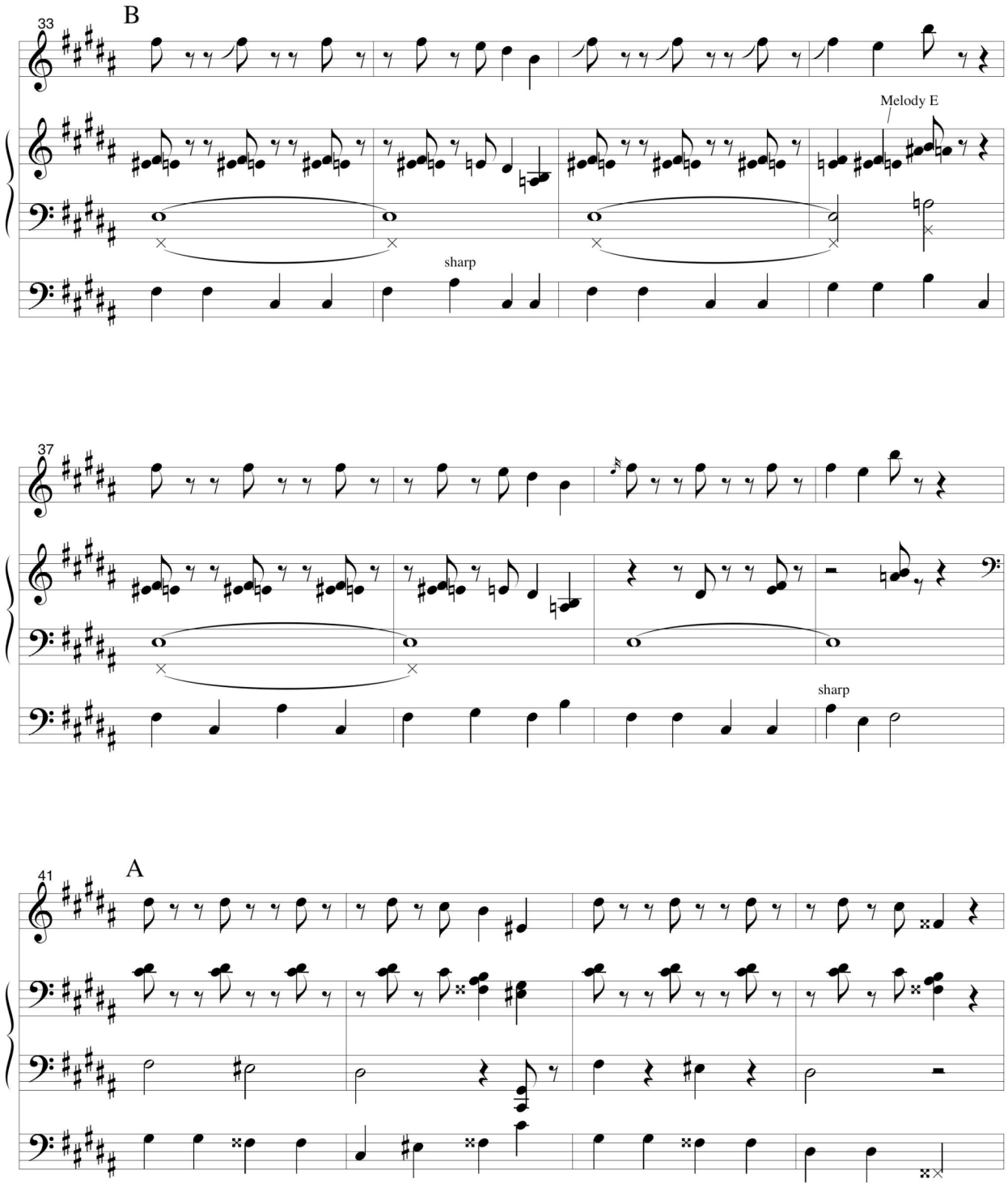
Concert Score

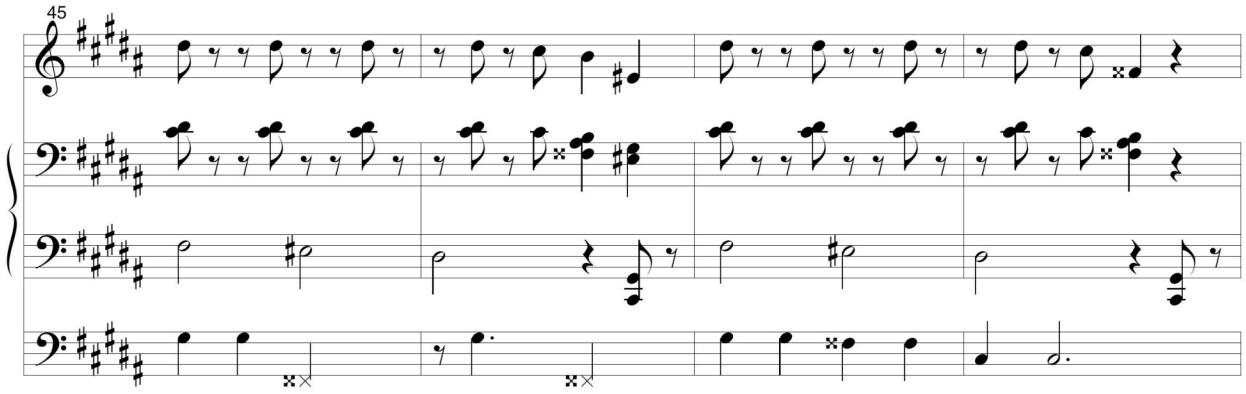

9
(8va)
13
(8va)
A Head
17
piano G# and Fx are played
lighter and lighter, eventually disappearing

