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Editor's Preface

An Immodest Proposal

> *Why do you study the shell, except to represent to yourself the animal? . . . So do you study the document only in order to know the man.*
>
> —*Hippolyte Taine*

Welcome to *Current Musicology* #66! Because music theory is the (partial) topic of this special issue of our journal, it has provided me with yet another opportunity to think about what a terrible disciplinary designation "music theory" is (my B.M. is in theory so I hope I won't be perceived as throwing stones at a house that is owned entirely by someone else). All is not entirely bleak, however, because it gives me an excuse to again propose what I think would be a good solution to the imbroglio of disciplinary nomenclature.

The extract at the top of this page indicates what I perceive to be the major difference between three of the major scholarly approaches to the study of music. In short: Ethnomusicologists study music in order to better understand people. Historical musicologists generally study people only to better understand music. Music theorists study notation in order to better understand music.

Obviously, these are broad generalizations, and therefore not entirely accurate; nonetheless, this general statement does indeed reflect practice at the most general level. It cannot be denied that conventional scholars of Western cultivated music have generally "forefronted" musical notation, and that the biographical details of a composer's life are of interest to them only insofar as those details have a relatively direct bearing on the music the composer has produced. Music theorists generally have no use for even a composer's biography, so focused is their attention on the musical work (or, more accurately, its notation). As for the lives of performers, instrument makers, piano tuners, music businesspeople, and others involved in music, they receive almost no scholarly attention whatsoever from theorists or even historians.

Another way of saying this is that in an attempt to study the musical work in an ideal, decontextualized state, conventional (historical) musicology and music theory largely exclude the human players in the drama. Ethnomusicologists generally study "the music" as well as the human subjects who are involved in making the music (in fact, some ethnomusicologists may not accept an absolute conceptual distinction between "music" and "musician," even in those cases in which the music has been notated, since many of them tend to see art as an activity). More precisely, it is the study of *people musicking* that constitutes the *discipline* of ethnomusicology.

The aims and methods of the major musicological disciplines are different enough that I would like to propose name changes for the disciplines of musicology. Needless to say, there is absolutely no chance of anyone adopting these suggestions. Nonetheless . . .

Why not call musicologists who tend to study music "in context" "contextual musicologists"? It shouldn't matter whether they're studying Shinto ritual music or rave scenes: if their scholarly interest includes a study of *how and why the music is used,* then they're contextual musicologists. This group would obviously include ethnomusicologists but would also include many musicologists whose focus is the study of some aspect of Western cultivated music.

Contextual musicologists could be divided into those who study contemporary music-making (whether it be of contemporary music or noncontemporary music) and those who study historical music-making. Historical contextual musicologists ("historical musicologists"?) and contemporary contextual musicologists ("contemporary musicologists"?) share an interest in context but differ considerably in their research methods. A scholar who studies historical performances of *gagaku* presumably uses many of the same textual research methods as a scholar who studies Palestrina, but the methods of both are significantly different from those who are doing "contemporary" work (say, researching Beethoven reception in modern-day San Francisco or doing fieldwork with rap groups) which both enables and requires the researcher to interact with living people.

There are also musicologists who don't care to study music's role in society. Music "theorists" (terrible name!) generally fall into this group. Why not call them "acoustical musicologists" if they are generally concerned with only the sonic event? And how about calling those theorists who study scores to the usual exclusion of musical sound "notational musicologists"?

Any takers?

* * *

The contents of this special issue address musical topics both theoretic and computer-related. Jonathan Kramer examines the nature and origins of musical postmodernism; Greg Marion tackles Debussy's *Brouillards* with a host of analytical strategies, in which he "engages . . . concerns commonly associated with the fields of postmodern literature, perceptual psychology, and cultural criticism"; and Davy Temperley contends that too many music theorists have not clearly articulated whether their theories are "suggestive" or descriptive.

In addition, we are pleased to present a Columbia Report about the university's Computer Music Center, written by Director Brad Garton, as well as three book reviews (two on music theory topics and one on computer music).

Thanks are due the authors, the referees, and the editors (particularly Rebecca Kim, Maryam Moshaver, and Mark Burford) for making this special issue possible. Thanks are also due Dieter Christensen, Elaine Sisman, and the rest of *Current Musicology*'s Advisory Board. Finally, thanks once again to Joyce Tsai. Enjoy!

—DNT

articles

The Nature and Origins of Musical Postmodernism

By Jonathan D. Kramer

The Postmodern Attitude

Postmodernism is a maddeningly imprecise musical concept. Does the term refer to a period or an aesthetic, a listening attitude or a compositional practice? Is postmodern music still seeking to define itself, or has its time already passed? Does postmodernism react against or continue the project of modernist music? Is it a positive or a negative force? Is postmodern music original, or does it recycle older music? How widespread is it? Why does postmodernism seem to embrace many cultural values previously thought to be inimical to successful art and even to simple good sense? Is postmodern art serious or frivolous?

And, simply, what is postmodernism? For some critics, postmodernism's defining compositional practice is its deliberate attempt to reach out by using procedures and materials that audiences are believed to relish: diatonicism, singable melodies, metric regularity, foot-tapping rhythms, tonality, and/or consonant harmonies. Nostalgia for the good old days of tunes and tonality, however, is actually opposed to certain strains of postmodernism. It is not so much postmodernist as antimodernist.[1] There is a significant difference between these two aesthetics: antimodernist yearning for the golden ages of classicism and romanticism perpetuates the elitism of art music, while postmodernism claims to be anti-elitist.[2] An important first step in understanding musical postmodernism, therefore, is to divorce it from nostalgic artworks. Only in antimodernist music (such as the flute concertos of Lowell Lieberman, George Rochberg's *Ricordanza* and Viola Sonata, and Michael Torke's piano concerto *Bronze*) is the use of traditional sonorities, gestures, structures, and procedures tantamount to a re-embracing of earlier styles. In contrast to such compositions, postmodernist music is not conservative. Compositions such as Zygmunt Krauze's Second Piano Concerto, John Adams's Violin Concerto, Henryk Górecki's Third Symphony, Alfred Schnittke's First Symphony, George Rochberg's Third Quartet, Steve Reich's *Tehillim,* John Corigliano's First Symphony, Bernard Rands's . . . *body and shadow* . . . ,[3] and Luciano Berio's *Sinfonia* do not so much conserve as radically transform the past, as—each in its own way—they simultaneously embrace and repudiate history.

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Many reviewers of the popular press do not distinguish antimodernism from postmodernism. They identify as postmodern any composition that was written recently but sounds as if it were not. Many composers who use the term are not much more enlightened than the reviewers. Most composers I know use "postmodernism" in the corrupted sense of the press, in feigned or real or willful ignorance of the thinking of critical theorists such as Eco or Lyotard. Yet the ideas of such writers are relevant to today's postmodern music.

A more subtle and nuanced understanding of postmodernism emerges once we consider it not as a historical period but as an attitude—a current attitude that influences not only today's compositional practices but also how we listen to and use music of other eras. Umberto Eco has written tellingly, "Postmodernism is not a trend to be chronologically defined, but, rather, an ideal category or, better still, a *Kunstwollen,* a way of operating. We could say that every period has its postmodernism."[4] Jean-François Lyotard suggests a still more paradoxical view of the chronology of postmodernism: "A work can become modern only if it is first postmodern. Postmodernism thus understood is not modernism at its end but in the nascent state, and this state is constant" (1984: 79). Lyotard seems to believe that before a work can be understood as truly modern, it must challenge a previous modernism. Thus, to take Lyotard's example, Picasso and Braque are postmodern in that their art goes beyond the modernism of Cézanne. Once their art has achieved this postmodern break with the past, it becomes modernist. Similarly, certain music (discussed below) of Mahler, Ives, and Nielsen, for example, becomes postmodern by going beyond the modernist practices of such composers as Berlioz, Liszt, and Wagner.

Postmodern Views on Unity, Intertextuality, and Eclecticism

Beyond the relevance (or lack thereof) of the critical theories of Eco, Lyotard, and others, one other thing that distinguishes antimodernism from postmodernism is the attitude toward the notion of musical unity, cherished by traditionally minded composers as well as by critics, theorists, and analysts.[5] For both antimodernists and modernists, unity is a prerequisite for musical sense; for some postmodernists, unity is an option. I believe that unity is not simply a characteristic of music itself but also a means of understanding music, a value projected onto music. As such, it is necessarily demoted from its previous position of universality. It is no longer a master narrative of musical structure. Many postmodern composers have accordingly embraced conflict and contradiction and have at times eschewed consistency and unity.[6] Similarly, postmodern audiences do not necessarily search for or find unity in the listening experience.

They are more willing to accept each passage of music for itself, rather than having—in accordance with the strictures of modernist analysis and criticism—to create a single whole of these possibly disparate parts.

Freed from the dictates of structural unity, some of today's postmodern music offers its listeners extraordinary discontinuities that go beyond contrast, variety, consistency, and unity. Such pieces as John Zorn's *Forbidden Fruit* and William Bolcom's Third Symphony, for example, continually challenge their boundaries by redefining their contexts. References to musical styles of any era or of any culture can intrude, possibly unexpectedly. Of course, some modernist (and earlier) music also includes unexpected quotations. One need only recall the sudden appearances of *Tristan und Isolde* in Debussy's *Golliwog's Cakewalk* and in Berg's *Lyric Suite* to understand that quotation and surprise are not the exclusive province of postmodernist composers. Such examples demonstrate one way among several that postmodernism does not necessarily contradict but rather extends ideas of modernism. Intertextuality has become more pervasive as postmodernism has become more widespread: the references in the Zorn and Bolcom works are far more extensive than the isolated Wagner quotations in the Debussy and Berg pieces.

Furthermore, there is a difference in perspective between modernist and postmodernist quotation. Modernist composers often want to take over, to own, to demonstrate their mastery of that which they are quoting, either by placing it in modernist contexts or by distorting it. Postmodernists are more content to let the music they refer to or quote simply be what it is, offered with neither distortion nor musical commentary.[7] Hence postmodern music readily accepts the diversity of music in the world. It cites—in fact, appropriates—many other musics, including that of modernism. In a sense it challenges the notion of the past, since it may include references to music of virtually any era or culture. Wide-ranging quotations are readily included in postmodern works and are easily understood by postmodern listeners because—thanks to recording technology—music of all times and places can be a living force for composers and listeners alike.

Long before postmodernism was widely recognized, and long before recording technology brought distant musics into the present, there were pieces that juxtaposed styles. How does the eclecticism of such music as Ives's *Three Places in New England,*[8] Mahler's Seventh Symphony,[9] or Nielsen's *Sinfonia Semplice,*[10] for example, differ from that of the 1980s and '90s? It is tempting to understand such earlier works as precursors of (but not necessarily formative influences on) today's postmodernism—somewhat as early repetitive works, such as Ravel's *Bolëro* or the first movement of Shostakovich's *Leningrad Symphony,* can be understood in retrospect as

precursors of minimalism.[11] But there is a more intriguing way to view pieces like those of Ives, Mahler, and Nielsen: they are not so much proto-postmodern as they are actually postmodern—by which I mean not only that they exhibit postmodern compositional practices but also that they are conducive to being understood in accordance with today's postmodernist musical values and listening strategies.

Characteristics of Postmodern Music

Naming music that is nearly a hundred years old "postmodern" is not willfully perverse but rather is a consequence of viewing postmodernism more as an attitude than as a historical period. This antihistorical stance results in a blurring of rigid distinctions among modernism, postmodernism, and antimodernism, resulting in the term "postmodernism" resisting rigorous definition. Attitudes toward structural unity, intertextuality, and eclecticism, as explained in the previous section, further problematize attempts to demarcate the word's meaning. Despite such complications, however, it is possible to enumerate characteristics of postmodern music —by which I mean music that is understood in a postmodern manner, or that calls forth postmodern listening strategies, or that provides postmodern listening experiences, or that exhibits postmodern compositional practices.[12] It

1. is not simply a repudiation of modernism or its continuation, but has aspects of both a break and an extension
2. is, on some level and in some way, ironic
3. does not respect boundaries between sonorities and procedures of the past and of the present
4. challenges barriers between "high" and "low" styles
5. shows disdain for the often unquestioned value of structural unity
6. questions the mutual exclusivity of elitist and populist values
7. avoids totalizing forms (e.g., does not want entire pieces to be tonal or serial or cast in a prescribed formal mold)
8. considers music not as autonomous but as relevant to cultural, social, and political context
9. includes quotations of or references to music of many traditions and cultures
10. considers technology not only as a way to preserve and transmit music but also as deeply implicated in the production and essence of music
11. embraces contradictions
12. distrusts binary oppositions
13. includes fragmentations and discontinuities

14. encompasses pluralism and eclecticism
15. presents multiple meanings and multiple temporalities
16. locates meaning and even structure in listeners, more than in scores, performances, or composers.

Not many pieces exhibit all these traits, and thus it is futile to label a work as exclusively postmodern. Also, I would find it difficult to locate a work that exhibits none of these traits. I caution the reader, therefore, against using these sixteen traits as a checklist to help identify a given composition as postmodern or not: postmodern music is not a neat category with rigid boundaries.

Postmodernism and History

If postmodernism were simply a period, it would be reasonable to search for its origins in earlier times and to understand it as a reaction to and/or a refinement of aesthetic ideas of previous periods. But postmodernism taken as an attitude suggests ways listeners of today can understand music of various eras. It is in the minds of today's listeners, more than in history, that we find clues to the sources of postmodernism. It comes from the present—from ourselves—more than from the past. Music has become postmodern as we, its early-21st-century listeners, have become postmodern.

To look for historical precedents leading toward postmodernism would be to accept the idea of historical progress, which postmodernists challenge. The literature on postmodernism is full of statements about the death of history, but it is not necessary to go to the extreme of seeing our age as posthistorical in order to understand the uneasy relationship between postmodernism and progress. Postmodernism questions the idea that, if one artwork was created after another, the earlier one may have—or even could have—caused or uniquely influenced the creation of the later one. Every artwork reflects many influences, some from its past, some from its present cultural context, some from its creator's personality, and even some from its future (as subsequent generations come to discover or invent new ways to understand it).

Although they reject the linearity of historical progress, postmodern artworks regularly quote from history. How can we understand such a paradox? How can postmodernism both repudiate and use history? Since, as mentioned above, the quotations and references in postmodern music are often presented without distortion, without commentary, and without distancing, composers treat them just as they might use citations of the present. If a musical style of two hundred years ago is employed in the same way—with the same degree of authenticity (i.e., composed as it was when

it was current) and belief (in its viability as a vehicle for musical expression) —as is a newly developed style, then history is indeed challenged. As the past becomes the present, the concept of historical progress becomes problematic.

The avant-gardists of early modernism (such as Luigi Russolo, Satie, Cowell, and Varèse) sought to escape history, but were hopelessly trapped in the continuity of historical development.[13] To see themselves on the cutting edge, such avant-gardists (and also early modernists like Schoenberg, Webern, and Stravinsky) had to accept history as linear progress. But recent postmodern composers have moved away from the dialectic between past and present that concerned these early avant-gardists and modernists and that continued to plague their mid-century descendants, such as Boulez, Stockhausen, Nono, Cage, Carter, and Babbitt. Because they recognize history as a cultural construct, postmodernists (such as Aaron Kernis, John Tavener, Paul Schoenfield, and Thomas Adès) can enter into a peaceful coexistence with the past, instead of confronting it as latter-day modernists do. For postmodernists, "history is recast as a process of rediscovering what we already are, rather than a linear progression into what we have never been."[14]

The situation for modernists was and is oedipal: they are in conflict with their antecedents, whom they reinterpret in order to possess, shape, and control their legacy. Modernists sought to displace the major figures in their past because they were in competition with them despite their owing their very (artistic) existence to them. Influence was a critical issue for modernists.[15] Postmodernists, however, are more like adolescents than like children: they have passed beyond their oedipal conflicts with their modernist parents, although they may still have an uneasy relationship with them (thus, postmodernists may accept historical succession even while rejecting the idea of progress). Postmodernists like to feel that they can be whatever they wish. Their music can happily acknowledge the past, without having to demonstrate superiority to it. Postmodern composers understand that their music is different from that of modernism, but they can nonetheless include modernist (and earlier) styles without having to make them something other than what they were or to relegate them to the inferior status of historical artifacts. But, like adolescents, they can maintain ambivalent feelings toward the modernists whom they view as parents. If these attitudes of postmodernists seem naïvely utopian, that quality is certainly consonant with their adolescent nature.[16]

Can we really dismiss history to the extent that we do not look for the origins of the very attitudes that try to turn us away from the concept of the past? We may be willing to accept postmodernism because it exists, but we are also aware that there were times when it did not exist.[17] What hap-

pened? What changed? To the limited extent that postmodernism had causes,[18] we should look to recently developed (or at least recently accepted) ideas, perhaps more pervasive in the United States than elsewhere, in order to understand its musical origins. I say this in full realization that I have posited postmodernism in music as far back as that of Ives and Mahler, and believe that there are embryonic postmodernist ideas that can be found in (or projected onto) certain music by Berlioz, Beethoven, and Haydn. However, since I regard postmodernism as an attitude more than as a historical period, and since I believe that an important aspect of that attitude is the placement of meaning in the listener, it is reasonable to suggest that postmodernism did begin rather recently and subsequently spread to the past as listeners of today began to find postmodern meanings in music from earlier periods.

The best place to search for the origins of musical postmodernism is not, therefore, in the history of music. It is wrongheaded to look to those pre-contemporary works I have called postmodernist for influences on today's postmodern attitudes or for sources of the kind of postmodernist thinking that has recently become widespread. Postmodernism is a recent phenomenon. It is only now—once it exists, has been experienced, and is to some degree assimilated and understood—that it makes sense to listen to music like Ives's *Putnam's Camp,* Mahler's Seventh Symphony, or Nielsen's *Sinfonia Semplice* in a postmodern manner. But those works and others like them are not the sources of postmodernism.

The Origins of Postmodernism in Contemporary Culture

One source of today's postmodernism, not surprisingly, is the psychological and sociological tenor of our technology-saturated world. Technology has created a context of fragmentation, short attention spans leading to constant discontinuities, and multiplicity—all characteristics not only of contemporary society but also of postmodern thinking. In his book *The Saturated Self,* psychologist Kenneth J. Gergen offers insights into the psychological dimensions of postmodernism. Gergen traces the changing concepts of the self from the Romantic age (when each person was thought to possess depth of passion, soul, and creativity) through the modernist age (which particularly valued logic, rationality, and conscious intentions) to the current era of postmodernism, which is characterized by "social saturation" (1991: 6).