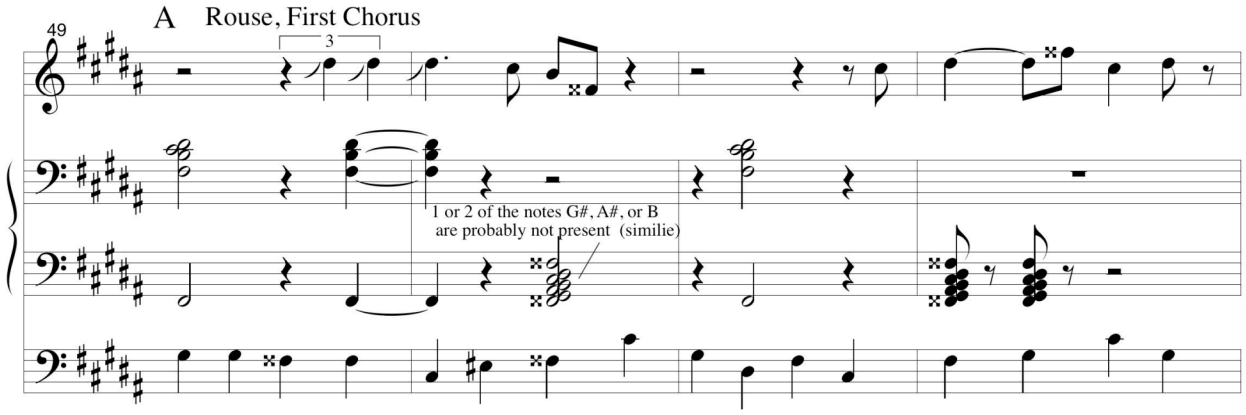

21
8va

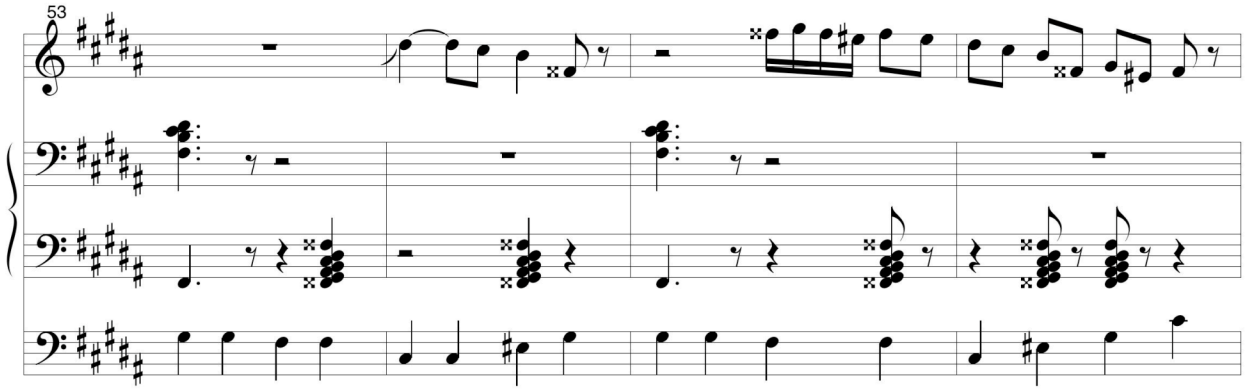

A
25

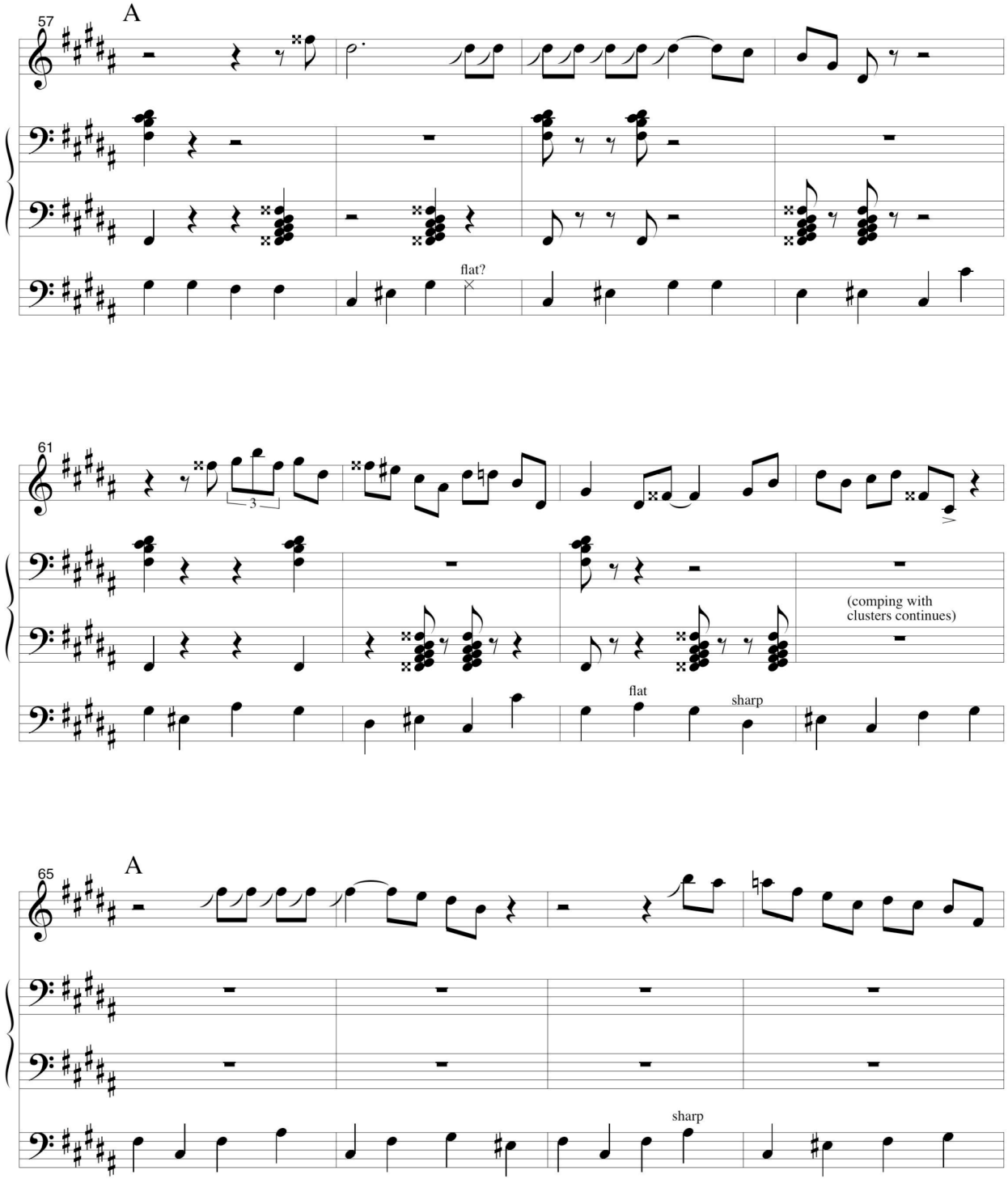

29

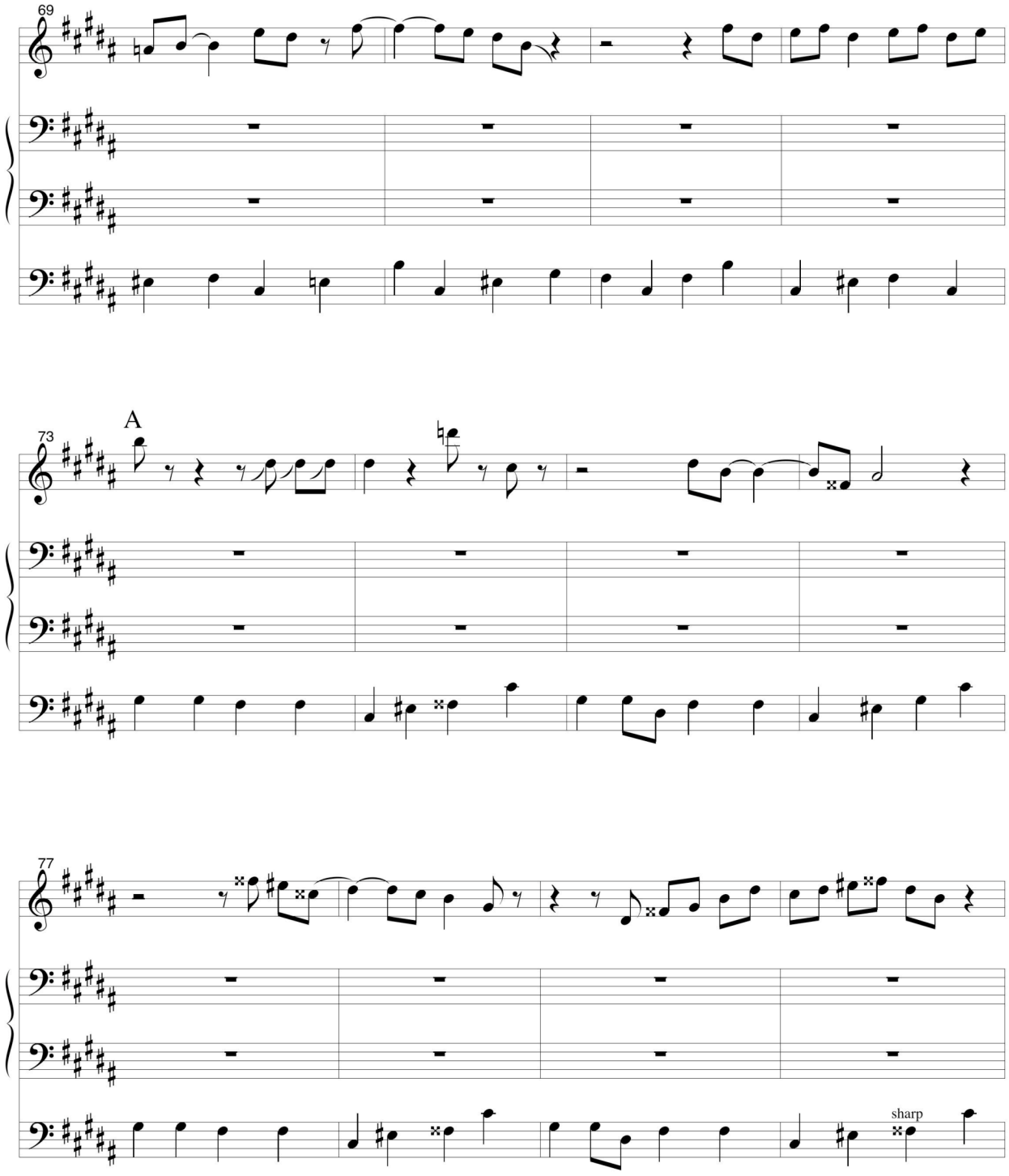

33
B
Melody E