By "social saturation" Gergen means the condition in which we continually receive messages of all sorts, coming (often electronically) from many corners of the globe, all competing for our attention and involvement. There is no time to reflect, no time to savor, no time for contemplation, no time for depth. Conflicting claims on our attention, as well as constant

bombardment with information, lead to the fragmented sensibility associated with postmodern attitudes. Gergen writes:

> The postmodern condition . . . is marked by a plurality of voices vying for the right to reality—to be accepted as legitimate expressions of the true and the good. As the voices expand in power and presence, all that seemed proper, right-minded, and well understood is subverted. In the postmodern world we become increasingly aware that the objects about which we speak are not so much 'in the world' as they are products of perspective. Thus, processes such as emotion and reason cease to be real and significant essences of persons; rather, in the light of pluralism we perceive them to be imposters, the outcome of our ways of conceptualizing them. Under postmodern conditions, persons exist in a state of continuous construction and reconstruction; it is a world where anything goes that can be negotiated. Each reality of self gives way to reflexive questioning, irony, and ultimately the playful probing of yet another reality. (1991: 7)

Gergen's concept of the saturated self resonates with my own experiences. In a given afternoon, I may find myself sitting in my office, communicating via e-mail or fax with professional colleagues in London and Perth, advising former students in Warsaw and Taipei, and carrying on personal correspondence with friends in Evanston and San Diego. I may then turn my attention to some journal articles and books, which are rarely read through in their entirety and several of which I find myself studying more-or-less simultaneously. I may receive phone calls (or messages on my voice mail) from faraway colleagues, old friends, prospective students, performers who are rehearsing my music in distant cities, someone who wants me to do a guest lecture. Each phone call picks up a continuity broken off hours, days, weeks, or even years ago, or else initiates a relationship to be continued in the future. These activities, which continually intrude upon one another, may in turn be interrupted by a knock on my door. A student in need of help? A textbook publisher's representative wanting to convince me to use a certain book in my harmony class? A workman wanting to fix my air conditioner? All of this, and some days still more, within the space of two or three hours! Fragmentation. Discontinuity. Lack of connection. Lack of linear logic. Postmodernism.[19]

Since technology allows me to stay in contact with people I know in many different contexts and those I knew in many periods in my past, the past in a certain sense is no longer as remote as it would have been had I lived before telephones, e-mail, faxes, airplanes, cars, or trains. Two hundred years ago people moved around a lot less and maintained far fewer

contacts than they do today. When someone moved from one community to another, acquaintances were lost, relegated to memory and imagination. Not necessarily so today. I am in touch with my first friend (from kindergarten), my high school buddies, my college roommate, my grad school colleagues, many of my former teachers and students, and people I have met lecturing in several countries. My past lives not only in memory but also through contacts in my present.[20] My friends may get older and change, but they are still the same friends. Their identity keeps our shared past alive (although their aging makes me more acutely aware of time's passage than I might have been had I continually traded my friends for newer ones).

The blurring of the distinction between past and present is one postmodern cultural value that is reflected in postmodern music. There are others. Gergen cites as results of social saturation an increasing sense of pastiche and otherness (similar to the way postmodern music refers to or quotes other music). Intertextuality is not solely a condition of postmodern literature or music, but also of the postmodern self. People come into contact with so many other people, with divergent personalities and values, that the self is constantly in flux, always bending under the influence of others.

> As social saturation proceeds we become pastiches, imitative assemblages of each other. In memory we carry others' patterns of being with us. Each of us becomes the other, a representative, or a replacement. To put it more broadly, as the century has progressed selves have become increasingly populated with the characters of others. (1991: 71)

Other aspects that social saturation shares with postmodern art are multiplicity and disunity. Gergen again:

> Increasingly we emerge as the possessors of many voices. Each self contains a multiplicity of others. . . . Nor do these many voices necessarily harmonize. . . . Central to the modernist view was a robust commitment to an objective and knowable world. . . . [Yet] as we begin to incorporate the dispositions of the varied others to whom we are exposed, we become capable of taking their positions, adopting their attitudes, talking their language, playing their roles. In effect, one's self becomes populated with others. The result is a steadily accumulating sense of doubt in the objectivity of any position one holds. (1991: 83–85)

Robert Morgan has written perceptively on how social forces can shape postmodern music:

> The plurality of styles, techniques, and levels of expression appears both plausible and meaningful in a world increasingly shedding its common beliefs and shared customs, where there is no longer a single given 'reality' but only shifting, multiple realities, provisionally constructed out of the unconnected bits and pieces set loose by a world stripped of all attachments. If traditional tonality . . . adequately reflected a culture characterized by a community of purpose and well-developed system of social order and interpersonal regulation, its loss, and the musical atomization that has ensued, reflects a fragmented and defamiliarized world of isolated events and abrupt confrontations. (1992: 58)

Why Today's Composers Write Postmodern Music

I would not argue that social saturation, however potent a force in contemporary Western societies, inevitably leads to the creation of postmodern art. There is always the possibility of protest. Some (indeed, many!) may find social saturation to be alienating, and seek antidotes or alternatives or escapes. The persistence of modernism in the arts—and the antimodern resurgence of traditionalism—can be understood in part as a resistance to social saturation. But the forces that are transforming the self from a modernist to a postmodernist entity are undeniable. That some artists should create works expressive of a saturated personality, whether by intention or not, is hardly surprising. Composers, like others who live in a saturated society, may have personalities shaped in part by their social contexts. The same is true of listeners who, immersed in postmodern social values, find meaningful resonance in musical compositions that reflect postmodern attitudes and practices.

Uncritically adopting or thoroughly repudiating postmodern values are not the only possible responses of early-21st-century composers to a socially saturated culture. Some composers—probably more Europeans, steeped as they tend to be in dialectical thinking, than laid-back, naïvely utopian Americans—enter into a struggle with postmodern cultural forces. It is beyond the scope of this brief article, however, to probe the manner in which the music of certain composers (such as Bernd Alois Zimmermann and Louis Andriessen) dialectically grapples and contends with postmodernist ideas, rather than simply accepting or rejecting them.

Various composers respond differently to their postmodern culture. Whether they accept, deny, or do battle with postmodernism, it is an undeniable force. Even those who embrace it outright may do so for a variety

of reasons. It is appropriate, therefore, to conclude this essay by enumerating some of the reasons today's composers are drawn to postmodern values in their society.

1. Some composers react against modernist styles and values, which have become oppressive to them.
2. Some composers react against the institutionalism of modernism—against, in other words, its position of power within the musical establishment, particularly in the United States, Germany, France, England, and Italy.
3. Some composers respond to what they see as the cultural irrelevance of modernism.
4. Some composers (antimodernists as well as postmodernists) are motivated by a desire to close the composer-audience gap, created —they believe—by the elitism of modernism.
5. Some young composers are uncomfortable with pressures from their teachers to like and respect one kind of music (tonal) yet write another (atonal).[21] Like adolescents in the world of postmodernism, they rebel against the values they learn in school. They want to create the music they love, not that which they are told to love.
6. Some composers today know and enjoy popular music. While there were always "classical" composers who liked pop music, nowadays some composers who appreciate it (such as Steve Martland and Michael Daugherty) see no reason to exclude it from their own stylistic range—a further instance of composing what they love, regardless of its respectability.
7. Some composers are acutely aware that music is a commodity, that it is consumable, and that composers are inevitably part of a materialist social system. Such composers understand postmodernism as an aesthetic whose attitudes and styles reflect the commodification of art. They see postmodern music as concerned with, rather than ignoring (as they see modernism doing), its place in the economy.
8. Some composers, like their predecessors in earlier eras, want to create music that is new and different. Yet they have become disillusioned with the avant-garde's search for novel sounds, compositional strategies, and formal procedures, and with its adversarial stance toward tradition. Rather, they seek originality in the postmodernist acceptance of the past as part of the present, in disunifying fragmentation, in pluralism, and in multiplicity.
9. All composers live in a multicultural world. While some choose to keep the ubiquitous musics from all parts of the globe out of their compositions, others are so enthralled with coming into contact

with music from very different traditions that they accept it into their own personal idioms. Although such appropriations are sometimes criticized as instances of cultural imperialism, they do abound in postmodern music.

10. Most contemporary composers are aware of the postmodern values in their culture. These values inform not only the music they produce but also the ways it is heard and used. However varied its musical manifestations may be, and however diverse the reasons for its appeal to composers and listeners, musical postmodernism is—as I have tried to suggest—the all-but-inevitable expression of a socially saturated civilization.

The reasons behind the creation of postmodern music today are varied. The characteristics of postmodern compositions and postmodern listening are numerous. The origins of the postmodern attitude in music are diverse, as are the responses to it and social uses of it. Hailed by some and reviled by others, postmodern music and postmodern listening are exciting —yet sobering—statements of who and what we are.

Notes

1. For further discussion of antimodernism vs. modernism vs. postmodernism, see Kramer 1995.

2. Postmodernist music is generally less elitist than modernist music, much of which appeals to a relatively small audience of initiates—people who know how to appreciate atonality, jagged melodies, irregular rhythms, asymmetrical meters, pungent dissonances, etc. But postmodern music rarely achieves the total overthrow of elitism. By incorporating popular music into symphonic compositions, for example, postmodern composers do not really create pop symphonies so much as they embrace pop while preserving its otherness. Its effectiveness in a symphony derives in part from the fact that it does not totally belong there.

3. I discuss this work in my article "Bernard Rands' . . . *Body and Shadow* . . . : Modernist, Postmodernist, or Traditionalist?" forthcoming in *Contemporary Music Review.*

4. Eco 1984: 67. Similarly, Kathleen Higgins writes: "The term 'postmodernism' has an oxymoronic sound. How, if the word 'modern' refers to the present, can currently living people be 'postmodern'? This question arises almost as a gut reaction. The word seems a little uncanny. A 'postmodernist' sounds like one of the living dead or perhaps one of the living unborn—or maybe our sense of temporality is simply offended. We can recall Kurt Vonnegut and conceive of postmodernists as 'unstuck in time' " (1990: 189).

5. The postmodern challenge to the concept of unity is the central topic of my article "Beyond Unity: Toward an Understanding of Musical Postmodernism" (1995).

6. Among postmodern composers whose music is deeply concerned with structural unity are Arvo Pärt and Fred Lerdahl.

7. This distinction, incidentally, helps to explain the difference between two musical aesthetics that are both involved with the past: neoclassic modernists tend to place their own personal stamp on their historical references, whereas postmodernists do not.

8. For a discussion of the postmodern aspects of *Putnam's Camp,* the middle movement of *Three Places,* see Kramer 1997: 48–60.

9. For a discussion of the postmodern aspects of the finale of Mahler's Seventh Symphony, see Kramer 1997: 30–48.

10. For an analysis of the postmodern aspects of Nielsen's *Sinfonia Semplice,* see Kramer 1994: 293–334.

11. It is impossible to prove lack of influence decisively. However, none of the writings by (or interviews with) early minimalists with which I am familiar cite either of these works as influences, and I suspect—for aesthetic and stylistic reasons —that the music of Glass and Reich would be unchanged had Ravel and Shostakovich never composed these particular pieces. But I cannot prove this contention. Similarly, I feel (but cannot prove) that postmodernism today would be essentially unchanged if the cited compositions of Ives, Mahler, and Nielsen did not exist.

12. This list is expanded from one appearing in Kramer 1997: 21–22.

13. I discuss avant-gardism in my article "The Musical Avant-Garde," forthcoming in Sitsky.

14. I owe this perceptive formulation to an anonymous reviewer of an earlier version of this article.

15. Joseph Straus offers a theory of influence in modernist music, based on the ideas of Harold Bloom, in Straus 1990: 1–20.

16. The adolescence of postmodernism is particularly apparent in traits 3, 5, and 6 in the list of characteristics of postmodern music.

17. While I have suggested that postmodernism is an attitude more than a period, and that instances of postmodern musical practice can be found in compositions of the distant past, I trust that it is clear that I do not believe that postmodernism is ubiquitous throughout history.

18 It is somewhat naïve to look only for cultural factors that "caused" postmodernism to develop. Postmodernism shaped as well as was shaped by certain Western cultural ideas.

19. Gergen writes: "We are now bombarded with ever-increasing intensity by the images and actions of others; our range of social participation is expanding exponentially. As we absorb the views, values, and visions of others, and live out the multiple plots in which we are enmeshed, we enter a postmodern consciousness. It is a world in which we no longer experience a secure sense of self, and in which doubt is increasingly placed on the very assumption of a bounded identity with palpable attributes" (15–16).

20. Gergen discusses the "perseverance of the past" on pages 62–63.

21. Several students of one well-known modernist composer-teacher have told me how they simultaneously work on two different pieces, one that they truly believe in and one that they think their professor will approve.

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A Foreground Mist? Debussy's *Brouillards*

By Gregory J. Marion

Part of what I find fascinating about Debussy's music is that it continually challenges me to question the compatibility between the work and listening strategies intended to aid in its understanding. At times I am encouraged to consider entirely new methods of relating to the aural landscape of a piece; but I can also be called upon to measure Debussy's compositional procedures against those of his forebears, for recognizing what are invariably radical rearticulations of proven approaches can also lead to a deeper comprehension of this difficult repertoire. One thing is certain: active participation in the unfolding narrative of a work such as *Brouillards* requires a flexibility with respect to orientation, which sponsors different types of involvement from those that are traditionally encouraged in tonal music.

Although a gross oversimplification of a complex issue, I do find it helpful when engaging tonal music to regard what is taking place before me as a delay of the inevitable.[1] Exposure to European tonal practices from 1700 to 1900 has conditioned me in such a way as to expect particular things to happen in this music, and in particular ways. When analysis is informed by the direct interaction of paradigmatic and syntagmatic relationships, participation in the evolving linearity of the piece is exciting, if, at some level, predictable. With Debussy, however, the raw materials of tonal space (paradigmatic events) and what governs the ways that these elements are distributed (syntagmatic relations) differ radically from what might be regarded as normative in common-practice music.[2]

The implication here is that I cannot interact with *Brouillards* in the same way that I might with any number of tonal compositions, and this will be reflected in the mode of argument in which my analysis is cast. Absent from *Brouillards* is anything comparable to the single immutable background that Schenker envisions as underlying all of tonal music: goal-directedness in the *prélude* is not foreordained in the manner that it is in tonal music. As a consequence, the events of *Brouillards* cannot be measured against anything other than themselves. In all, it is necessary to maintain a heightened sensitivity to what occurs in the ever-changing present of the piece and continually to reassess how this present alters my understanding of what has happened before it, for conventional notions of how past, present, and future bear upon each other may not sufficiently account for the temporal logic in *Brouillards*.[3]

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For the purposes of this discussion, the formal divisions in *Brouillards* are taken to be those outlined in figure 1, below:[4]

Figure 1: Formal outline of *Brouillards*.

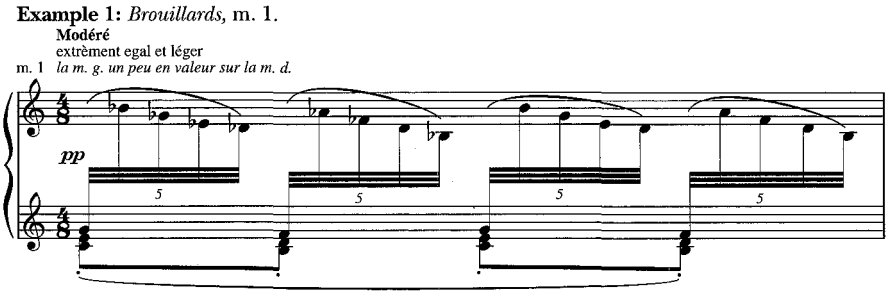
	A1	B1	A2	C	B2	A3
mm.	1–17	18–24	24–31	32–38	38–42	43–52
	subsection 1 2		subsection 1 2			
mm.	1–6 7–17		24–28 29–31			

The analysis that follows treats, in order, each of the sections of the piece. But it also begins to turn more and more on an investigation of intra- and intersectional relationships, and bespeaks a type of formal argument resembling what Hayden White identifies as a contextualist's world hypothesis.[5] Much of section three of this article is devoted to a discussion of the merits of contextualism as an analytical strategy.

Part the Second, Played First

Were it possible to ascribe suitable metaphors to my interpretation of the composition, those metaphors might be conflict and struggle—for I have a sense that whatever is at hand, or foregrounded, at any "present" in the work is vulnerable: it can easily have its position usurped by some other event.[6] By way of introduction to this argument, consider the opening measure (see example 1, below):

Example 1: *Brouillards*, m. 1.



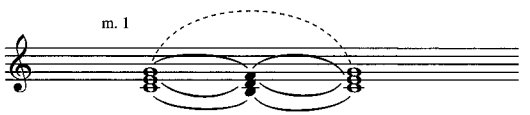
For me, the passage exhibits conflict and struggle on many levels, but the crux of the issue centers on the marked contrast between solid triad and arpeggiated quintuplet: L.H. and R.H. gestures, in the guise of distinct

characters, are set in relief—with each vying for attention. Debussy's verbal indication at the head of the score (*la m. g. un peu en valeur sur la m. d.*)[7] clarifies somewhat the issue of roles, for it implies that the triadic material in the L.H. leads, or is foregrounded in m. 1.

The case is not, however, as simple as it might at first appear to be, for the upper pitch in each L.H. triad also represents the initial pitch in each R.H. quintuplet. In assuming dual service, a point of contact between two varying stratum has been established from the outset of the piece: as an element of the L.H. line, G is the upper fifth in the C triad, while F takes on the same role in the B triad. But as elements of the R.H. gesture, these same two notes serve as neighboring tones that decorate the middle member in one or the other of the quintuplets—G decorates G♭, and F decorates F♭. The neighboring decorations, in turn, heighten my sensitivity to the "presence" of the quintuplets, and thereby to the independent nature of the R.H. material as a line unto itself. While the dominance of the L.H. gesture is not usurped by the quintuplets, the R.H. is at least disassociated from total subservience to that gesture.[8]

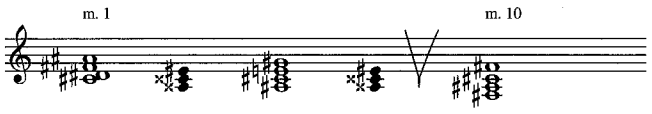
Yet even after settling on the dominance of the L.H. material in m. 1, I am forced to consider the hierarchical relationship between the two triads: are they equal in weight? If not, does the triad on C or the one on B dominate? Again, it would appear that the answer is at hand, for the agogic accent rests with the former, and heightens the sense of a decay in volume as the move into the latter comes to pass.[9] What is more, the quality of the initial triad is major, while that of the second is diminished, which conjures decided allusions to linear techniques common in tonal music. In a contrapuntal sense, the voice-leading sets as focal the major triad, and is driven forward by neighboring and passing prolongations of that sonority (see ex. 2, below):

Example 2: A contrapuntal model for the L.H. material in m.1 of *Brouillards*.