sharp
37
sharp
41
A

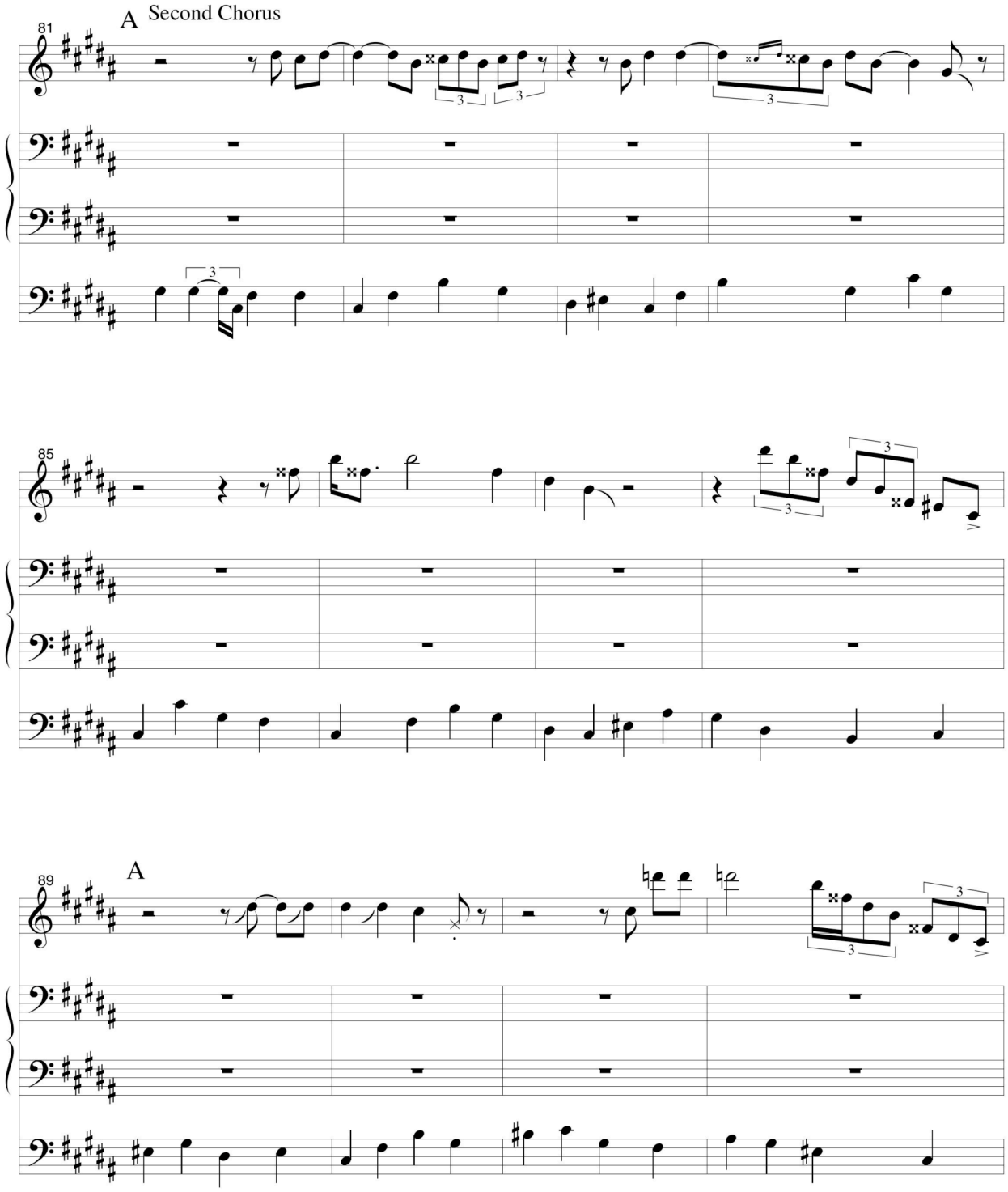

45

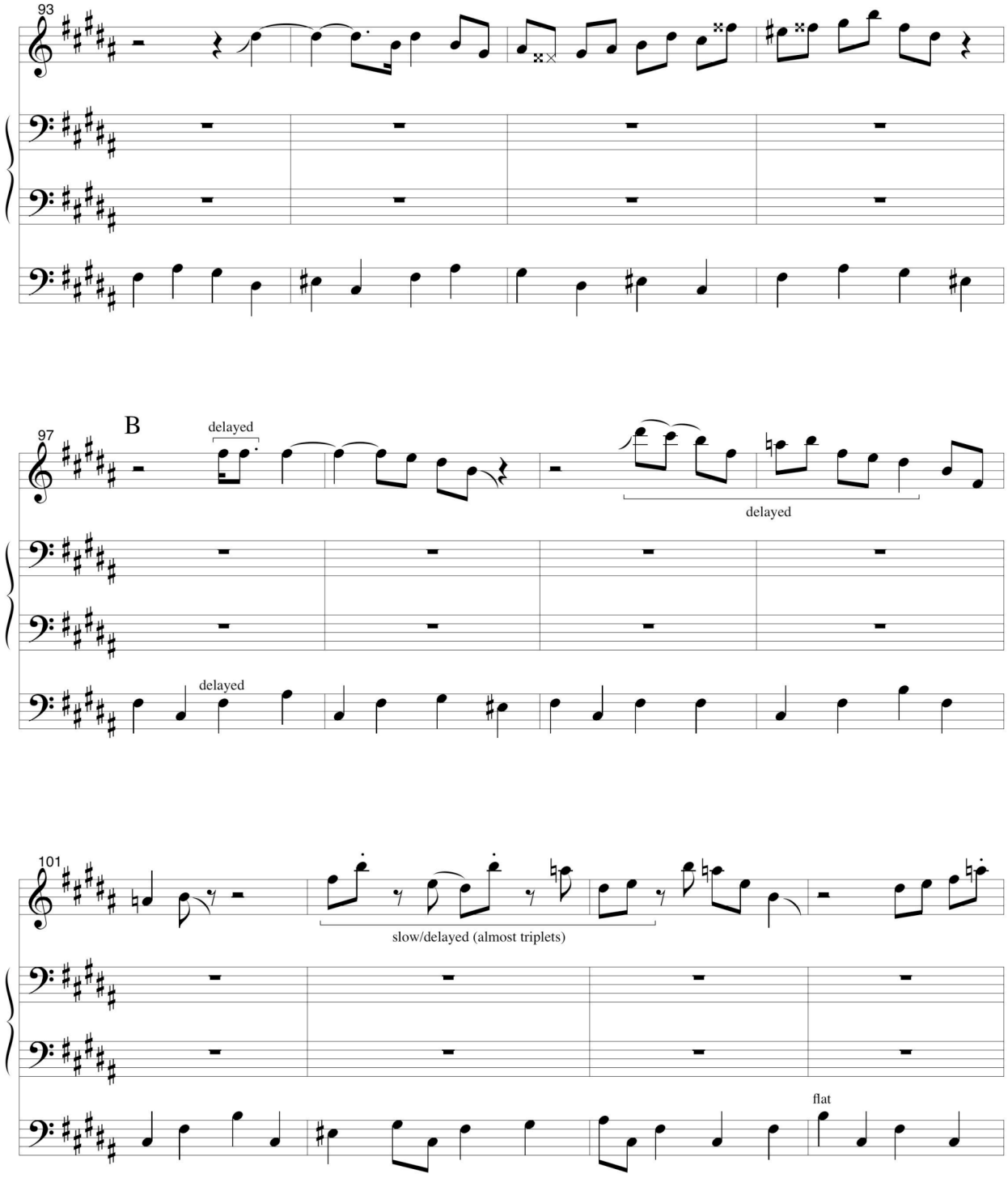

A Rouse, First Chorus
49
3
1 or 2 of the notes G#, A#, or B
are probably not present (similie)