But if allusional associations assume a heightened role in this music—as I believe they do—and enter into our paradigmatic storehouse as possible facilitators of future moves, then once again I am made aware of the contextual and somewhat arbitrary nature of the term "dominance." Consider example 3, below, with all that it includes *and* omits:

Example 3: M.1 (rewritten) and a connection with later events in *Brouillards.*



In the example, I am not so much ignoring the implications attendant to the C-major triad as I am looking behind and beyond what they represent at the given present, that is to say, m.1. The chordal succession represents a selective culling of material presented either in the L.H. or in the R.H. I suggest that the "payoff" for such a tack is realized in mm. 10–17, where the F♯-major sonority moves to the fore and occupies a position closest to the listener (i.e., in a spatial sense).[10] The voice-leading in the example is not readily apparent in the actual music, but this may, in fact, represent a deliberate strategy. While I have no desire to become entangled in a debate that centers on the intentional fallacy, I would like to posit that such concealed forward references could help to account for the apparent ease with which seemingly disparate events follow one another in Debussy's music—all without rupturing the flow of the line.

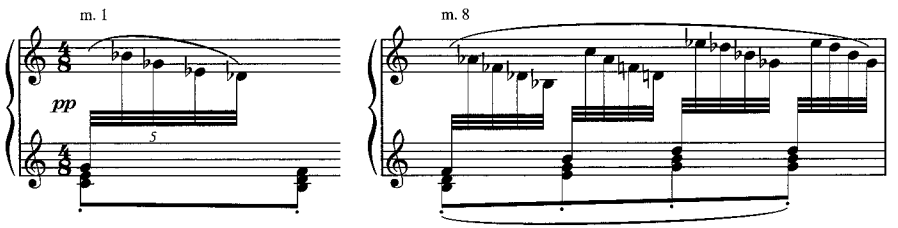
The events of the mm. 1–6 do, however, tend to support the assumption that C is the central sonority to the end of subsection 1 in section A1. The dominance of the triad is confirmed in this span of music: first, an allusion to V/C is sponsored by the stepwise drive to the G triad in m. 4 (L.H.). The arrival of the initial dyad in m. 5—the open fifth C–G—is suggestive, for even though direct voice-leading has not been the issue, one cannot help but sense the aural play on the strongest of progressions in common-practice music (V–I); second, while the L.H./R.H. gestures continue to exhibit stratification, a powerful moment arrives in mm. 5–6, where the independence of the two lines breaks down temporarily. The D♭/A♭ dyad in the R.H. serves as direct neighbor to the open fifth in the L.H.: thus mm. 5–6 display the most overt interaction between the two layers until this point in the piece.

A subtle fracture in the flow of the line between the end of m. 6 and the beginning of m. 7 marks the arrival of the second of the two subsections of A1 (mm. 7–17), for the direct repetition of the B-diminished triad (L.H.) and its shadowing quintuplet wrest attention from the central role assumed thus far by the C sonority. This is the first stage of a radical shift affecting the listener's orientation, which obtains over the course of the next several measures. The net result is that events that had belonged to the second, or distant, stratum at the opening of the piece come to the fore—penetrate the mist if you will—while the primary line recedes. The

process is initiated in mm. 7–9. In these bars the G triad is no longer strongly perceived as V/C. Instead, it is drawn into an association with the B-diminished triad, an association underscored by the fact that the triads share two common tones.

Each of the compositional ideas played out over the course of mm. 7–17 is motivated by earlier events in the piece. The unfolding of the F♯-major triad in the upper line from m. 10 onwards devolves from the initial quintuplet gesture of m. 1. But that gesture is also directly related to the quintuplet that is continuously present from the midpoint of m. 8 to the conclusion of section A1. Example 4, below, isolates the earlier and the later quintuplets, and thereby facilitates their direct comparison. Notice that the final four pitches of each are identical, if reordered.

Example 4: Quintuplet figures, m. 1 and m. 8.

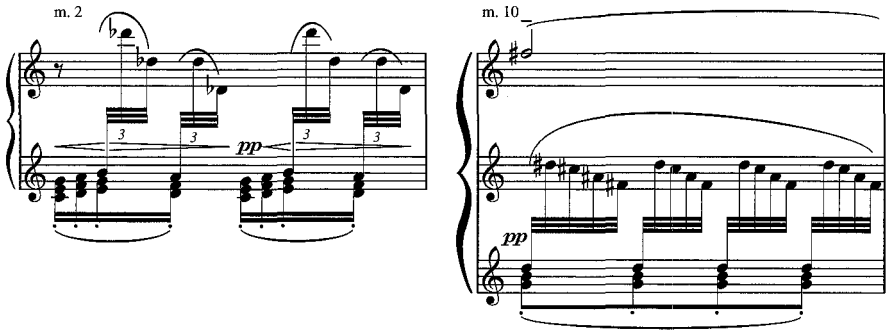


As the listener's awareness of the F♯-major triad heightens, the G-major chordal pedal in subsection two of A1 serves as a reminder of the earlier foregrounding of the C-major/B-diminished stratum.

The shift in perception that takes place as subsection one moves into subsection two, then, must be recognized as something other than a reversal in role between melody and accompaniment: the unfolding of the F♯-major triad in m. 10 ff., is, in a spatial sense, now closer to us, and if we maintain the metaphor of field depth, the pedal on the G-major triad, although representative of the "old guard," suddenly stands farther from us.

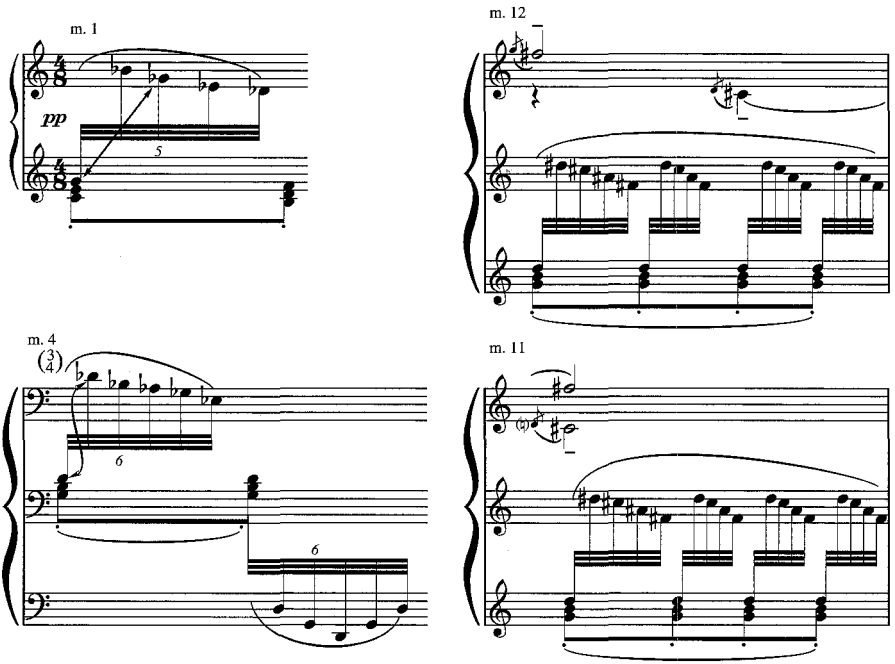
Additional instances of intra-subsection connections exist. In m. 2 Debussy opens a new and higher register with the move in the R.H. to D♭6. If the allusional evocation of descending fifth motion is a convincing one, then I believe it fair to maintain that this D♭ has local as well as longer-range implications. By marking the pitch, another of its meanings is diffused, or delayed until the arrival of the foregrounded F♯5 in m. 10.[11] Example 5, below, reproduces the material in question. What the example does not indicate is that D♭6 occurs only in m. 2, and nothing in mm. 3–9 transpires in the pitch space between it and F♯5; the two notes are thus contiguous in a registral sense.

Example 5: A delayed registral connection in *Brouillards.*



The grace-note figures in the uppermost line in mm. 11–12 are reminiscent of earlier events. The higher of the two, the G to F♯ in m. 12, echoes a connection first heard at the opening of the piece, in the initial quintuplet of the head-motive; in a more direct manner, the D–C♯ of m. 11 is borne out in the interplay between near and distant strata in m. 4, where D and D♭ are the first two notes in a sextuplet that unfolds over V/C (see ex. 6, below).

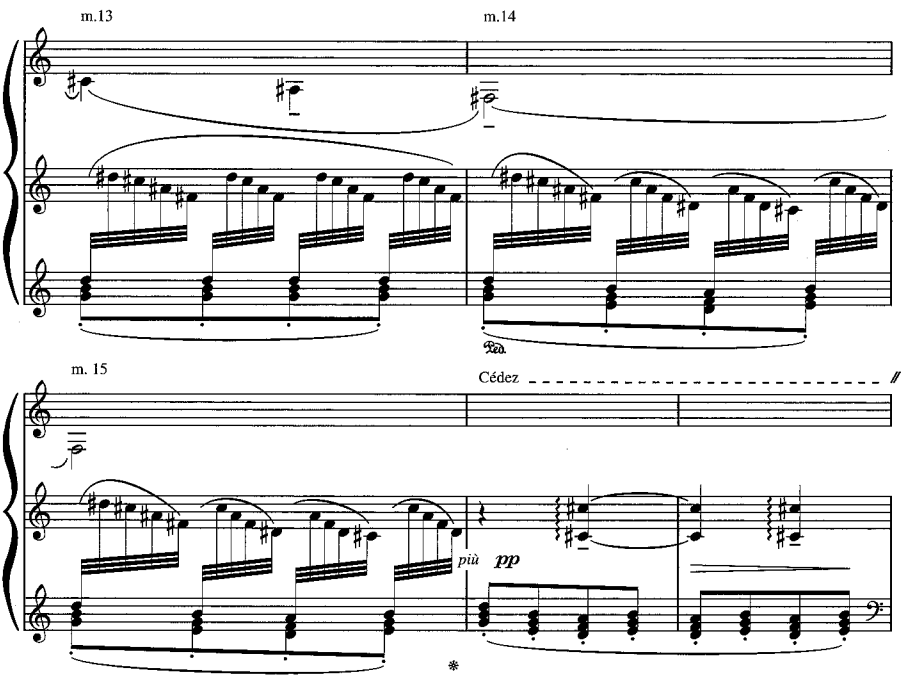
Example 6: A source for the grace notes in mm. 11–12 of *Brouillards.*



At the sounding of the final note in the foregrounded arpeggiation in m. 14, section A1 moves toward completion. An account of the events of mm. 14–17 might note that both liquidation and planing effect closure.[12] While these procedures are employed, the purely descriptive nature of the two terms allows no space for consideration of the effect created over the course of the four measures leading into the first major articulation in *Brouillards*.[13] To my ears, the passage does possess the quality of an articulation, but it is an articulation charged with the obligation of dissipating energy built up in competing strata, and not merely over the course of a single melodic line plus ground or accompaniment. Simply stated, for the articulation to be persuasive, the effect rendered must be that of a balanced conclusion of two independent entities.

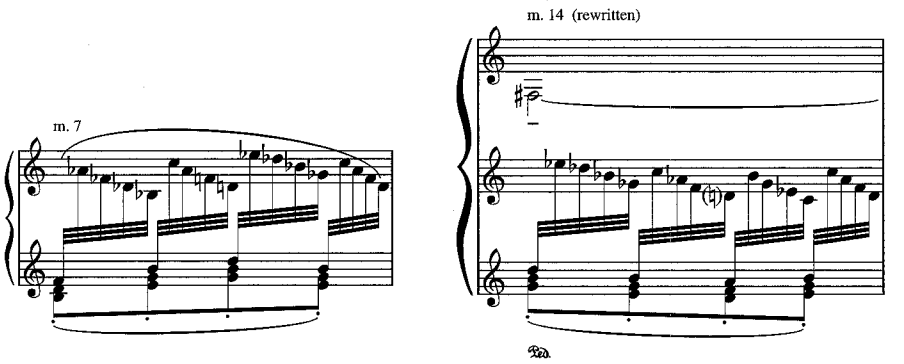
Double closure is achieved in an interesting way, for ultimately the competing narrative strata occupy the same plane in mm. 14–17. Said another way, L.H. and R.H. come to share that distance, or depth, with respect to the listener, that I am labeling "foreground." The passage in question is reproduced as example 7, below. The onus here is on the L.H. to emerge spatially from its distant location, for the R.H. material occupies the foreground from m. 10 to the conclusion of section A1 in m. 17.

Example 7: *Brouillards,* mm. 13–17.



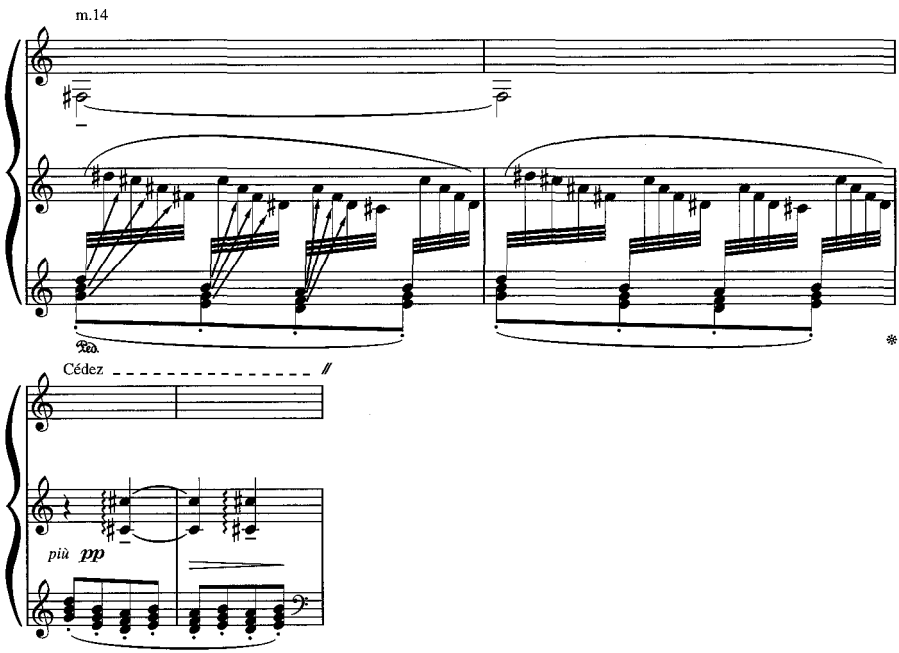
Two related points substantiate this last remark. First, were the quintuplet gesture presented by the R.H. either to reclaim or to be forced into the role of distant stratum, one might reasonably assume that its pitch material would revert—to the extent possible—to what it had been in subsection 1 of section A1. Thus, the arrival of the vertically rendered E-minor triad in the L.H. in m. 14 would have summoned the return of C–A♭–F–D as elements 2 through 5 in the shadowing quintuplet, and in this way a direct back-reference to m. 7 would have been secured. Establishing the case for what would trail the D-minor triad on the third eighth note of m. 14 is slightly more complicated, since no direct precedent for such an event exists earlier in the piece.[14] Giving free reign to my imagination, however, I propose two potential candidates as elements 2 through 5 of the rewritten quintuplet: C♭–A♭–F♭–D♭ and B♭–G♭–E♭–C. While the minor-minor 7th would preserve the D–D♭/C♯ interplay already discussed in connection with m. 4 and mm. 11–12, the half-diminished 7th seems the more likely choice in my revision, for it relates better to the succession of events heard in m. 7, the aural associate of m. 14.[15] Example 8, below, will help to illustrate; in it, nothing in the L.H. has been altered. The reversal in the direction of the line—ascent–ascent–descent in m. 7 becoming descent–descent–ascent in m. 14—already exists in the composition. If, as I am proposing, the L.H. gesture is to represent the foregrounded event in the revision, one means of insuring its dominance is to render a stronger connection between the upper voice in m. 7 and the "new" material of the rewritten m. 14, for the connection as it stands may well force the quintuplets of m. 14 to revert to their earlier default setting as distant stratum.

Example 8: *Brouillards,* m. 7 and a revision of m. 14.



But, as we know, these events do not transpire: what does occur in the R.H. in mm. 14–15—the arpeggiation of the focal sonority of subsection two—maintains the proximity of the gesture, and establishes maximal semitonal relatedness between each stratum. Such a tight bond between the two lines belies any sense of layering; example 9, below, illustrates.

Example 9: *Brouillards,* mm. 14–17.



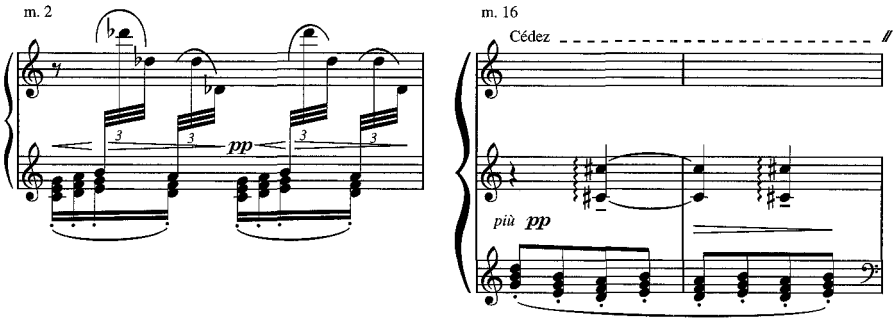
In mm. 16–17, liquidation has diminished the R.H. gesture to the point where only two pitches remain: C♯5 and C♯4. In mm. 14–15, these same two pitches are associated, respectively, with the E- and the D-minor triads; but the association remains intact in the later measures, given the manner of presentation: by "rolling" the octave dyad, C♯4 and the D-minor triad are in accord, while C♯5, entering somewhat in advance of the E-minor triad, is affiliated with it.

The dominant line of subsection one is reactivated in mm. 14–17 as soon as the L.H. begins to stray from the pedal chord on G. Yet the line has undergone an important change, for neither of the two main sonorities of the earlier passage—that is to say, neither the triad on C nor the one on B—is explicitly stated in the course of the four measures. While I am aware that musing over the omission is tantamount to spoiling the element of mystery so cherished by Debussy,[16] I believe that my story of how

Brouillards works would suffer were I not to offer an account of two sonorities so conspicuous by their absence. Though not expressed outright, I believe that the principal triads of mm. 1–6 are summoned into presence in the play between the D- and E-minor triads. Among other things, my claim rides on the fact that these two chords are related to the earlier ones via common-tone connection *and* latent, but unrealized 5–6 voice-leading technique. The effects of the double substitution (D-minor for the B-diminished, and E-minor for the C-major triads) are manifold, rendering the structural articulation in m. 17 less complete, or less closed, than it otherwise would have been, *and* averting too overbearing a reference to subsection 1. The inclusion of the C and B triads here may even have precluded attention from the quintuplet gesture.

The concluding measures of section A1 also recast and place on a level plane a figure heard in the second measure of the piece. I mean to illustrate this last point with the aid of example 10, below:

Example 10: *Brouillards,* m. 2 and mm. 16–17.



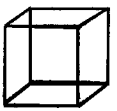
In the earlier passage, the local hierarchy is relatively unclouded, for both L.H. and R.H. gestures serve to decorate the C-major sonority of m. 3, which, in turn, leads to its dominant in m. 4.[17] In the later passage, the enharmonic recasting as C♯ of what in m. 2 had been spelled as octave D♭s is no trivial matter. The octave D♭s are articulated in succession, and so, too, are the C♯s. Further, the D♭s *and* the C♯s are coupled with identical L.H. triads. But the context of the C♯s is radically different from that of the D♭s: the C♯s stand alone as the ultimate goal of the R.H. stratum; they are not placed in the role of neighboring decorations of C.