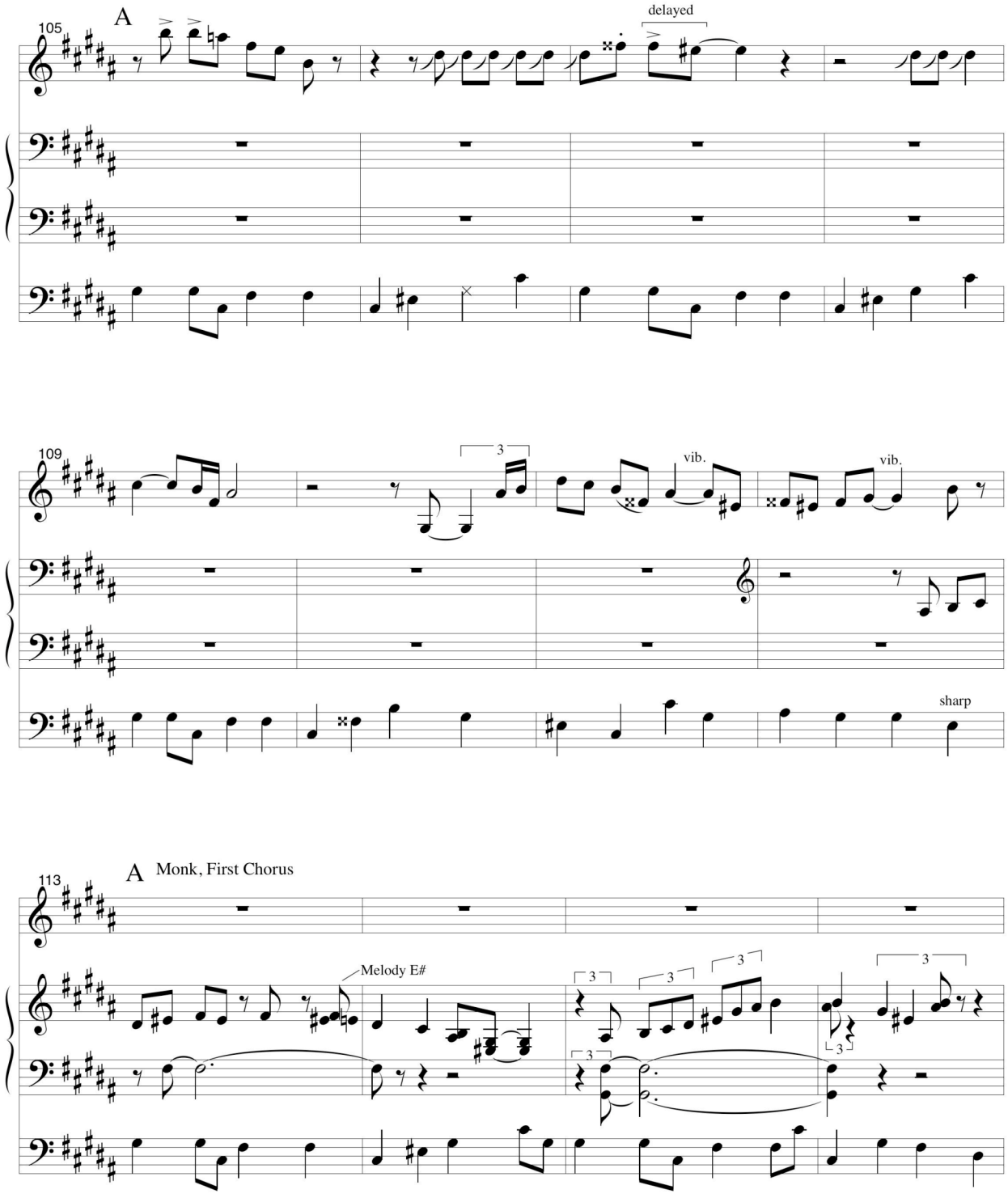

53

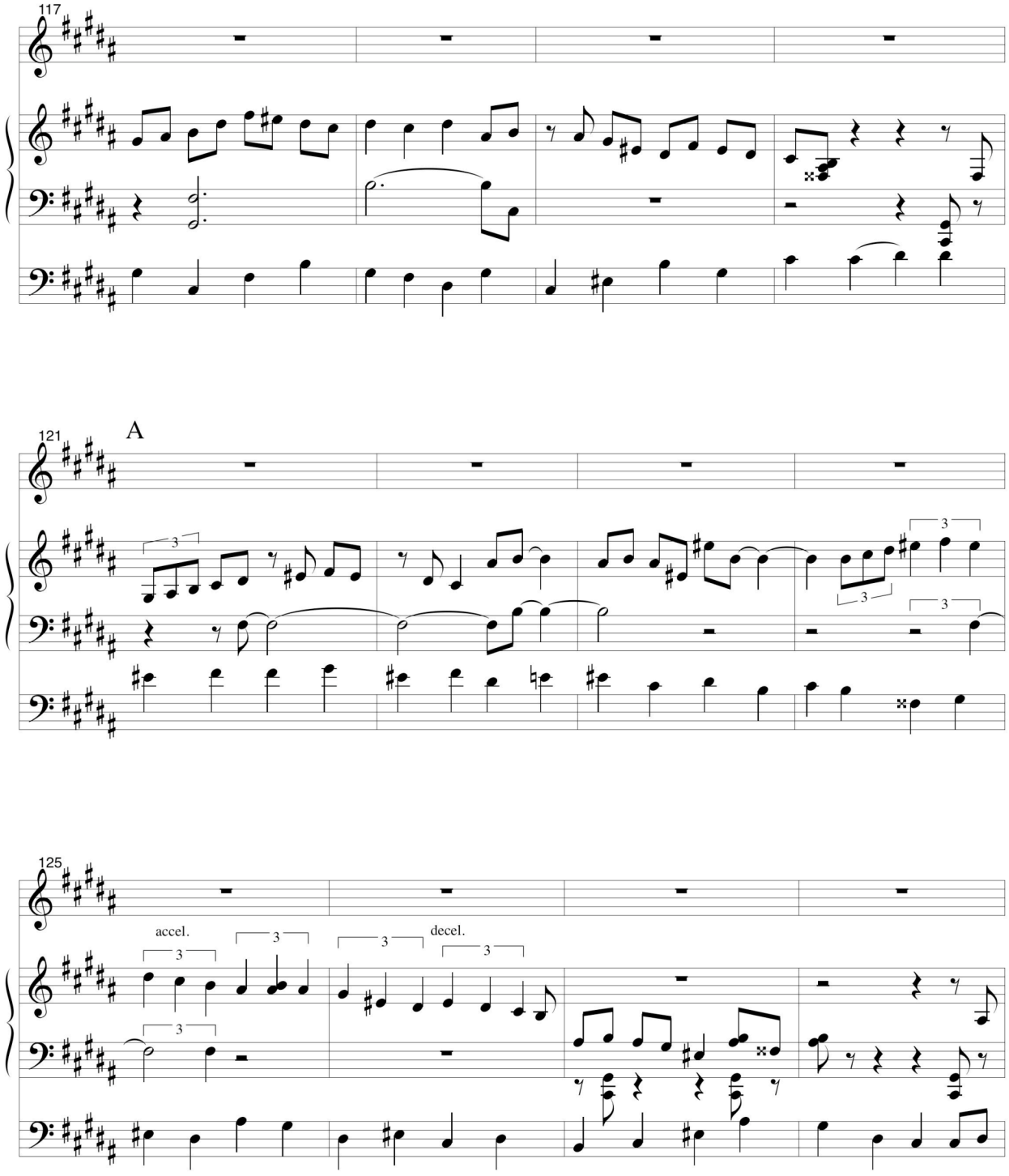

A
57
flat?
61
3
(comping with
clusters continues)
flat
sharp
A
65
sharp

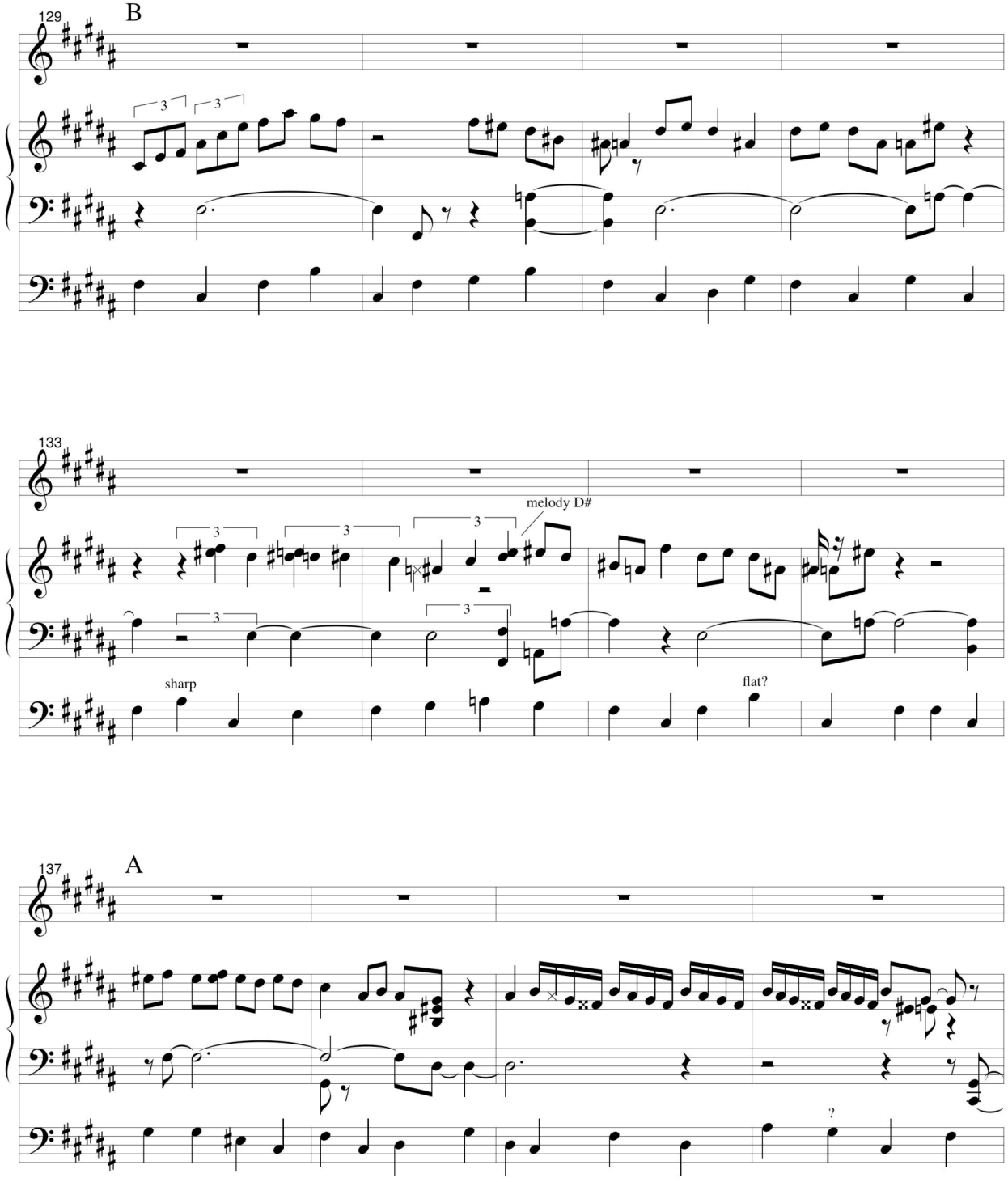

69
A
73
77
sharp

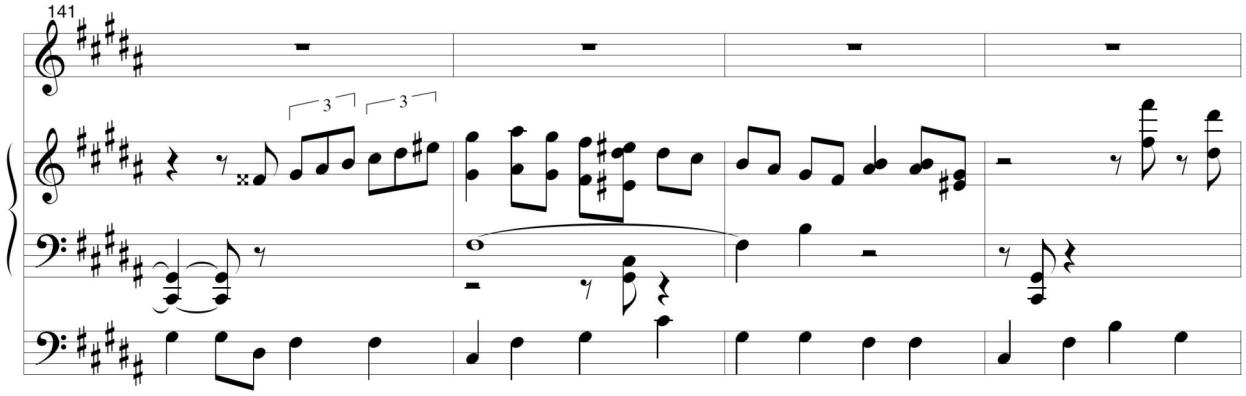

A Second Chorus
81
85
A
89