The background issue in section A1, treating as it does the alternation of the relationship between one independent stratum and another, is not without precedent in studies of visual perception. Various branches of

psychology have long contemplated the underlying issues that force upon the interpreter spontaneous changes in perception of objects such as the Necker cube, the Rubin vase faces, and the duck-rabbit image (see figure 3, below):[18]

Figure 3: Three paradoxical visual images.

(a) The Necker Cube



original source: unknown

(b) Rubin Vase Faces

original source: E. Rubin (1915)

(c) Duck-Rabbit Image

original source: J. Jastrow (1900)

In an article published in 1993, Peterson suggests that each of the images in figure 3 sponsors a different type of perceptual reinterpretation: reference-frame realignment; redetermination of figure and ground relationships; and reconstrual of the parts of the figure. In a reference-frame realignment, which obtains in the Necker cube, there is a reassignment of front/back directions in the image. The Rubin vase faces, and other images that entail a redefinition of the figure and ground relationship, force a repartitioning of the shape's contour. What had stood as figure becomes ground at precisely the instant that ground becomes figure. In Peterson's words (155), the instability of these images stems from the fact that "the part structure of the figure changes from one minute to the next." In Jastrow's duck-rabbit image, reconstrual of the parts of the figure enclose the whole in a spatial sense to a much greater extent than is true in either the Necker cube or the Rubin vase faces: if the redefinition of front and back with respect to cube faces does not affect my perception of the volume of the image, then I am able to conceptualize what takes place in the Necker cube in the same way that I view the rotation of any non-spherical three-dimensional object moving through the medium of space; the reversal between figure and ground that occurs in the Rubin vase faces transpires within a two-dimensional frame of fixed size. But I focus on a smaller or a larger area of the frame depending upon which of the two

objects I perceive to be represented. Attending to the vase, I take in less of the frame than I do when observing the faces.

What I find most compelling about the analogy between the visual play that occurs in figure 3 and what transpires musically in mm. 1–17 of *Brouillards,* is that each sets up the parameters for its own effectiveness; but realization of the effect can only ever occur outside of the object itself. In point of fact, I sense a particularly strong affinity between the background issue in these measures and the type of perceptual reinterpretation that occurs in a reference-frame realignment—the classic example of which is the Necker cube. Concerning images such as those found in figure 3, Bruce and Green (1985: 100) claim that "the perceptual 'data' remains the same, while the interpretation of [the images] varies." Yet were we to substitute "aural" for "perceptual" in the quotation, the gist of the message would hold true for the effect that I perceive over the course of A1 in *Brouillards.*

The visual paradox in the Necker cube requires a multi-staged act of engagement on the part of the receiver. In the initial stage, I must convince myself that it is tenable to confront in three-dimensional space what is essentially a two-dimensional entity. What I find most troubling about the image, however, is that the leap enabling the play between near and far having been made, I am unable—without breaking my involvement with the image—to silence what amounts to an eternal struggle for dominance between two competing interpretations of the objects. An interesting phenomenon is registered when I am totally open to positional exchange between the combatants, for then I am cognizant of the exact instant when transition from one orientation to another is effected. The more active I become in placing either of the cube faces into the foreground, the greater do I experience interference from the "other" as it fights for my attention.

While the analogy between the Necker cube and section A1 of *Brouillards* does not stand in a one-to-one relationship, enough common ground exists to render the resemblance tenable. Issues such as near and far, struggle for dominance, and transitional moments of risk are very real in the music. So, too, do I constantly sense interference from the "other," or non-near, stratum throughout mm. 1–17.

Introit: Section B1

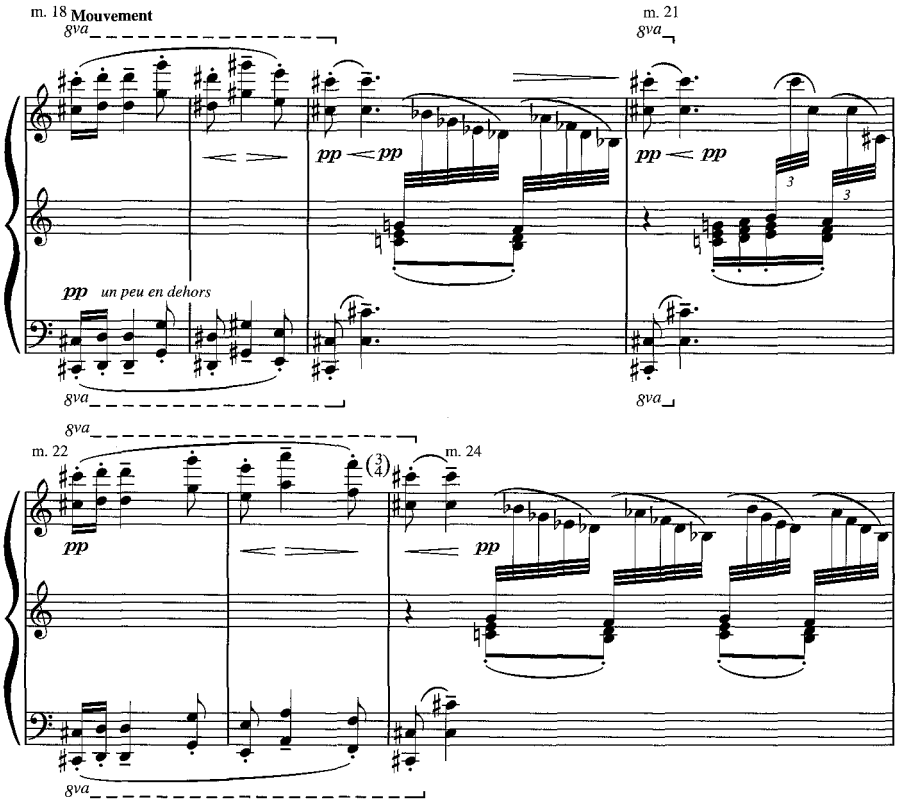
Parsing the next several measures is made complicated by the intrusion of material from the opening of the piece in both mm. 20 and 21. The rationale behind what I offer as the formal design (see fig. 1, above) takes into account the point of articulation at the end of m. 17, and the varied return of the initial section of *Brouillards* in m. 24. By affixing the label B1 to what bridges this span, I am recognizing as new the expansion in the

overall tessitura, the thinned-out texture, and the more lyrical nature of everything in the course of mm. 18–24, save the overt references to A1.

These events establish for themselves a unique place in my unfolding narrative about the piece. The nexus between extremes in B1—extremes in tessitura, texture, and lyricism—is, ironically, causal in projecting a nodal point in *Brouillards*. "Un peu en dehors,"[19] in Debussy's words—elements that transpire registrally close to the outer limits of the piano[20] do more than interrupt; they actually silence that which has been responsible for the dynamic in the piece: the phasing that locates as distant or near each of the strata in section A1.

Example 11, below, reproduces the entire passage that I am calling B1 and the start of A2 in m. 24. The primary component of the section comprises a monophonic line with multiple octave doublings, which in character is suggestive of a stylized return to the principles of early organum.[21]

Example 11: *Brouillards,* mm. 18–24.



Section B1 is tension-packed, for transpiring as it does at the registral extremes, a sense of the primordial is instilled into mm. 18–20 and 22–24. It is this quality of ur-origin, more than anything else, that prohibits from entering into its domain the struggle between L.H. and R.H. gestures. It takes the doubled octave shifts in m. 20 to reestablish the ground upon which the polyphony of A1 can unfold. This last point is fully driven home by the event on the downbeat of m. 21. Here, the return to the boundary C♯s quells the sounding of the head motive begun in m. 20, but does not impede its forward motion, for the quarter rest in the middle staff of m. 21 is imbued with meaning beyond what it signifies in a notational sense. Were the registral connection with mm. 18–19 not to have been made in m. 21, a full repetition of m. 1 could have sounded. Thus the rest is not merely a place holder, rather, it shrouds the reiteration of the head motive that cannot make itself heard against the primordial backdrop of elements that stand "un peu en dehors."

To *Brouillards*'s background issue of near and far, section B1 introduces the dimension of high and low; but the later measures also crystallize the need to assess the peculiar temporal relationship between the two sections. Though "earlier" in a diachronic reading of the work, the music of A1 is more progressive than the monophonic material of B1, and exhibits contemporaneous compositional techniques.[22] By contrast, the monophonic portions of B1, though later in the piece, are symbolic of a distant past, and serve as the teleological precursor, the "earlier," that facilitates the procedures if not the actual events of A1.[23]

Such fracturings of the timeline are not uncommon in postmodernist literature—even to the point of becoming the primary vehicle upon which the plot moves. I am always most compelled by the scheme if two things happen: I am left reeling by the shock of the fracture itself; and if I sense that the protagonist is equally made to struggle in untangling what amounts to seemingly unmotivated distortions in the timeline.[24] Christopher Lewis believes that the power behind such a strategy is attributable, at least in part, to its association with one of the most eternal and troubling paradoxes ever to have confronted Western thinkers, specifically, "the uncertainty of our one-way passage through time."[25]

If it is true that much of Western culture has been conditioned in such a way as to assume an intrinsic coherence in all things, then that which threatens to alter our sense of the logic of an event will render a disquieting effect. Ruptures in the temporal flow of a narrative are unsettling, for as Lewis argues,

> the essence of narrativity . . . is process. Comprehension of narrative requires the recognition and constant reassessment of narrative contingencies that are no more than fragments of fictional history. We

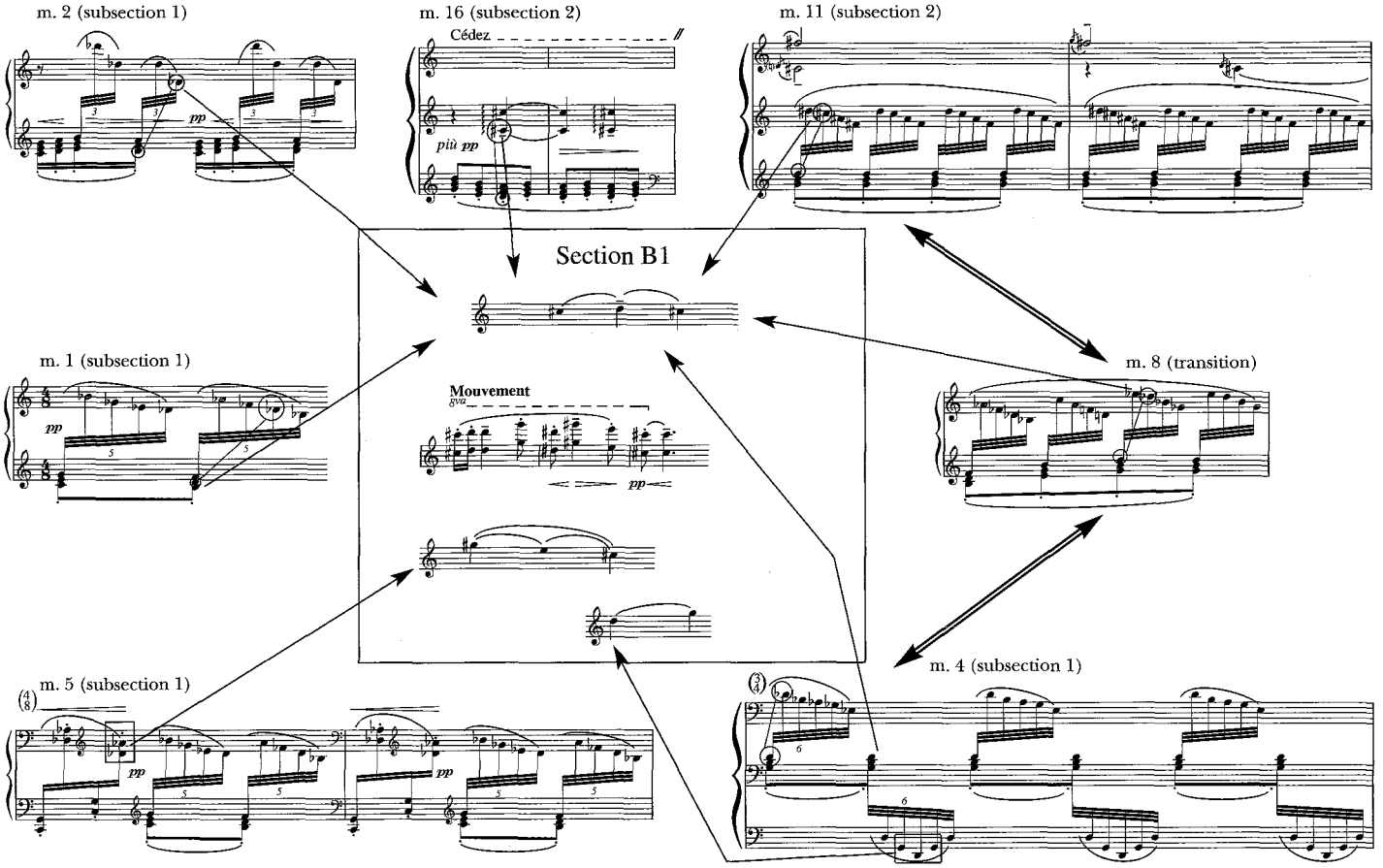
> reconstruct the process that underlies narrative by making its discontinuous fragments continuous, and although we may do so at our own speed, we must do so under the direction of the chronological order of the narrative itself. (1996: 115)

In literature, the postmodern condition often takes this argument to a new level: simultaneously, interpreter *and* protagonist must contend with the discontinuous fragments of the fictional history. Said in another way, the protagonist is as much a stranger to the temporal flow that surrounds his or her own story as is the interpreter. Reader and protagonist have not "merged" into one, but at some level, *each* must process what is unfolding from a similar vantage point, anxious to understand where events are leading, and how everything will fit together. One thinks in this regard of such novels as Italo Calvino's *If on a Winter's Night a Traveler* or, more recently, John Barth's *Once Upon a Time.* I am not suggesting that Debussy is the precursor of these novelists in particular or of postmodernism in general. I am, however, making the point that my reading of B1 and its relationship to the whole of the piece is informed by procedures encountered in these two and similar works of fiction.

A particular strategy is employed in each of the books, wherein the protagonist is exposed to *and* cognizant of rifts in the expected flow of the narrative. In the Barth, that protagonist is represented by a mélange of the fictional and the real John Barth, who at a certain point in the story finds himself confronted by—read *writes himself into*—a specific type of flashback sequence wherein the return to the past is not a voluntary act. The sequence thus suspends the present, and in so doing ruptures the timeline. Barth the author's underlying purpose may be to provide to the reader background information as Barth the protagonist is made to confront his past, and yet the reader shares in the latter's angst over the suspended present, and fully believe that what is unfolding holds time in abeyance: it is not just a vivid historical account of earlier events told in the present.

Section B1 of the Debussy signals to my ear a symbolic return to the past, or to some imagined source, and in more than a textural sense; anachronistically speaking, the melody in mm. 18–20 comprises motivic material developed to a higher degree of sophistication in section A1.[26] In this way, the diachronically later (though metaphorically earlier) events represent a touchstone for what is heard first (section A1) in the actual timeline of the piece. Example 12, below, outlines three specific two-note motives encountered in their infancy in B1, and posits counterparts in what are intersectional connections in *Brouillards:* the minor second involving C♯ and D; the perfect fifth comprising C♯ and G♯; and the ascending perfect fourth from D to G.

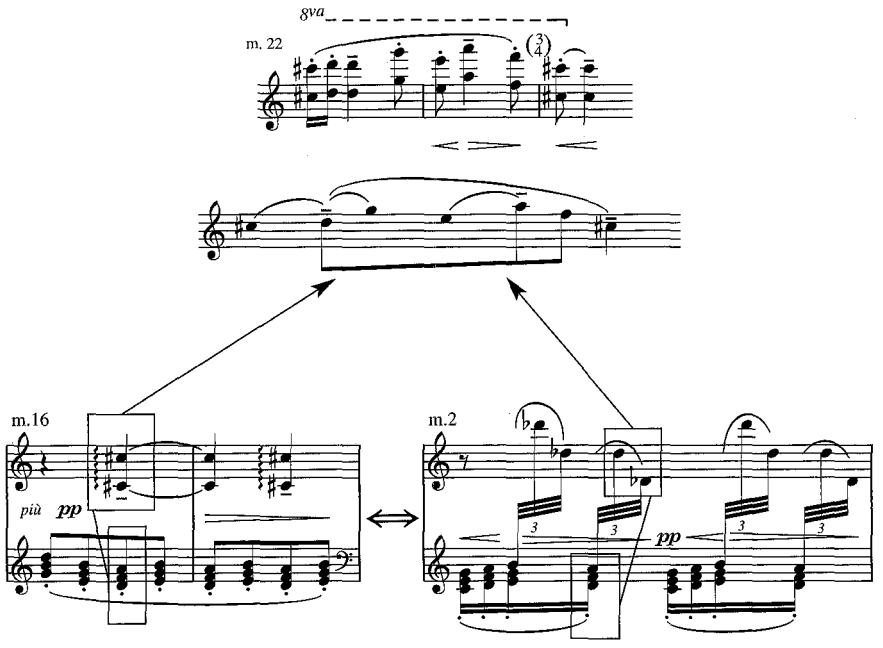
Example 12: Ur-motives in B1, and their relation to material in A1.



The mere prevalence of semitonal motion in the monophonic material in B1, in and of itself, is strongly cross-referential, given the many motival contexts for the minor second in A1. But the connections outlined in example 12 are rather specific. The most obvious of these involves the pitches C♯ and D. Careful adherence to the tenuto marking in the score will help to emphasize the motion from C♯ to D when it is encountered in m. 18 and in the larger motion from D to C♯ that encompasses mm. 18–20; a very similar connection is, however, played out as early as beat two of *Brouillards,* albeit among inner voices (D, the middle element in the L.H. triad, moving to D♭ in the R.H. quintuplet). More direct references in A1 to this particular minor second involve intrasectional linkings of the motive that bind together events in subsections 1 and 2: m. 2 (subsection 1) and m. 16 (subsection 2); and m. 4 (subsection 1), mm. 8.5 ff. (transition into subsection 2), mm. 11 and 12 (subsection 2). Concerning the cited perfect fifth, we notice that the melodic scope in B1 is marked by the linear motion from C♯ upward to G♯ before returning to C♯. This same interval assumes a prominent role in A1; expressed vertically as A♭ over D♭ (R.H.), the perfect fifth in mm. 5 and 6 ultimately serves as a neighboring event that ushers in the re-articulation of the head motive.[27] The case of the melodic perfect fourth from D up to G in m. 18—and its repetition a semitone higher as D♯ to G♯ in m. 19[28]—is also of note, for the interval, with its pitch content reversed, is encountered in the bass line of m. 4 and there underscores a focus on the G-major sonority as V/C.

I draw this *Introit* to a close with one final observation: mm. 22–24 differ from mm. 18–20 in a small way, but the difference is revealing. Pitch repetition of the initial material of B1 breaks in m. 23. To employ another metaphor, a transformation has taken place in which the later passage establishes an identity of its own (compare mm. 19 and 23 in example 11, above). The sounding of C♯ in m. 24 forestalls an anticipated arrival on D, but cannot alter the fact that what has occurred over these measures stands as one of the climaxes in *Brouillards*—for A7 in m. 23 represents the highest pitch in the piece. The independent identity of these measures is marked by a "going farther"—that is to say, by reaching a higher point than was attained in mm. 18–20. But this move is symbolic in another way. I have argued that mm. 18–20 function as a belated precursor of an intrasectional link involving m. 2 (subsection one) and m. 16 (subsection two) from section A1 (see ex. 12, above). That argument turned solely on the notion that all three passages share as a referential dyad the minor second comprising the pitches C♯ and D. A more vivid aural connection than this, however, exists between subsections one and two from A1 and mm. 22–24, where the direct play among these three portions of *Brouillards* involves a complete D-minor triad plus the singleton C♯ (see ex. 13, below):

Example 13: *Brouillards,* mm. 22–24 in reduction, and mm. 2 and 16.



Against this backdrop, mm. 22–24 represent a direct move into the future when held up against mm. 18–20, even to the point of introducing the play between near and far so crucial to the background issue in section A1.

Contextualism: An Analytical Strategy

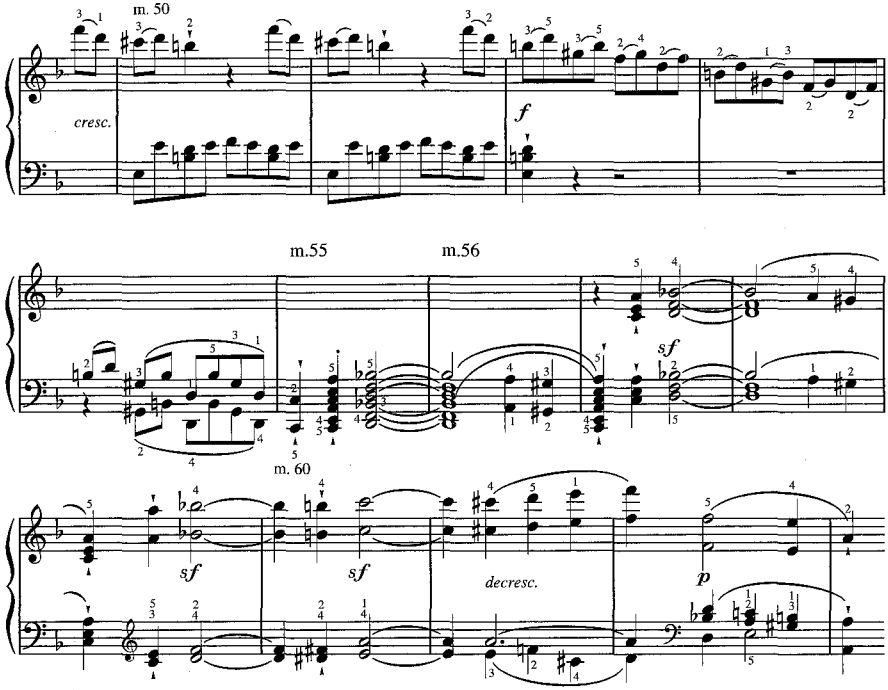
The newness of B1 is immediate and striking; yet the presence of the head motive—at first echoing the opening of the *prélude* and then emerging in m. 24 ff. as section A2—compels me to contemplate section B1 independently *and* against a larger backdrop that takes into account both portions of the work. But the call for continuous reassessment is in no way unique to Debussy, and cannot be ignored if our engagement with any composition is to be an active one. In fact, this may be one of the constants that enables involvement with music writ large—transcending issues such as style, genre, and period. What I do maintain, however, is that the types of reassessment elicited by Debussy differ both in degree and in kind from that which is encouraged when confronting earlier repertoires.

A review of the compositional procedures encountered thus far in *Brouillards* will help to shed light on the differences in reassessment sponsored in Debussy. I have argued that section A1 simultaneously presents two competing musical gestures that in turn occupy a forward position with respect to distance or depth from the listener. The matrix is usurped in B1 by the arrival of material that metaphorically assumes the role of a belated precursor of the first section of the piece. The effectiveness of each section turns on this premise: metaphorically, Debussy seems to be valorizing the spatial, as opposed to the temporal domain in each passage. In this conceptualization, the linearity or diachronicity of a section is isolated from its surroundings, each section exhibiting characteristics of a self-contained unit.[29] Thus at one level the perceived and the real timelines of the piece are at odds. Yet I would contend that much of what happens in tonal music argues from precisely the opposite position—that as significance accrues within it, the spatial domain expands, but this expansion is a function, at a base level, of an unimpeded and unidirectional conception of the timeline.[30]

An example is in order. I will consider two issues encountered in the exposition and development sections of the first movement of Beethoven's *Tempest* Sonata. In each case, reassessment of an earlier passage is prompted by events heard later in the movement.[31] The movement is in sonata form, and at a deep structural level exhibits a conventional tonal plan wherein the exposition modulates from the tonic to the dominant (D minor to A minor); the development eventually reaches V/D (retransition), which signals the approaching recapitulation through tonal and thematic means.

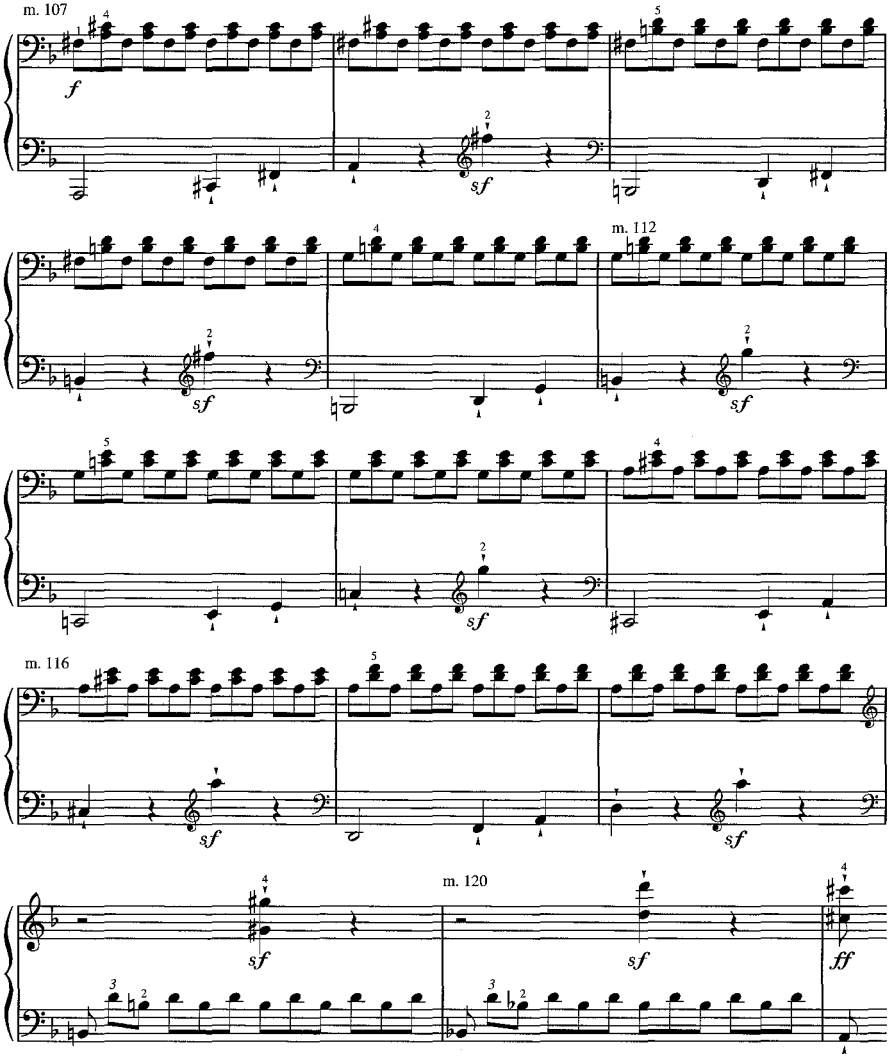
Issue One: A B♭-major sonority in first inversion arrives in m. 55. The event functions as the Neapolitan sonority in A minor—the tonal center in the second tonal area of the exposition—and is prolonged for seven measures before continuing to V/A and then to I of that key (see ex. 14, below).

Example 14: Beethoven Op. 31/2, mm. 50–63.



Attention is drawn to this point not only on harmonic grounds, but, moreover, through the disruption of linear events witnessed with respect to the surrounding material. By so marking the location it is apt to be retained aurally as the movement proceeds. The development section is goal-oriented toward V/D, and that sonority enters in m. 121—the beginning of the retransition. Example 15 provides a reproduction of the motion into m. 121. Notice, in particular, the chromatic bass-line descent in the final three measures of the example.

Example 15: Beethoven Op. 31/2, mm. 107–21.



The B♭ sonority in m. 120 represents VI/D. But such a sterile description misses a beautiful association between this moment and what had occurred in tonal area two of the exposition. A connection exists between each of these B♭ sonorities, calling for a reassessment of the former, in the light of the latter. The $\flat II^6$ in tonal area two of the exposition leads into V/A in an immediate context, but it also foreshadows the pre-dominant sonority of the retransition; even at its first appearance, then—emphasized as it is in a way disproportionate to its surroundings—the chord is the functional intermediate harmony simultaneously in each of the main tonal areas of the movement.

Issue Two: The movement opens in a very dramatic way, with an alternation between recitative and arioso that establishes the tonic through a prolongation of its dominant in mm. 1–6. A second recitative follows,[32] but quickly gives over to an *allegro* section that features a chromatically ascending bass line, which reaches V/D in m. 13. The sonority is prolonged for eight measures before continuing to I of the home key in m. 21 at the outset of the transition.

As remarkable as I find this opening to be, I am encouraged to consider anew the implications of these measures after hearing the retransition and the beginning of the recapitulation (mm. 120–52), for the later portion of the movement provides something of a commentary on the earlier material. The prolongation of V in the development section extends from the retransition through the opening of the recapitulation. The time given over to the dominant, coupled with the phrase extension exhibited in recitative one in the recapitulation calls for a reassessment of the opening of the movement. The earlier portion of the work now seems understated—a truncated version of what is to come. It is as though the piece begins "mid-stream," for when I think back to the sounding of m. 1, I now sense that I am engaging a passage that is already in progress.

In summary, issue one in my discussion of the *Tempest* identifies an earlier event that has a bearing on my understanding of something that occurs later in the movement. The opposite, however, obtains with respect to issue two. But the mere recognition of "earlier" and "later" suggests that neither of these reassessments compromises the authority of the timeline, and this is an important point, for it implies that the unidirectionality of time remains unchallenged in the *Tempest* Sonata. Herein lies a fundamental difference between the Beethoven and the Debussy, for I have already contended that in the *prélude* spatiality is prioritized to the point of fracturing the timeline. This is demonstrated in the relationship between sections A1 and B1 in *Brouillards,* which, although contiguous, differ so radically in character as to encourage their conceptualization as distinct and unique blocks—blocks that are closed off from one another. However,

once reasonably comfortable with a reading of either section as an independent entity, my interest turns to an appraisal of how the units fit together, one that is grounded on an analytical strategy that "provisionalizes" the presented order of the large formal units.

Distinct modes of argument have been adopted in the discussion of these two pieces. My involvement with the *Tempest* Sonata reflects what Hayden White describes as an organicist's analytical strategy, while my narrative on *Brouillards* is in accordance with White's notion of a contextualist's world hypothesis.[33]

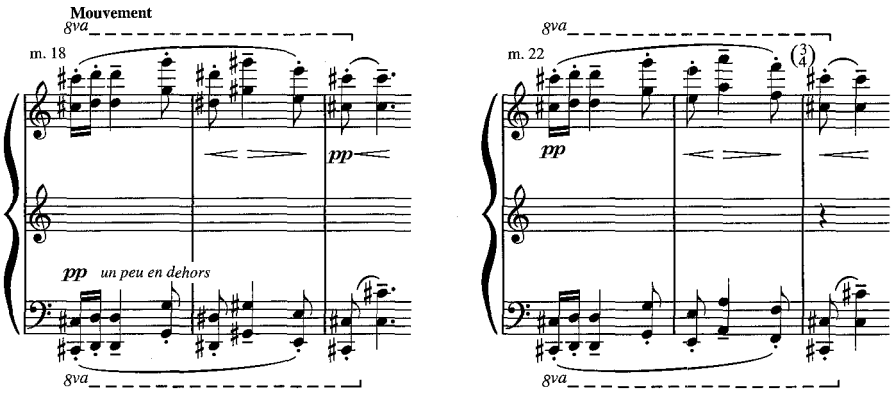
The organicist regards "individual entities as components of processes which aggregate into wholes that are greater than, or qualitatively different from, the sum of their parts" (White 1973: 15). Thus, my reassessment in the *Tempest* of the B♭ sonority as a functional pre-dominant simultaneously in two tonal areas ascribes to each appearance of the chord something qualitatively greater than what is entailed in an understanding of the events as ♭II/A and ♭VI/D, respectively. The abstract quality that this reading sponsors is another characteristic of the organicist's mindset and is the result of favoring an integrative process over the depiction of individual elements (White: 16).

The organicist's narrative is structured so as to "depict the consolidation or crystallization, out of a set of apparently dispersive events, of some integrated entity whose importance is greater than that of any of the individual entities analyzed in the course of the narrative" (White: 15). My reassessment of the opening recitative and arioso in the *Tempest* in the light of the later events of the retransition and the beginning of the recapitulation represents an alignment of dispersed events for the express purpose of establishing for the earlier passage a meaning beyond that which it initially assumes—and yet "earlier" remains "earlier."

The contextualist's position differs from that of the organicist in a number of ways, but chief among them is the avoidance of both "the abstract tendencies . . . [and] the general teleological principles postulated by the organicist" (White: 18).[34] Contextualism involves these three distinct stages (White: 18): (1) some element of the compositional field is isolated—in *Brouillards* A1 and B1 are isolated and examined first as closed units; (2) events that recur in a number of isolated or closed units are identified as linking threads—in *Brouillards,* intersectional motives as seemingly diminutive as the dyad assume significance as linking threads; (3) these threads are traced outwards within the context of the event, back- and forward in time, thus determining their influence on other and subsequent events—in *Brouillards,* what occurs in mm. 22–24 represents a moment pregnant with associations back- and forward in time. I begin by considering section B1 as an isolated unit. In mm. 22–24 the line ascends

to a higher pitch (A7) than was attained in mm. 18–20, and therefore nearly breaks free from the bonds of the earlier passage (see ex. 16, below).[35]

Example 16: A comparison of mm. 18–20 and mm. 22–24.



The C♯ that concludes the gesture in m. 24 is a telling event. Rather than establishing a passive association between two passages, the pitch acknowledges the forward influence of the initial on the later statement of section B1; the anticipated arrival on D7 in m. 24 never materializes, denied, as it were, by the gravitational pull of mm. 18–20.

But if the melody in mm. 22–24 is somehow stifled by the authority of a stronger voice, then what it loses in independence it reclaims in associative value with other moments in the *prélude*. A reasonable reading of these bars notes the focus on the linear unfolding of the D-minor triad in mm. 22–23, which then yields to the singleton C♯ in m. 24, and, depending on which of the timelines is being followed—the real or the metaphorical—the passage either recalls or foreshadows events of m. 2 and m. 16 (refer to ex. 13, p. 38, above).

One further aspect of the contextualist's project must be elucidated. The contextualist regards the compositional field (White's historical field) as a

> 'spectacle' or richly textured arras web, which at first glance appears to lack coherence and any discernible fundamental structure. But . . . the contextualist insists that 'what happened' in the field can be accounted for by the specification of the functional interrelation-

> ships existing among the agents and agencies occupying the field at any time. (White: 18)

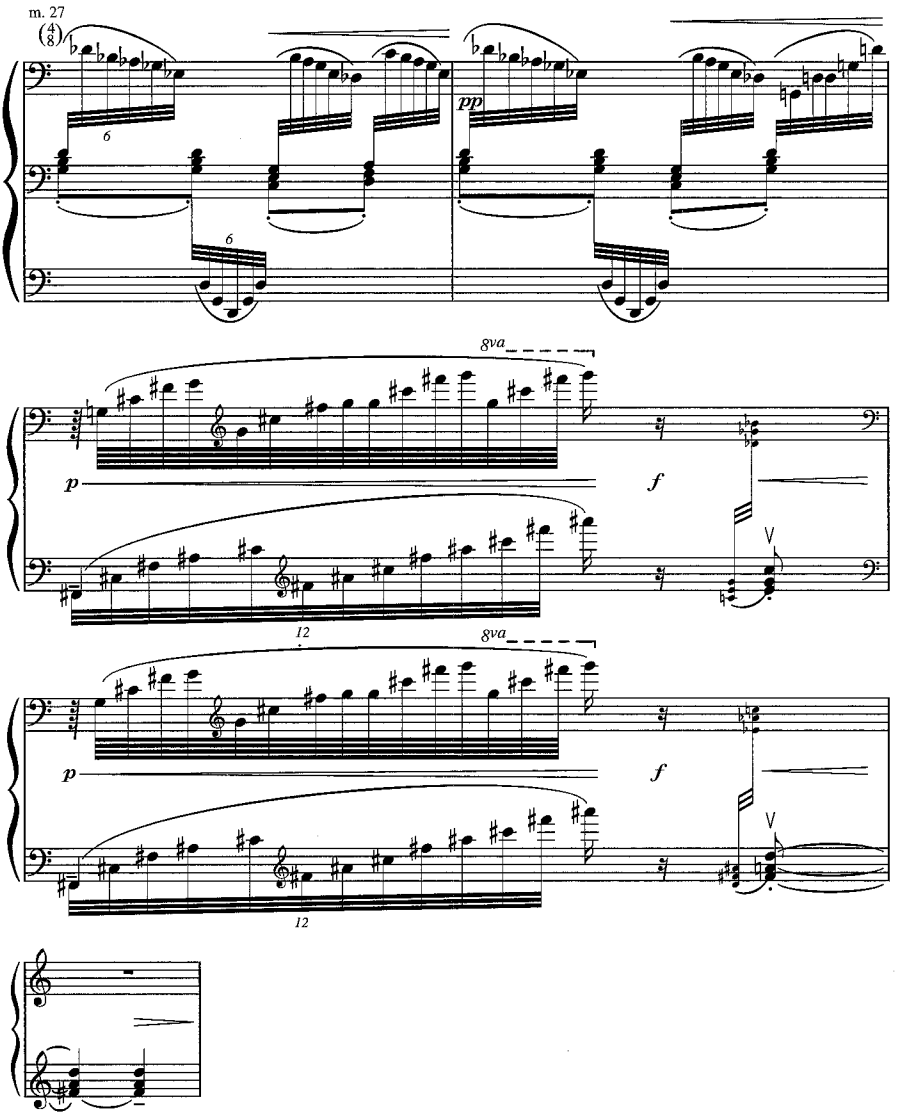
The imagery here is evocative. Spectacles have the potential to overwhelm, and if one attempts to take in every detail simultaneously, sensory congestion will preclude focused reflection on individual entities within the whole. Excessive attention to any single component in the web is equally onerous, and prohibits the whole from amounting to anything other than a series of independent events. It is here, however, that the contextualist's notion of linking threads extending outward from the individual entity reemerges and facilitates access to other and no less individual entities in the web.[36] Thus the contextualist's argument is not directed at total integration; in making some connection with other elements in the field, however innocuous, linking threads function as vehicles that transport the auditor from one entity to another, and, ultimately, eventually disappear into other events, or converge to cause some new event. In White's words, the contextualist's aim is to link threads "together in a chain of provisional and restricted characterizations of finite provinces of manifestly 'significant' occurrences" (White: 19).