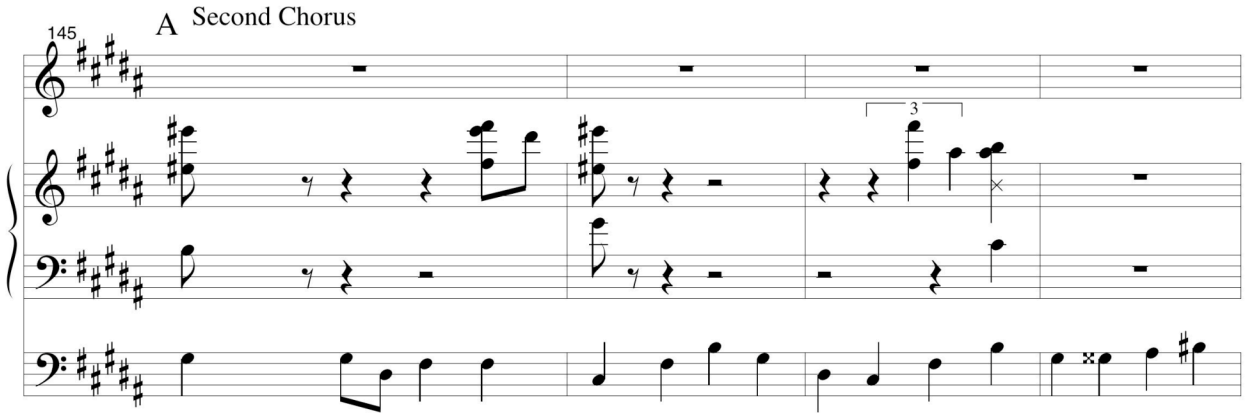

93
B
delayed
97
delayed
delayed
101
slow/delayed (almost triplets)
flat

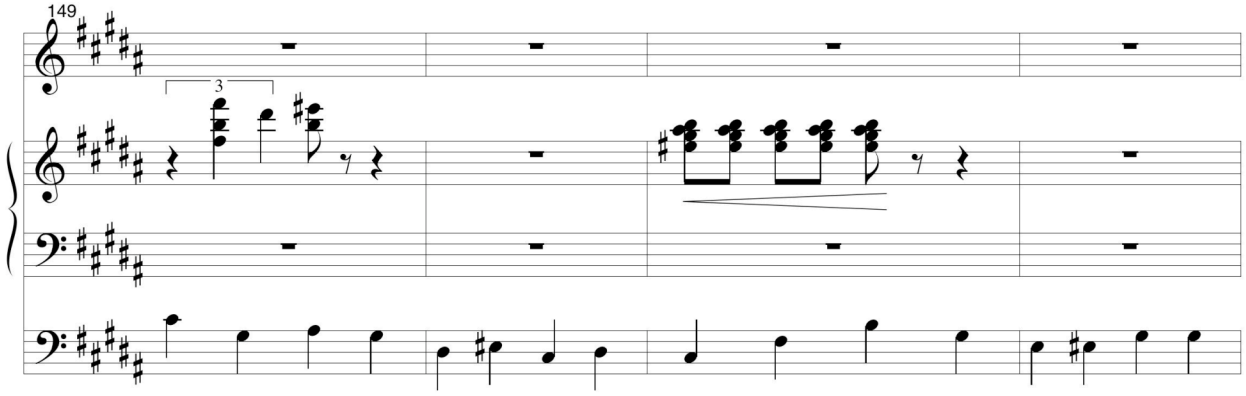

A
105
delayed
109
3
vib.
vib.
sharp
A
Monk, First Chorus
113
Melody E#
3
3
3
3
3
3

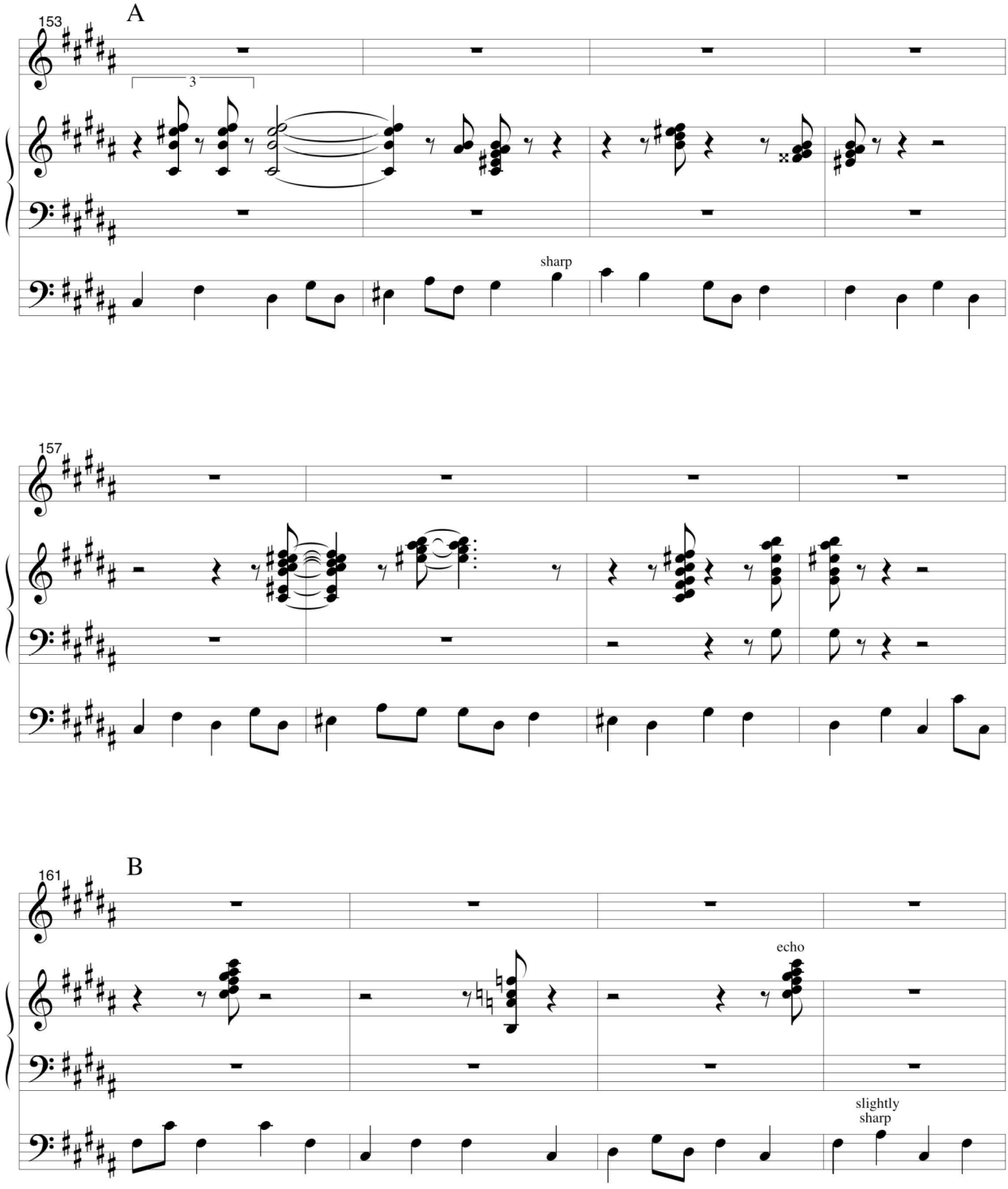

117
121
A
125
accel.
decel.