On with It, Back in Time's Time

The first measures of A2 represent an exact repetition of the opening of *Brouillards,* and as such reintroduce the issue of field depth, wherein the L.H. material advances to a position that is perceptually nearer to the auditor than is the R.H. material. But a break with the past arrives in m. 27, and from that point the unfolding drama solicits a new type of engagement, forcing me to adopt different metaphorical associations through which to communicate my reading of the piece. The divergence does not immediately affect the illusion of a distance-based hierarchical relationship between the two strata—if anything, the C triad is kept proximate in mm. 27–28 by the allusion to a harmonic progression involving the triad and its dominant.[37]

The significance of the break with A1 cannot be fully appreciated until mm. 29–31 have sounded, at which time we come to recognize that the remainder of A2 is fertile ground for a contextualist approach to analysis, since it admits of commentary concerning continuity of line—that is to say, an issue specific to the section itself—and comprises cross-references both back- and forward in time. Example 17, below, reproduces the complete passage. On one level, the passage serves as a transition into section C (mm. 32–37) while maintaining an association with subsection two of A1. The details of these connections will be treated shortly, but only after unraveling issues specific to the later bars of A2 by focusing on the section as a closed unit.

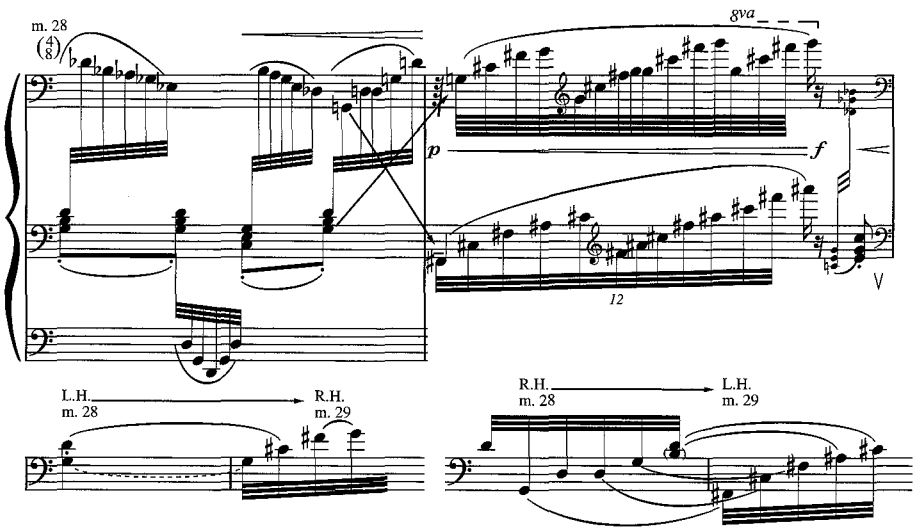
Example 17: *Brouillards,* mm. 27–31.



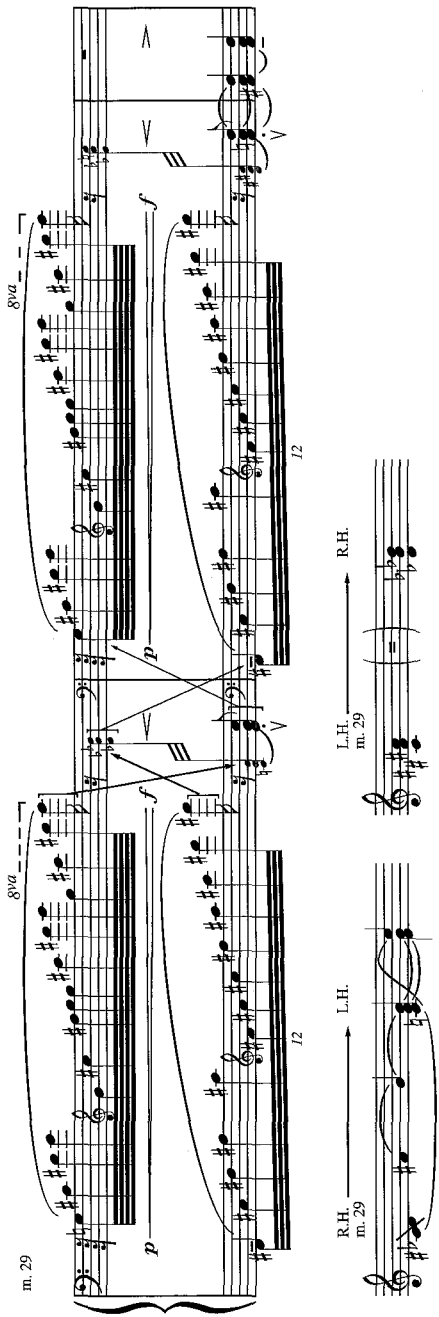
The reference-frame realignment that occurs between subsections one and two in A1 mandates that the gestures ascribed to R.H. and L.H. retain their independence as integral units. Mapping the argument onto the image of the Necker cube yields the following: R.H. material must at all times represent one of the two cube faces oriented toward the observer, and L.H. material the other. Stated more simply, R.H. material cannot be taken over in the L.H., nor can L.H. material move into the R.H. But the later portion of A2 is predicated entirely upon the migration of material from one hand to the other.

The initial switch occurs in m. 29, and features registral connectivity in the role of facilitating agent. Example 18, below, argues the case of linear continuity from the standard of voice-leading, and in the process lays bare that which had been performed exclusively in one hand is for the first time in the piece taken over by the other.

Example 18: *Brouillards,* mm. 28–29, voice-leading continuity.



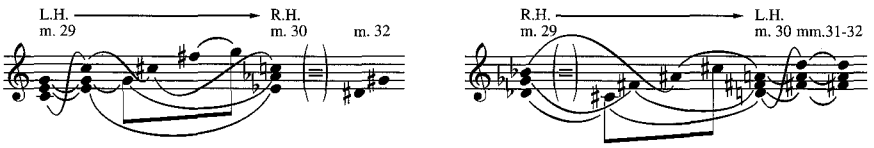
Example 19, below, traces the path of each of the two lines in the simultaneous exchange from voice to voice (mm. 29–31).



Example 19: Voice migration.

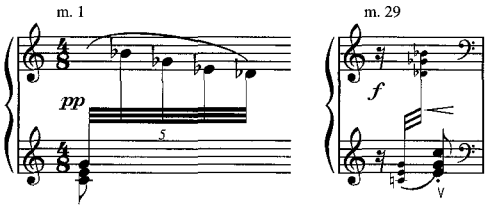
Following the initial transfer on the downbeat of m. 29, two additional exchanges occur. In the first, the grace-note figure attached to the 6/3 triad returns the F♯ gesture (enharmonically spelled in G♭) to the R.H., and the referential C-major triad to the L.H. One measure later, the figure is presented a whole-tone higher, but it is derived not so much by transposition as it is by voice-leading association with its counterpart. Example 20, below, illustrates. In the example, common-tone connections and semitonal shifts denote a transfer among the voices that belies the disruptive effect of parallel voice-leading were transposition to be considered the source of the later material.[38]

Example 20: The linking nature of the grace notes: the "Law of the Nearest Way."



The reading in example 20 is intriguing in quite another way, for it facilitates discussion concerning a point of contact between sections A1 and A2, *and* a link between A1, A2, and C. I have already spoken of a back-reference from mm. 29–30 to mm. 10 ff. that turns mainly on the foregrounding of the F♯ sonority in these segments of *Brouillards.* Of equal note is the association between the final beat in m. 29 and beat one, m. 1, for pitch content is nearly identical in each location (see ex. 21, below):

Example 21: *Brouillards,* m. 1 (beat 1) and m. 29 (beat 4).



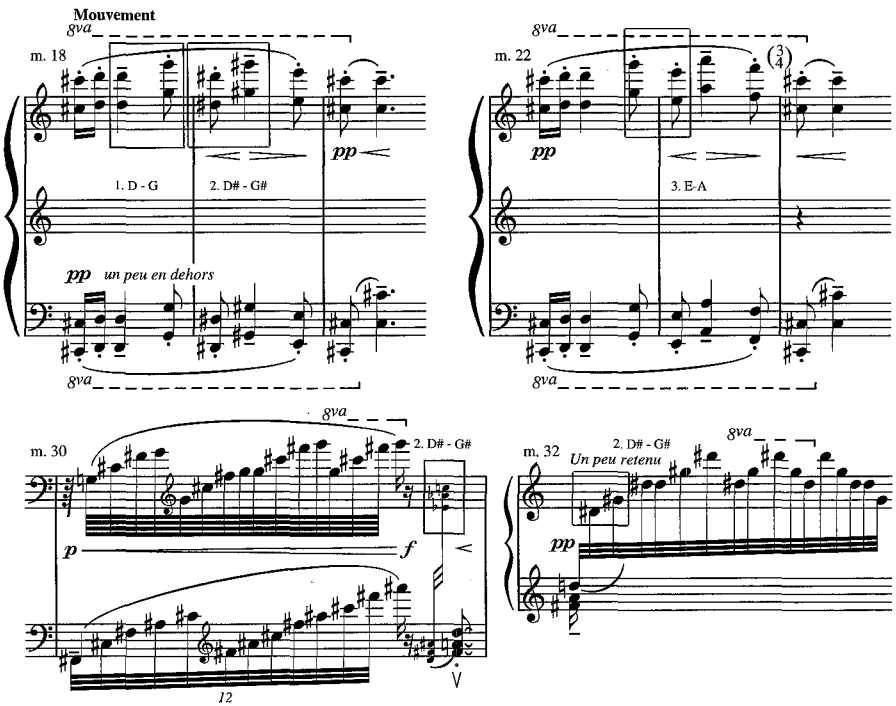
* * *

Much of my narrative about *Brouillards* has advanced on two fronts: I have been concerned with the structure of individual sections and identifying in them associative threads that allow me to contextualize what is "new" in the light of past events. Section C (mm. 32–37), as with each of the other sections thus far encountered in *Brouillards,* presents unique

characteristics, but let us take this as given and turn immediately to an account of source material that motivates these six bars. In so doing, I mean to demonstrate that nearly everything that happens from m. 32 to the close of the piece has some connection with earlier moments.

Intersectional cross-references provide a sense of coherence, but they are operative in ways that are not always obvious, and these concealed cross-references occupy an architectonic level that is not subject to direct teleological control. In a trivial sense, the pitch content of the 32nd-note arpeggiations in the upper voice in mm. 32–35 is derivative of the R.H. portion of the grace-note gesture in m. 30, but this same material is also resonant with an aspect of the monophonic line of B1—the ascending leap of a perfect fourth presented at three pitch levels (see example 22, below).

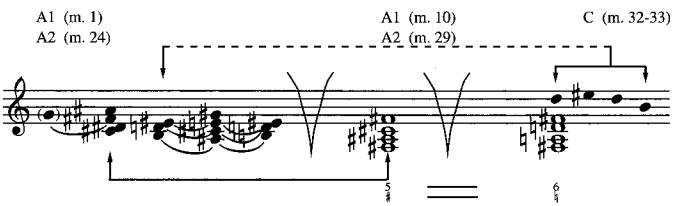
Example 22: *Brouillards,* mm. 18–20, 22–24, 30, and 32.



To be certain, significance accrues to the motivic ascending fourth with each recurrence, but the various guises in which the dyad appears in the different sections of the piece renders nearly impossible a hearing of the cross-referential associations that transpire in real time. Yet, my awareness of such low-level connections remains intact, and by facilitating access among sections so diverse in character as to be seemingly unrelated, these events function as unifiers: they counter claims that *Brouillards* is a random assemblage of totally disparate events.

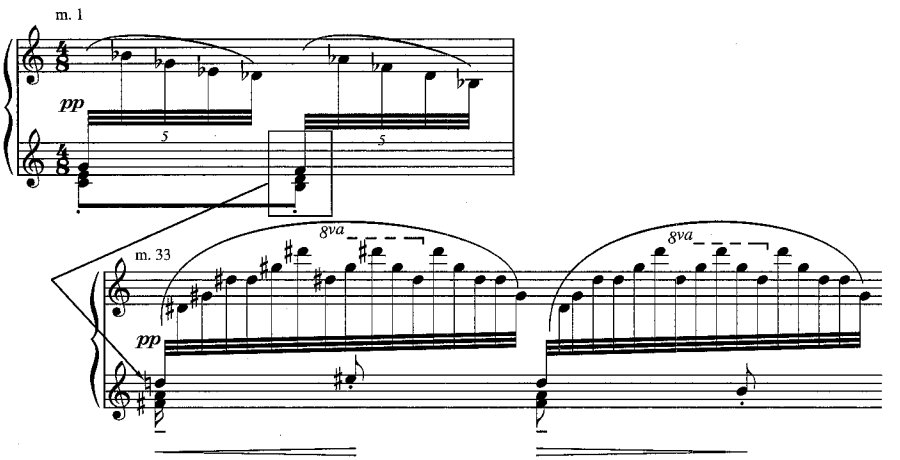
I am transported into section C in other compelling ways, but in order to demonstrate, I must risk an example that comes dangerously close to advancing the organicist's narrative object of total integration. Example 23 (below) returns to an earlier example in this article and reactivates what had been presented as a liberal rewriting of m.1, previously utilized in order to posit a dispersed voice-leading connection realized only with the arrival of the focal sonority in m. 10. It is now possible to extend that argument into section C by recognizing in the later measures of the piece a sonority whose generation from an F♯-major chord involves 5–6 voice-leading technique.[39]

Example 23: *Brouillards,* triple link into section C.



The motivic dyad (the perfect 4th) and the dispersed voice-leading association account for the raw material—the pitch content—in m. 32. To this is added another cross-referential thread embodied in the section's emerging melody line from m. 33 onward. The succession of eighth notes in that bar presents a linear unfolding of the B-diminished triad—the referent of which is expressed vertically in the head motive of section A (see ex. 24, below):[40]

Example 24: *Brouillards,* m. 1 and m. 33.



Section C, then, is the meeting place of elements that have played distinct roles in the *prélude.* Through aural association with past events, a certain coherence is guaranteed these measures; in a contextualist's sense, I am transported via linking threads into a distinct entity (section C). But these threads run tangential to the actual timeline of the piece, and do not mobilize linearity, for the chaining of such items marks an act of creation on the part of the interpreter.

In tonal music, the narrative of the piece permits narratives about the piece to focus on direct cause-and-effect relationships, for the interaction of paradigmatic and syntagmatic domains ultimately takes place within the object itself (i.e., the composition). Our inventories of personal beliefs in tonal music (paradigmatic relationships) are well-defined by virtue of repeated exposure to them in diverse bodies of music throughout the common-practice era. The union of correlates in tonal music generates a collective meaning that is given over in the diachronic unfolding of the actual composition (syntagmatic relationships). My arguments concerning details in the *Tempest* Sonata represent manifestations of a specific definition of the interaction of elements of the paradigmatic and syntagmatic domains, wherein the syntagmatic is not just linear, but involves what Patrick McCreless has called "the linear distribution of elements of a paradigmatic inventory in terms of established rules or principles" (1991: 149).

The rules or principles to which McCreless refers often treat of the interrelationship between tonality and form; such was the case with my account

of the B♭ sonority in the Beethoven. Even though I cannot predict in advance the exact events that will come to pass, my engagement with the piece begins before the sounding of the first note. My preconceptions about sonata forms and tonality access a host of canonical features stored in my long-term memory. I imagine, for instance, a number of possible tonal pathways through the first movement of the *Tempest* and a grid upon which the higher-level tonal relationships might come to my ears. All of this is to say that I can predict quite a bit about what the topography of the piece is likely to be before the actual events of the piece pare down these preconceptions and bring them into greater focus.

The specific types of long-range goals that I envision in tonal compositions, and the ways in which these are made manifest in specific works are well-suited to the organicist's presupposition of total integration. As an analytical strategy, it is sometimes wise to challenge this tack—viz. to insure that it does more than merely "assume everything that it sets out to prove";[41] and yet, while it would be simple-minded to advocate that the organicist's approach is the only or even the best way to engage tonal music, there is no real advantage in suppressing the types of information that I can take into a work like the Beethoven. The potential for greater understanding is not compromised by knowing in advance where it is that a piece might be headed. With the Debussy, however, where the timeline is not a metaphor for the tonal plot of the piece, I am forced into a different mode of argument. There is nothing in *Brouillards* equivalent to the canonical features that I can bring to a first encounter with the Beethoven—features devolving from the assumption of a specific type of goal-directedness.

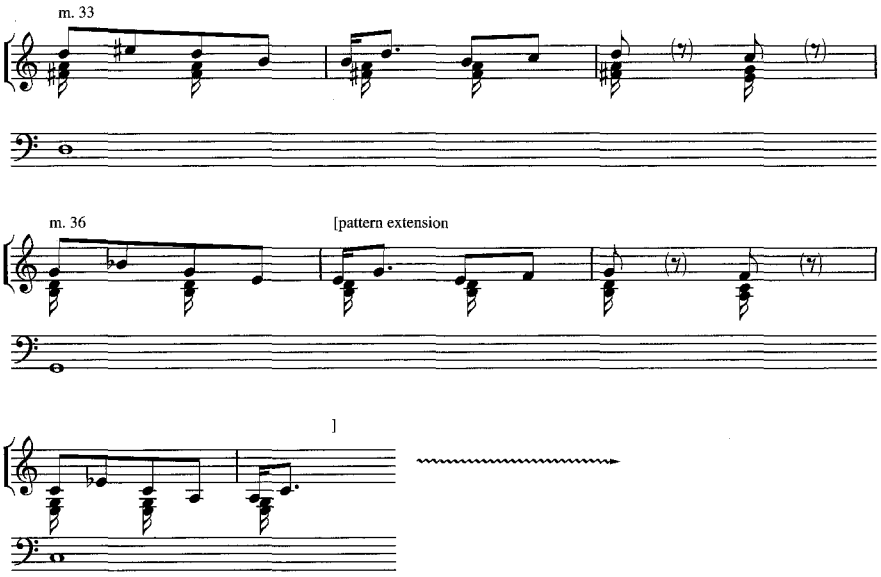
In the absence of access to the types of well-formed grids available in the analysis of tonal music, my narrative account of *Brouillards* cannot begin until I actively engage the events of the piece as they unfold. Thus, the sorts of claims that I am making concerning continuity within and among the sections of the *prélude* are, by necessity, measured only against the internal construction of this specific work. But the methodology is not without reward, for it sponsors a hypersensitivity that permits nothing to be taken for granted; nowhere is this more evident than with respect to beginnings and endings of sections, as the next and final portion of the article sets out to prove.

The Remainder of the Piece

In discussing various pathways into section C, I have mentioned that all of the raw material for this distinct portion of the piece can be traced to earlier events.[42] But the melody and its setting have a character of their own, and are sequentially treated in section C; the sequence is broken off abruptly at the conclusion of m. 37, but were it to have run its course, it

seems probable that a third phase would have commenced with a C-major chord. Example 25, below, reproduces the L.H. portion of mm. 33 to 36 as it appears in the score, but then ignores the interruption in the pattern that arrives in m. 38, and instead continues the established pattern to a mythical next phase.

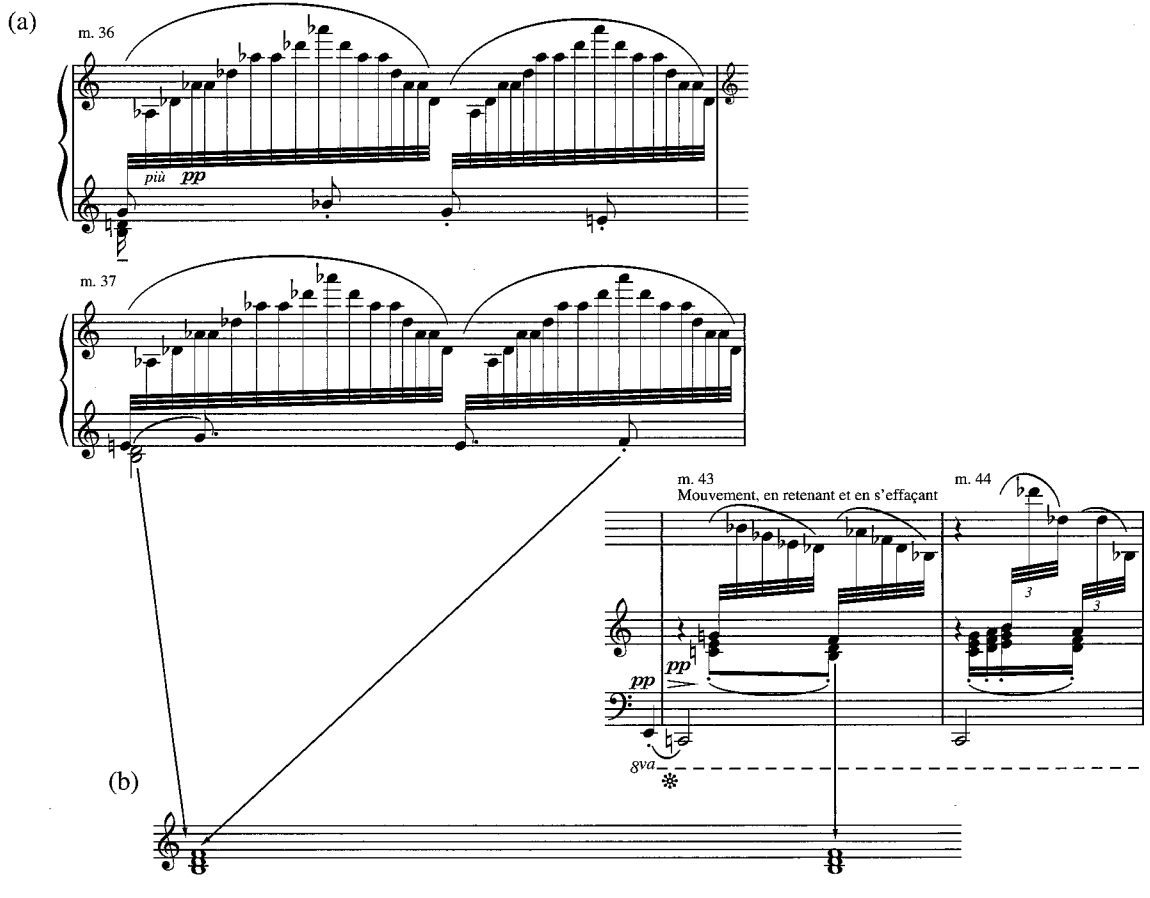
Example 25: *Brouillards,* mm. 33–36 (L.H.) and a pattern extension.



Example 25 also posits that the sequence is modeled on a fundamental bass that features motion by descending fifth, and is intensely goal-oriented toward the C-major triad on the downbeat of my bracketed m. 39.

Had the events of example 25 come to pass, the arrival on C might have signaled that a return of the head motive was imminent, for the tonal orbits of A1 and A2 foreground that sonority in their first measures. In breaking early with what he has been so careful to establish, however, Debussy abandons neither the implication of a motion toward C, nor the corollary that its arrival facilitates restatement of material from the opening of the piece. It is just that the realization of these implications is very subtly effected, and reaches across the intrusion of B2 in mm. 38–42. Consider example 26, below, which reproduces mm. 36–37 and mm. 43–44.

Example 26: (a) *Brouillards,* mm. 36–37 and 43–44; (b) a linking thread.

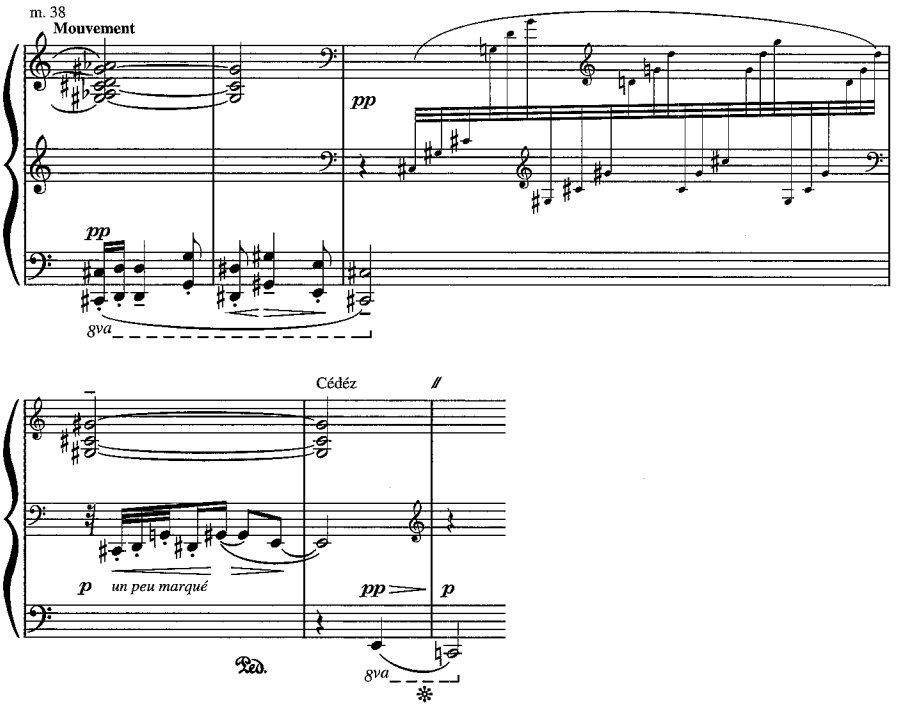


Example 26(a) indicates that m. 43 is marked by the appearance of what proves to be the lowest pitch in the piece, C1, *and* the return of the head motive, which together usher in the final section of *Brouillards.* Example 26(b) exposes a point of contact between the end of section C and the beginning of section A3. The identity of the ultimate verticality in the L.H. of m. 37 and the triad that sounds on the fourth beat of m. 43 is vivid.[43] What this suggests is that while B2 renders the two sections noncontiguous, it can only interrupt, and not deny, continuity from the end of section C to the opening of A3.

* * *

Section B2 differs from B1 in ways that reveal it to be a weaker version of its correlate (see ex. 27, below).

Example 27: *Brouillards,* section B2 (mm. 38–43).



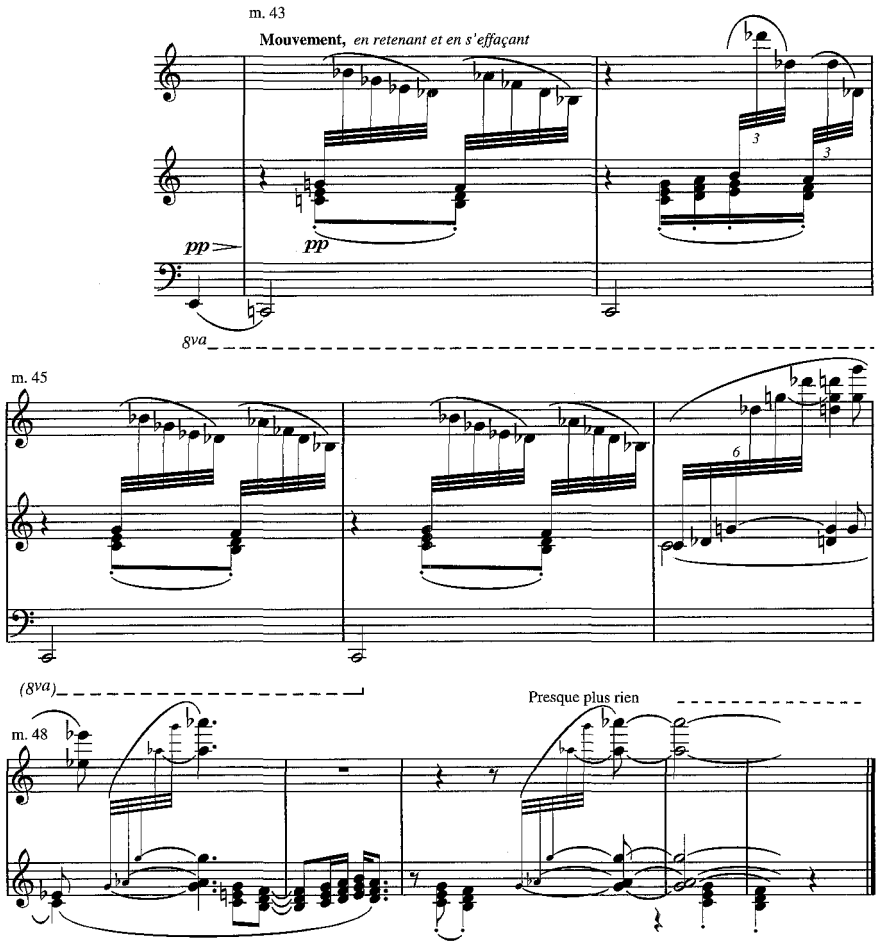
A reduction in the overall tessitura of the later melodic line begins by confining the octave doubling to the L.H. alone in mm. 38–40, and then dispenses altogether with the doubling in mm. 41–42. In addition, B2 is not monophonic. This distinctive characteristic of B1 was responsible, in part, for sponsoring a reading of that section as a belated precursor of material that preceded it. The effect rendered in B2 is confined to a local context —its chief purpose is to separate section C from A3.

These and other variations in B2 suggest that there is a provisional aspect to everything from the end of section C onward. B2 interrupts the established sequence of the previous section before the sequence can reach its logical conclusion; but B2 itself is enfeebled in m. 43 by the arrival of the bass pitch C1 in place of an anticipated C♯. The effect is jarring, for the tonal trajectory is well established in mm. 38–42; and yet at the last possible instant a rerouting wrenches the directedness of the line from one track to another a semitone removed.[44] A parallelism exists, then, in the treatment of sections C and B2, for each is similarly muted at its own conclusion. At the very least, neither section appears to be strong enough to sustain a drive toward adequate closure. Perhaps it is simply that C and B2, in turn, succumb to the authority of a stronger unit, but this argument cannot be sustained given the events of A3, where any sense of resolution seems an impossibility. In point of fact, the most convincing articulation in the entire piece is the one that arrives earliest, and draws to an end A1 (m. 17). Ironically, the capacity to effect closure diminishes in subsequent sections of *Brouillards*.

Example 28, below, reproduces what I am calling section A3, mm. 43–52. Compositionally, this may represent the most sophisticated portion of the work, for elements of sections A and B mix without standing in opposition. Instead, the juxtaposition is symbolic of a two-fronted struggle for recognition, a struggle that remains unfulfilled at the end of the *prélude*.[45]

In drawing this article to a close I will consider, in turn, Debussy's treatment of material from sections A and B, before turning to a brief account of the incidental interaction of the two.

Example 28: *Brouillards,* mm. 43–52.



The first four measures of A3 present vestiges of the opening of the composition; but each new attempt at a complete presentation of the initial gesture of *Brouillards* is held in check, as it were, by the accented and periodic rearticulation of the bass pitch C1. After the third sounding of the head motive, the line goes dormant in mm. 47–48, where it is represented only by the sustained pitch C4. When reactivated at the end of m. 48, the head motive is presented without the attendant quintuplet gestures, thus eliminating the background issue of near-and-far upon which so much has turned. In the final two measures of the piece rhythmic augmentation and

a further liquidation conspire to expose the motion from the C-major to the B-diminished triads. This last presentation of the two chords is very intriguing, for a reversal in their relationship has taken place over the course of A3. Prior to this section, I have always sensed that the major triad is principal and the diminished triad prolongational; but without the attendant quintuplet, and deprived of directed motion toward its dominant (cf. mm. 1–4 and 24–27), what had formerly stood as principal event has become a neighboring sonority of the diminished triad.[46]

In m. 47 a stylized version of the main melody from B1 and B2 begins to unfold. This represents a more powerful entry of the line than was heard either in m. 38 or in m. 41. Liquidation greatly affects each of the three statements. I have already spoken of the gradual elimination of octave doublings in the previous two encounters. While the issue is redressed somewhat in mm. 47–48, it cannot compensate for the fact that successive entries break off at earlier points in the gesture: the first statement (mm. 38–40) is complete, and resembles most closely its source material from m. 18; in mm. 41–42 the line fails to gain the anticipated final C♯; in mm. 47–48 the apex is reached (here G♯ is respelled as A♭), but the descent through the C♯-minor triad is missing entirely. If success is measured not in the striving toward but in the attainment of a goal, then the final entry of the line must be deemed the least convincing.

Over the course of the last six measures, then, each of the melodic strands continues to lose integrity. But as their respective capacities diminish, the paths of the two lines converge until the ultimate statements amalgamate, and in their union effect a reference to C major, toward which neither line on its own seems headed. I have already spoken of the reversal in roles that obtains between the C-major and the B-diminished triads, wherein by the end of the piece the former becomes a neighboring event of the latter. But this relationship is provisionalized by the curious final flourish of material from section B that begins in m. 50 (refer to the antepenultimate through the ultimate measures of the piece, in ex. 28). Independent of the motion in the "other" line, the singleton A♭ and its lower-neighbor G are paired, and render a final statement of a motive—the minor second—the significance of which as a unifier across large stretches of the piece has been noted.[47]

These pitches, however, are also heard in conjunction with the sustained B-diminished triad of m. 50, and even resonate with the reiteration of that chord in m. 52. The resultant sonority effectively refocuses attention on the C-major triad, for the ultimate verticality of the piece is construed as V^{9} of C. I am not suggesting that in the final analysis *Brouillards* is about C major, or even that the piece concludes with a chromaticized half cadence in that key. Such claims would miss a fundamental point,

specifically, that while the *prélude* ends, it is anything but closed. Neither of the two independent melodic events attains a significant point of articulation; furthermore, the confluence of the lines generates a third event equally inadequate to the task of punctuating all that has gone before it. In a metaphorical sense, rather than achieving closure *Brouillards* simply collapses under the weight of all of its obligations.

Notes

1. The term "delay of the inevitable" is used by many authors; see, for instance, Kramer 1988.

2. On Paradigmatics and Syntagmatics in general, see Saussure 1959 and Culler 1986. On the application of Saussure's theories to music, see McCreless 1991.

3. I do not mean to suggest that issues relating to temporality are ever anything but complex—regardless of the composer, the period, or even the genre. For a provocative article on temporality in later-nineteenth- and early-twentieth-century music, see Lewis.

4. While the formal interpretation given in figure 1 seems logical, other equally valid readings may exist. For instance, Parks considers the piece to conform "to a kind of rondo scheme" (1980: 124). His formal plan follows:

Figure 2: Parks's formal plan for *Brouillards*.

BARS:

1 3	5 7	9 17	19 23	25 27	29 31	33 37	39 43	47 51
A	tran-sition #1	B	tran-sition #2	A	tran-sition #3	C	tran- A sition #4	Coda

5. A definition of two of White's distinct modes of formal argument—contextualism and organicism—is found beginning on p. 38, below.

6. Fred Everett Maus (1988) speaks of the need to unify technical and emotive descriptions of music: rather than regard the two as rival factions in an irreconcilable schism, theorists must begin to focus on the means by which each can inform the other. Here I am testing Maus's conviction that animism is valuable in expressing tangible aspects about music.

7. "Left hand somewhat set off from the right hand." Throughout this article, I use the abbreviations L.H. and R.H. to stand for left hand and right hand, respectively.

8. An additional difference between L.H. and R.H. materials in m. 1 is reflected in the respective pitch class content of each line. The L.H. may equally be regarded as a "gapped" major scale—omitting $\hat{6}$—or, in terms of members of an unordered pitch-class set, as 6-Z25 in Forte's labeling system. At any rate, the accretion of all pitches in the L.H. yields an assemblage of notes that cannot be

arranged symmetrically. By contrast, the eight distinct notes presented in the R.H. in the first measure of the *prélude* represent one example of the symmetrical set 8-10 (0 2 3 4 5 6 7 9). For further discussion of the application of set-theoretic principles in the analysis of Debussy's oeuvre in general, see Parks 1989 (especially chapter 2, "The Pitch-Class Set Genera"). Parks (1980) has also applied set-theoretic principles in an analysis of *Brouillards.*

9. We will confront this very issue, namely, the decay into the B triad again at the close of *Brouillards;* in the later passage, however, the relationship between the two sonorities is reversed.

10. The precise meaning of the spatiality metaphor will be increasingly refined as this section of the article unfolds.

11. Such long-range foreshadowings are not uncommon in music, but they are also standard fare in novels and other works of fiction. Roland Barthes (1988) points out that seemingly innocuous events often represent hinges upon which entire narratives turn. Barthes suggests that in the act of interpretation, narratives units (the term given to the smallest items of information) are linked in such a way that their union provides a collective meaning far greater than the sum of the individual parts.