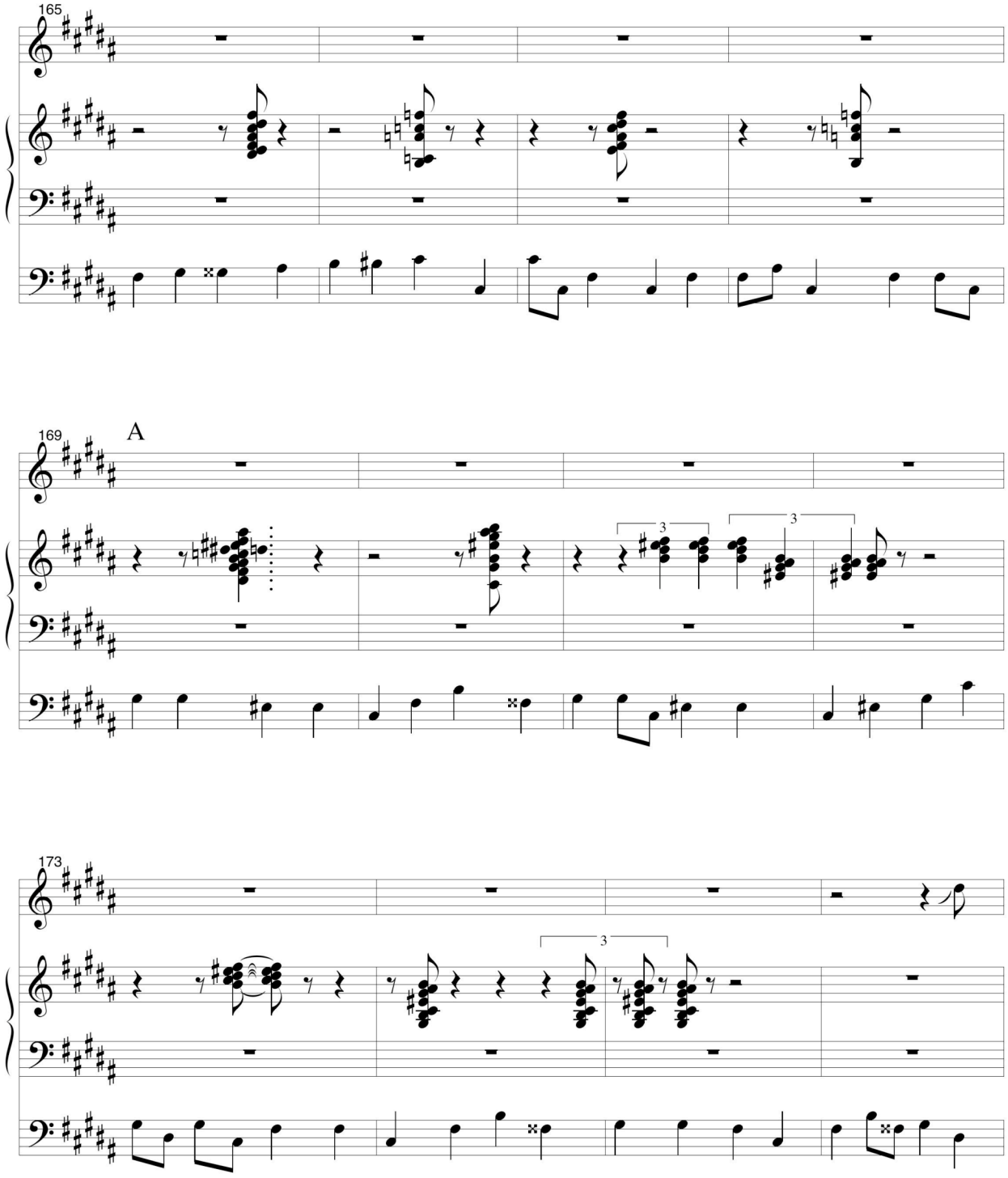

129
B
133
melody D#
sharp
flat?
137
A
?

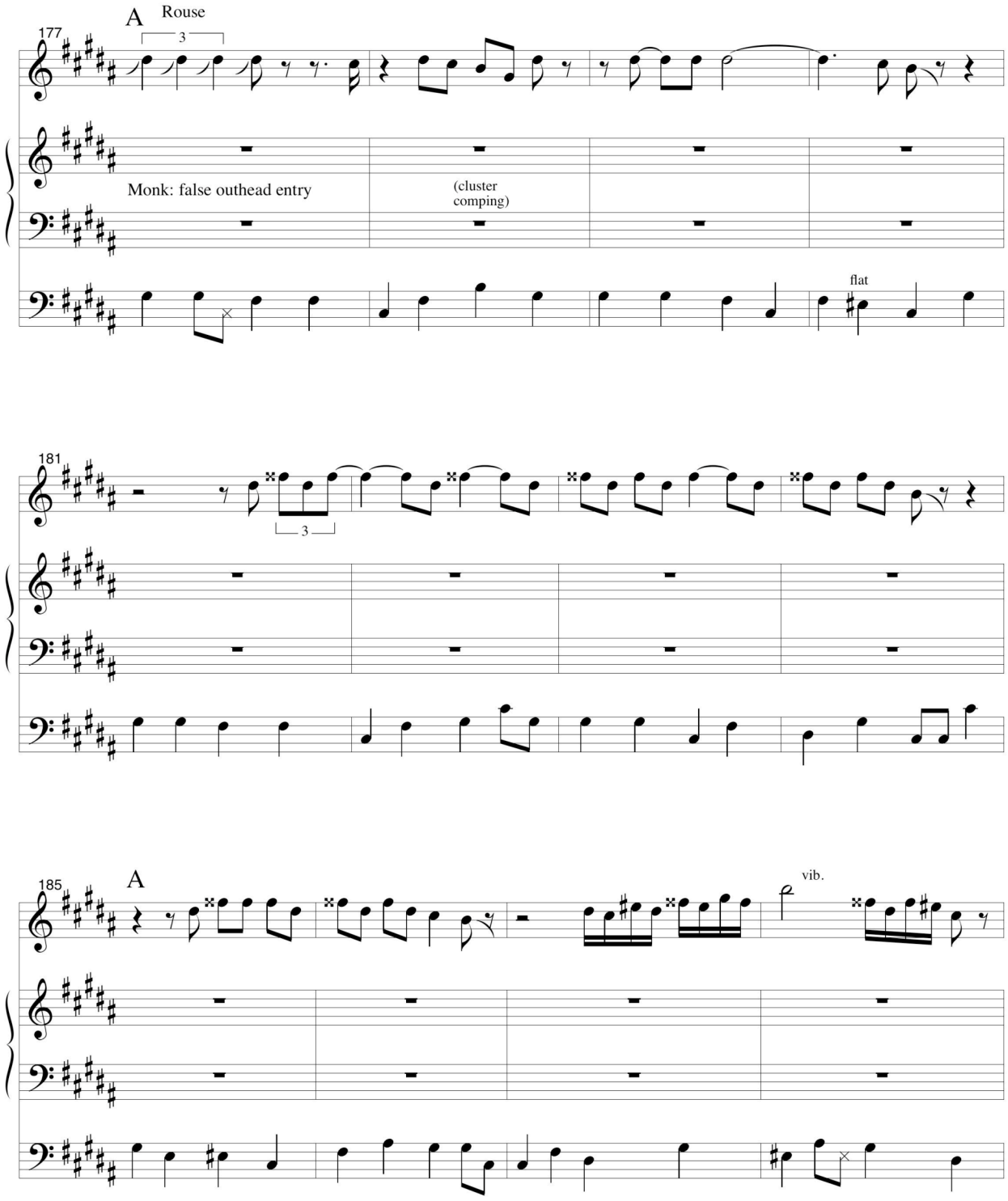

141
3
3

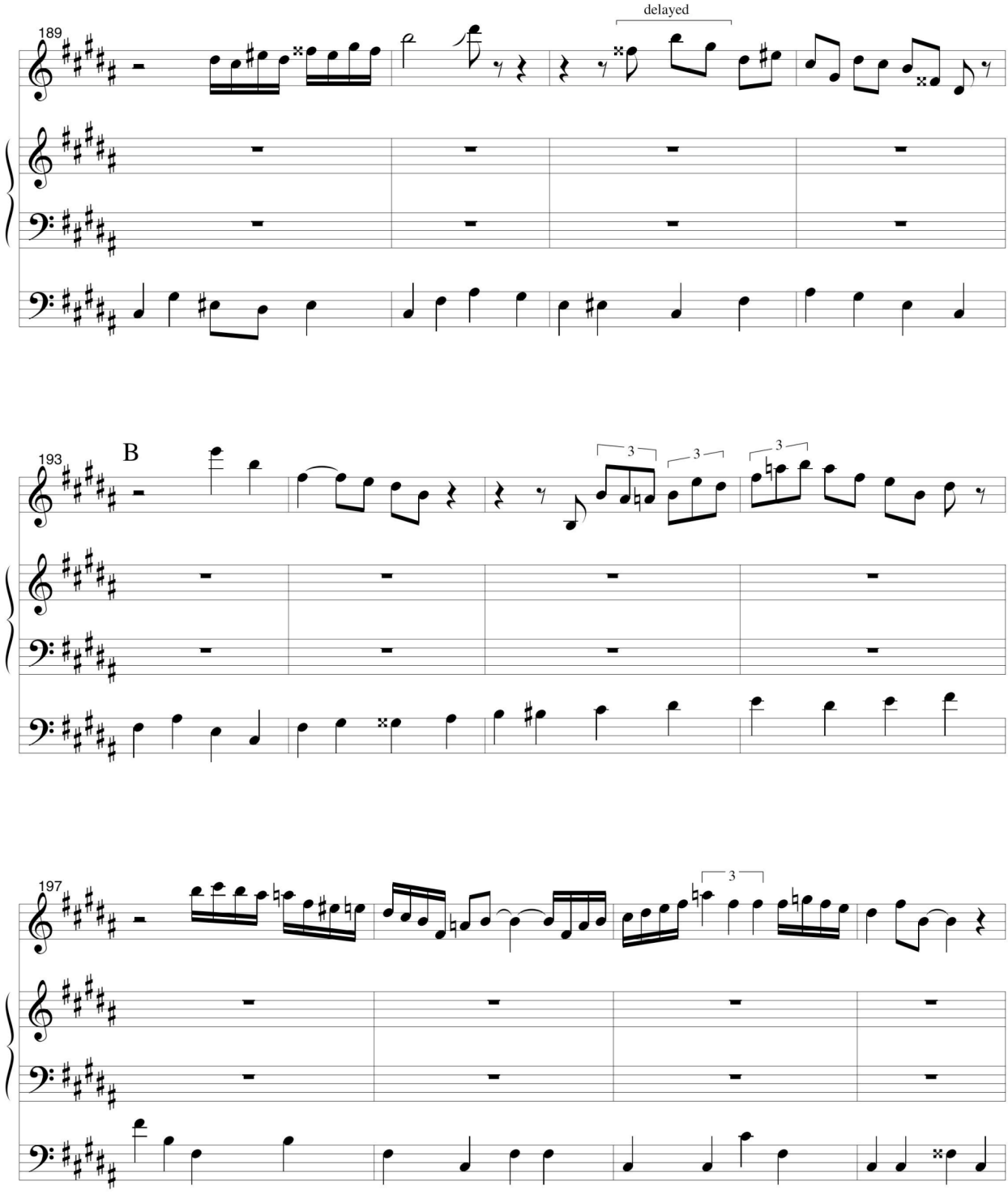

A Second Chorus
145
3

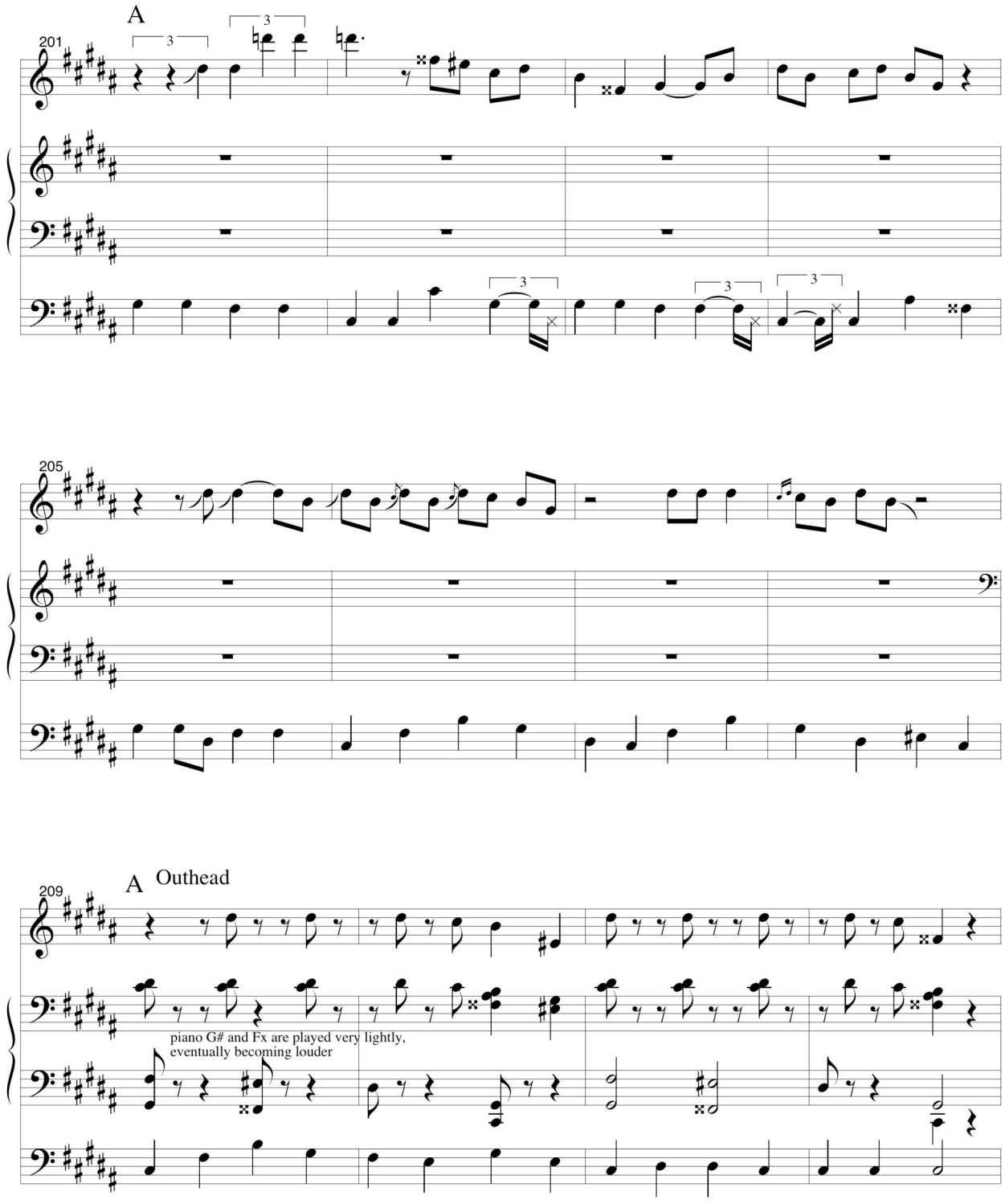

149
3

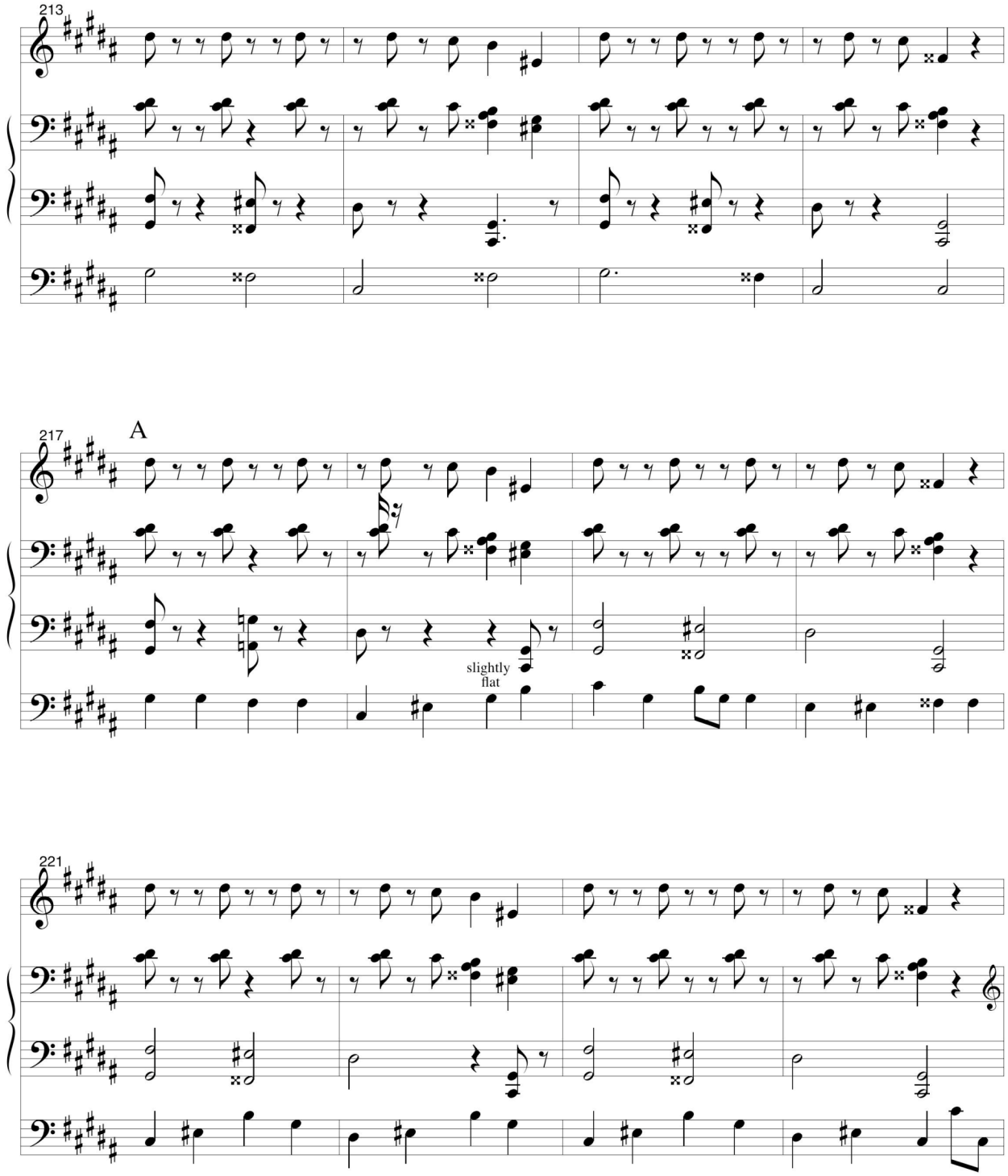

A
153
3
sharp
157
B
161
echo
slightly
sharp

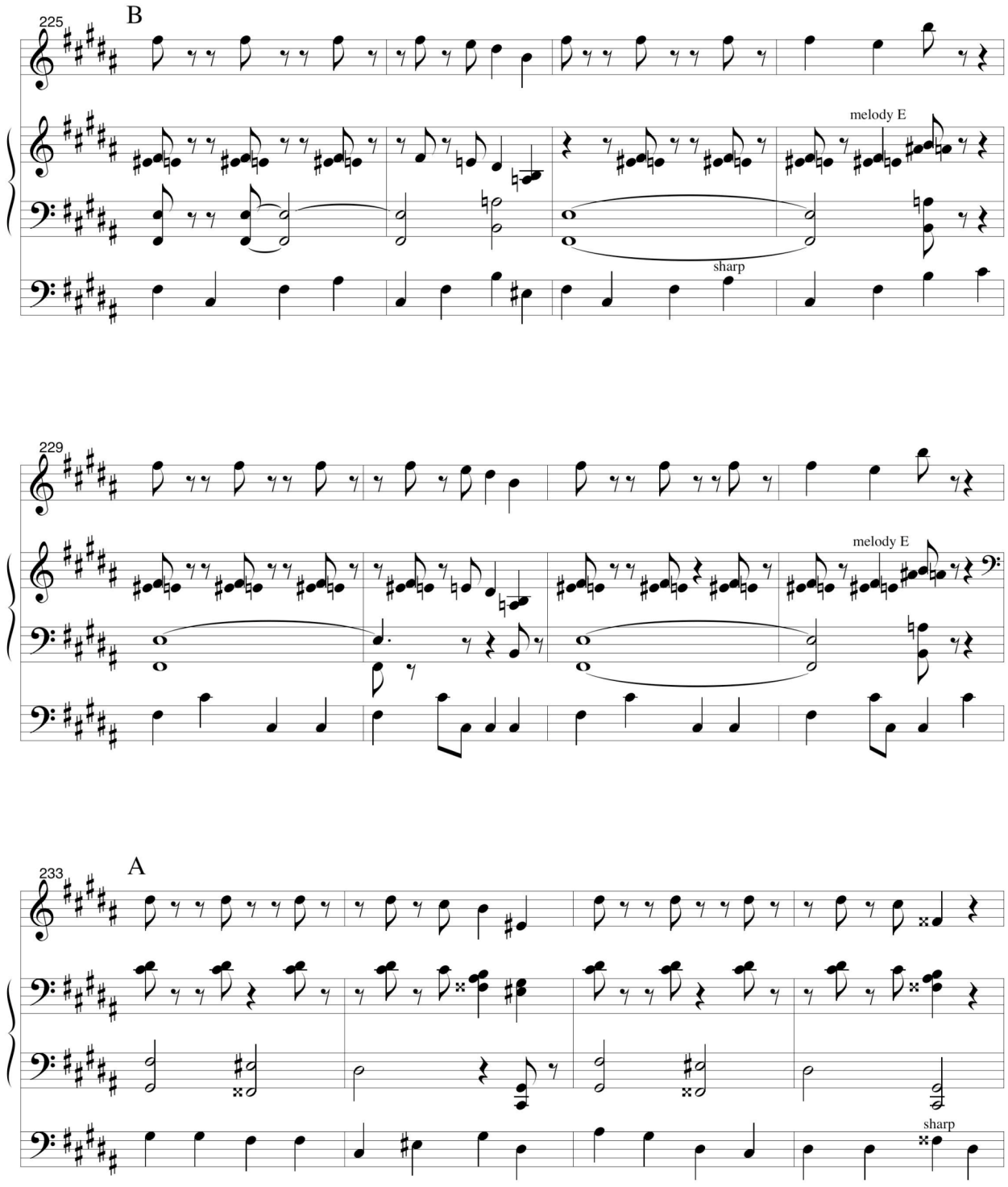

165
169
A
173
3
3
3

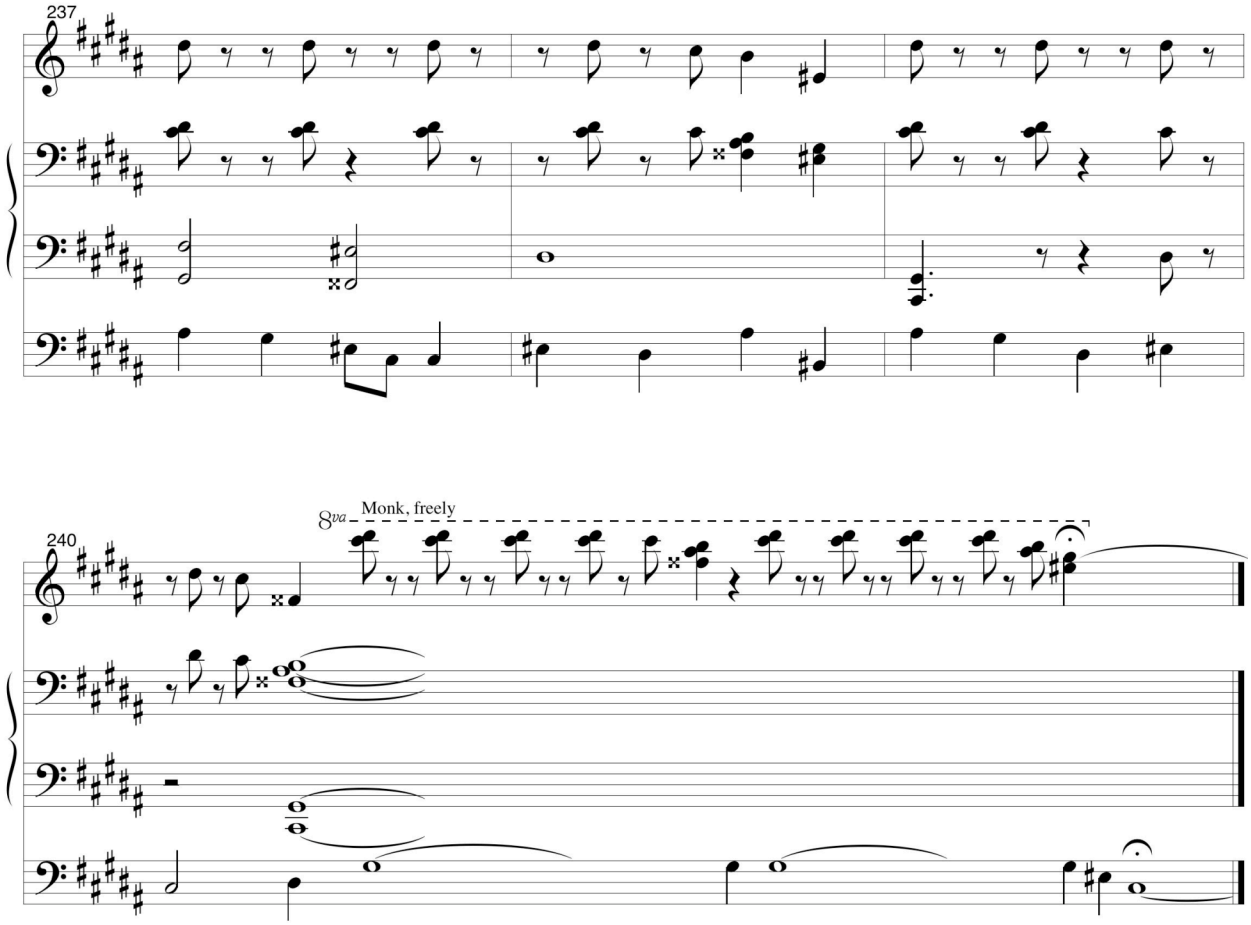

A
Rouse
177
3
Monk: false outhead entry
(cluster
comping)
flat
181
3
A
185
vib.


189
delayed
193
B
3
3
3
197
3


A
201
205
A Outhead
209
piano G# and Fx are played very lightly,
eventually becoming louder


213
A
217
slightly
flat
221


225
B
melody E
sharp
229
melody E
233
A
sharp


237
240
8va
Monk, freely

VITA

Richard Pellegrin was born in Chicago, Illinois. Since 2010, he has been Visiting Assistant Professor of Music Theory at the University of Missouri. Active as a jazz pianist, Pellegrin's debut record, *Three-Part Odyssey*, was released on Origin Records' OA2 label in 2011. He earned the Bachelor of Arts degree in Music from Oberlin College, the Master of Arts degree in Music Theory from Kent State University, and, in 2013, the Doctor of Philosophy degree in Music Theory from the University of Washington.