12. Concerning "liquidation," see Schoenberg (1967: 58 ff.). On "planing," see Kostka and Payne (2000: 511), who suggest that the terms "parallelism" and "planing" are essentially synonymous; in their words, the use of the latter with respect to twentieth-century music avoids "the pejorative connotation of the formerly used term [parallelism]." As early as the 1920s, however, Charles Koechlin, theorist, composer, and long-time associate of Debussy, was condoning the use of parallel motion in contemporary music as a matter of style. In a sense, Koechlin advocates that theory must recognize changes in compositional practice—a case in point relates to differing views throughout history toward motion by parallel fifths and octaves. Koechlin's point is that parallel fifths and octaves were really only forbidden in the common-practice era. "Moreover," he writes, "the charming works of Debussy, Ravel, and so many other contemporary musicians, proves *ipso facto* that this prohibition could not be absolute." [D'ailleurs les réalisations charmantes de Cl. Debussy, de M. Ravel et de tant d'autres musiciens contemporaines, prouvent *ipso facto* que cette interdiction ne saurait être absolue.] See Koechlin (1928 1:14).

13. "Articulation" is favored here over "cadence," since I wish to avoid any reference to the specific connotation that that term holds in common-practice music.

14. But see ahead, in m. 27.

15. Each of mm. 7 and 14 breaks with the character of what precedes it.

16. Of the many recurrent themes found in Debussy's critical writings about music, perhaps none is more celebrated than his veneration of the intangible role of "mystery" as a means of expressing his contempt for the theoretical enterprise. The quotation that follows was first published in 1913 (coincidentally, the year that Book Two of the *préludes* went into circulation) in the monthly magazine *Société Internationale de Musique.* "We should constantly be reminding ourselves that the beauty of a work of art is something that will always remain mysterious; that is to say one can never find out exactly 'how it is done.' At all costs let us preserve this element of magic peculiar to music. By its very nature music is more likely to

contain something of the magical than any other art." Cited in Debussy (1977: 279).

17. It will be remembered that the D♭6 is marked in another way, for it is registrally linked to the F♯5 that arrives in m. 10 (see p. 25, above).

18. For a brief summary of the differing viewpoints on the subject see Bruce and Green (1985), and especially their chapter 5. The three images in figure 3 are discussed in countless texts relating to visual perception. In addition to the work just cited, see, for instance, Forgus and Melamed (1976), and Intons-Peterson (1996).

19. "Somewhat outside," or "somewhat beyond."

20. C♯1 is the lowest pitch, and A7 the highest in section B1.

21. For speculative thought concerning the influence of early music on Debussy, see D'Almenda (1950).

22. Contemporaneous, that is, with 1913 (the publication date of *Brouillards*).

23. Of course, other equally valid interpretations exist. One might, for instance, point to the relationship between sections A1 and B1 as representative of Jonathan Kramer's "Moment Time," wherein "moments are self-contained sections, set off by discontinuities that are heard more for themselves than for their participation in the progression of the music" (1988: 50).

24. Such stories often unfold as first-person narratives and as quasi-autobiographical tales.

25. Lewis 1996: 146. In Western culture, philosophical discourse on time reaches back to antiquity, and Augustine's famous passage from *Confessions* seems today to be as relevant as ever: "What is time? Who can explain this easily and briefly? Who can comprehend this even in thought so as to articulate the answer in words? . . . What then is time? Provided that no one asks me, I know. If I want to explain it to an inquirer, I do not know" (1991: 230).

26. Many of the observations that I will make with respect to mm. 18–20 also pertain to mm. 22–24; a discussion concerning the unique character of the later measures follows.

27. Note the direct similarity in section B1 where the head motive in m. 20 is preceded by the linear presentation of the C♯-minor triad with emphasis—via tenuto markings—placed on G♯7 and C♯5 (see ex. 11, above).

28. The fourth from D♯ to G♯ provides a forward reference to an event that occurs in section C (mm. 32 ff.), where the pitches D♯ and G♯ constitute the upper-voice accompaniment to the principal melodic line.

29. This would account for my heightened sensitivity to the types of intersectional links discussed in the preceding portion of the article. Motives as small as a dyad become vivid when the larger formal divisions of a composition seem to hold so little in common. Kip Wile makes a similar point in a paper presented at Music Theory Midwest (Louisville, May 16, 1998).

30. Once again, I draw attention to Jonathan Kramer's insightful discussion of the complex topic of temporality in music. In addition to "Moment Time" (see note 23), Kramer names and describes other orientations toward time prevalent in Western music from c. 1600 to the present day. In total, Kramer offers five cate-

gories: "Goal-Oriented Linear Time"; "Multiply-Directed Linear Time"; "Moment Time"; "Non-Directed Linear Time"; and "Vertical Time."

31. Any number of tonal compositions could have been chosen for the discussion that follows. Joseph Dubiel (1994) argues along lines that underscore my thesis concerning the Beethoven when he makes the point that analyses describe experiences of a piece of music, rather than merely its structure. Sensitivity to issues such as when, and for how long, an interpretation represents a leading possibility with respect to a passage—or even a complete composition—will ensure that analysis itself remains dynamic rather than static.

32. The observation that this recitative prolongs V^6/F takes on added meaning when we recognize that F is to be the key in tonal area two of the Sonatina (see movement two, mm. 31 ff.). Furthermore, the emphasis in movement one on B♭ as pre-dominant for both A minor (tonal area two in the exposition) and D minor (retransition) is interesting in another sense: it serves as something of an aural primer for the key of the Adagio (B♭ major).

33. In his *Metahistory,* White recognizes four distinct modes of argument—Formist; Organicist; Mechanistic; and Contextualist—representing "different notions of the nature of historical reality and of the appropriate form that a historical account, considered as a formal argument, ought to take" (1973: 13). I will be concerned here, however, only with the organicist and contextualist points of view. Although White's interests are geared toward an understanding of narrative strategies about history in particular, he posits that his findings apply equally to the social sciences in general, where "different metahistorical presuppositions are the norm . . . presuppositions that generate different conceptions of the kind of explanations that can be used in historiographical analysis" (1973: 13).

34. For the appropriation of White's description of contextualism as it relates to *Brouillards* I make the blatant substitution of "compositional" for "historical." Thus, White's "Historical Field" will be stated here as "Compositional Field"; furthermore, "field" itself will be interpreted in the narrowest sense, and understood to mean the space representing this *prélude.* Those familiar with White's theories will recognize a reductive bent in my substitution, which is itself suggestive of a mechanistic tack.

35. This information was presented earlier in the article, but warrants reiteration in light of my discussion concerning contextualism.

36. A further analogy with tapestry may be helpful: regardless of the intricacies of the design, warp and woof are invariably discernible, and at a structural level represent elements that maintain the integrity of the whole.

37. It is owing to the unconventional voice-leading in the first part of A2 that mm. 27–28 remain an allusion to a functional harmonic event. David Lewin (1987) demonstrates that while instances of parallel voice-leading similar to what is encountered in the L.H. of mm. 24–28 in *Brouillards* abound in Debussy's music, and often carry with them tonal associations, much more is to be gained by assessing each instance of the procedure within the realm of its own orbit rather than against a paradigm of what the event may have meant in a functional diatonic setting.

38. Lewin (1987: 165) coins the term "law of the nearest way" to account for the stepwise and static motion among each of the individual voices in a multi-voice passage.

39. The contrapuntal connection between the F♯-major and D-major chords might even evoke a back-reference to another argument in the article, where I proposed that a latent 5–6 voice-leading technique allowed the E-minor and D-minor sonorities—prevalent in the L.H. towards the conclusion of subsection 2 in A1—to stand, respectively, as substitutes for C-major and B-diminished chords.

40. The enharmonic respelling of F as E♯ (m. 33) keeps vivid an association with the F♯-major sonority of mm. 29–30—E♯ representing the leading tone of F♯.

41. The phrase is found in Kramer (1988: 15–16). Alan Street (1989) goes into great detail concerning the pitfalls of analytical presuppositions, and especially those associated with the organicist's concern with total integration.

42. For instance, the melody itself over the course of mm. 32–37 comprises a single voice, and begins as a linearized unfolding of the B-diminished triad; as such, it is cross-referential to the initial section of *Brouillards.*

43. The relationship is further intensified by the presence of A♭ and D♭, both in the R.H. in mm. 36–37, and in the quintuplet attendant to the B-diminished triad in m. 43.

44. It is reasonable to promote the facilitating agent in this rift as another manifestation of a motivic second, here involving C and C♯.

45. Perhaps the metaphor is somewhat overblown, but consider the fleeting character of the last ten measures, and Debussy's verbal indications in the score: *en retenant et en s'effaçant* and *presque plus rien* [holding back and self-effacing *and* nearly nothing [left] at all].

46. As we shall see, the B sonority is tempered, somewhat, by the presence of the pitches A♭ and G, sustained in the R.H. throughout measure 51.

47. See, for instance, my discussion of mm. 18–24, beginning on page 32, above.

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viewpoint

The Question of Purpose in Music Theory: Description, Suggestion, and Explanation

By David Temperley

In any discipline, it is desirable to have a clear sense of what the goal is. What are we trying to achieve, and how will we know when we have succeeded? Music theory has hardly shirked these "meta-issues." Discussions of the goals of theory and analysis can readily be found; recent debates have centered on the means of confirming or testing a music theory, the relevance of historical and cultural context to analysis, and the relevance of the composer's intentions.[1] Exploration of these issues is to be welcomed, and disagreements need not alarm us when the positions taken are clear and coherent. I will argue here, however, that a serious confusion has been lurking beneath much of this discussion.

Many statements regarding the purpose of music theory may seem unproblematic, if somewhat vague. Probably few would take issue with Claude Palisca's definition in the *New Grove,* which characterizes music theory as "the study of the structure of music" (1980 18:741). Perhaps general agreement would be found as well over the relationship between theory and analysis. An analysis is an investigation of the structure of a single piece; a theory is a more general account of some aspect of musical structure, which guides analyses and is also motivated and informed by them. As Ian Bent has pointed out, however, the problem is where exactly the "structure" of music is to be found (1987: 5). Is musical structure something in the mind of the listener, in which case its elucidation involves the description of (perhaps unconscious) psychological processes and representations? Or is it something that resides in the musical object itself—perhaps, in large part, *not* normally part of the listener's hearing and experience, but revealed by the analyst with the aim of enhancing that experience?

Joseph Kerman, after embracing Palisca's definition of music theory as the study of musical structure, elaborates it as follows:

> When musicians use this term [structure] today . . . they generally mean the structure of total works of art—*what makes compositions work.* (1985: 61, italics added)

This phrase appears often in general discussions of music theory. But what exactly does it mean? If I ask you how something works—say, part of a car engine—I could be asking, "What does it do?" or I could be asking "How does it do what I already know it does?" In the case of music, I could be saying, "This piece has certain effects on me (an emotional effect, a sense of conflict and resolution, etc.). How is it having these effects?" Or I could be saying, "I don't feel that I'm fully understanding this piece; show me a better way of listening to it so that I can appreciate it more." Consider also the following statement, from Matthew Brown and Douglas Dempster:

> Music theory must also be a rational pursuit. By 'rational' we mean nothing arcane, merely that theory helps us illuminate, elucidate, understand, or explain music. (1989: 65)

Here again, the same ambiguity arises. Does "illuminating" or "elucidating" music mean shedding light on our current hearing of the piece, and how that hearing arises, or does it mean enhancing that hearing in some way? All of these statements, then, are noncommittal between at least two purposes. As I will show, each of these purposes finds wide support in the writings of music theorists. Yet they are not only quite different, but, I will argue, are fundamentally conflicting.

* * *

One possible goal for music theory is clearly reflected in this statement by Fred Lerdahl and Ray Jackendoff.

> We take the goal of a theory of music to be a *formal description of the musical intuitions of a listener who is experienced in a musical idiom.* . . . By this, we mean not just his conscious grasp of musical structure; an acculturated listener need never have studied music. Rather, we are referring to the largely unconscious knowledge (the 'musical intuition') that the listener brings to his hearing—a knowledge that enables him to organize and make coherent the surface patterns of pitch, attack, duration, intensity, timbre, and so forth. (1983: 1–3)

Leonard Meyer offers a similar view:

> Understanding and enjoying a Bach fugue or a Brahms sonata does not involve knowing about—conceptualizing—cadences, contrapuntal devices, bridge passages, and the like, any more than being entertained by *Hamlet* involves knowing about syntactic functions, prosodic devices, or dramatic means. . . . Listening to music intelligently is

> more like knowing how to ride a bicycle than knowing why a bicycle is ridable.
>
> This is not to contend that education cannot enhance understanding and hence appreciation and enjoyment. . . . And to this enterprise, critical analysis can certainly make an important contribution. But education is not its primary goal. The primary goal of criticism is *explanation* for its own sake. Because music fascinates, excites, and moves us, we want to explain, if only imperfectly, in what ways the events within a particular composition are related to one another and how such relationships shape musical experience. (1973: 16–17)

Work in music theory that embraces this purpose could be described as "descriptive" or "psychological" music theory: it attempts to describe listeners' unconscious mental representations of music. As both these quotes suggest, such work usually aims to account for the perceptions of a fairly wide population of listeners, rather than just those with extensive formal training, although it will normally confine itself to listeners who have had some exposure to the kind of music being studied. Such work might take the form of an analysis of a single piece, describing mental representations of some aspect of its structure. In other cases—as reflected in the Lerdahl and Jackendoff quote, for example—what is sought is a general theory of some aspect of musical perception, a theory that describes listeners' general knowledge of music and the principles whereby they infer certain structures from certain musical inputs.[2] Such a theory, in turn, might allow us to achieve Meyer's goal: *explaining* why it is that a certain piece, or certain musical features in a piece, bring about a certain experience in the listener.

Seen in this way, descriptive music theory could well be regarded as a branch of cognitive science—the loose alliance of disciplines concerned with the study of cognition, including also cognitive psychology, computer science (especially artificial intelligence), neuroscience, and linguistics. Descriptive music theory shares with these disciplines the goal of explaining aspects of human experience and behavior, and the assumption that the way to do this is by positing mental representations. The importance of this assumption in cognitive science cannot be overestimated.[3] To appreciate its centrality, one need only consider the kinds of concepts and entities that have been proposed in cognitive science: for example, edge detectors and primal sketches in vision, tree structures and constituents in linguistics, prototypes and features in categorization, networks and schemas in knowledge representation, loops and buffers in memory, prob-

lem spaces and productions in problem-solving, and so on. All of these are kinds of mental representations, proposed to explain observed facts of behavior or introspection.

The methodology of descriptive music theory is primarily introspective. This may seem problematic, in view of the fact that the mental structures and processes involved are generally held to be unconscious. But it seems reasonable to suggest that such structures might be made conscious through sustained introspection, or, perhaps, inferred from other representations that are more readily accessible. A useful parallel may be drawn here with theoretical linguistics. The reasoning in linguistics is that, while we do not have direct intuitions about (for example) the syntactic structures of sentences, we do have intuitions about whether sentences are syntactically well-formed (and perhaps about other things, such as whether two sentences are identical in meaning). By simply seeking to construct grammars that model these judgments—linguists reason—we will uncover much else about the syntactic structure of the language we are studying (and languages in general). Similarly, seeking to model our introspective judgments about (for example) the metrical structures of pieces, or expectations of melodic continuation, may lead us to posit other mental processes and structures that are not in themselves consciously available.

Of course, unconscious mental representations of music may be—and have been—explored in other ways besides introspection, notably through psychological experiment and computer simulation. Indeed, these other methods have an essential role to play in testing the hypotheses of descriptive music theory. Together, these various approaches can be seen as constituting the musical branch of cognitive science—what has lately come to be known as "music cognition."

* * *

Much other work in music theory embraces a very different purpose from that espoused by Meyer and Lerdahl and Jackendoff. Consider these three quotes, from John Rahn, Marion A. Guck, and Peter Kivy, respectively:

> To analyze music is to find a good way to hear it and to communicate that way of hearing it to other people. (1980: 1)

> I take it that analysis is the means to change and refine hearings and therefore that, when analysts write analytical texts, we are offering readers the possibility of recreating a hearing that we have found worthwhile. (1993: 307)

> It is, I take it, a truism that the point (or a point) of description is to get us to perceive in the music that which we are describing in it. (1989: 10)

Two quotes from Carl Schachter reflect a similar attitude:

> Of course the deeper levels of structure, by definition, are not as readily accessible to direct perception as are events of the foreground. . . . If they were, there would be no point to our analyzing music. (1976: 285–86)

> In the course of analysis, discoveries often occur. One becomes aware of connections that one had not previously perceived even in a confused or not fully conscious way. But once aware of them, one hears them; if not heard, the analysis is meaningless. . . . [M]usical analysis has value only insofar as it helps us to hear. (1976: 311)

We might call this approach to theory the "suggestive" approach. ("Prescriptive" is also a possibility, but this carries a pejorative connotation that is not at all intended here.) By this view, the objective of doing theory and analysis is to find and present new ways of hearing pieces, not to describe the way people hear pieces already. As with the descriptive approach, we might posit a distinction here between theory and analysis. An analysis recommends a hearing of a particular piece; a theory, on the other hand, offers general principles of musical structure which might be applied to many pieces. Whereas a descriptive theory intends to describe some aspect of musical perception or cognition, a suggestive theory seeks to enhance it in some way. Note the conflict between these two purposes: as suggested by Schachter's first quote in particular, suggestive analysis intends *not* to describe structures and relationships that are already being heard. (The conflict between the two is also clear in Meyer's quote, although here, the opposite view is taken: the goal of analysis is explanation, *not* education.)

Two further points are crucial here. I take it that when analysts say they are trying to get listeners to hear new things in the music, these are things that listeners, at present, do not hear *even unconsciously.* If these analysts were trying to make listeners aware of things that they already perceive unconsciously, then, of course, their purpose would be no different from that of descriptive theory; but this is not the sense I get from statements like those quoted above (although it is difficult to be sure).[4] Another point: to the extent that a suggestive theory posits structures or relationships that enhance our hearing of a piece—and, hence, which we did not

hear previously—the theory is not entitled to claim also that these relationships explain effects that the music has on us. To posit a certain feature of a piece of music as an explanation for a psychological effect, it seems to me, implies that that feature is (perhaps unconsciously) being heard or mentally represented. Certainly—as noted earlier in this essay—this is the usual assumption in psychology and other areas of cognitive science (although perhaps some in music theory would take issue with it).[5] To the extent that a theory claims to explain the effects of a piece, then, it must be taken as a descriptive theory rather than a suggestive one.

I believe these two goals characterize the great majority of work in music theory today. They are not, of course, the only goals that might be pursued. One might also regard musical analysis as an objective study of the score of a piece, a search for structures and relationships that seem significant or pertinent without regard for hearing either descriptively or suggestively. This is what Nattiez (1990) has called the analysis of the "neutral level."[6] However, I believe few analysts today would claim such a purpose. Alternatively, one might seek, through analysis, to reconstruct the intentions or thought processes of the composer. Again, I can find almost no *explicit* embrace of this goal in recent theory and analysis. Ethan Haimo (1996: 178) has recently suggested that claims about composers' intentions are often implied in analyses in subtle ways; this is an issue deserving further study. For now, however, we will limit ourselves to the two goals outlined above.[7]

* * *

If it were simply the case that some theorists were pursuing descriptive theory, and others suggestive theory, this would not necessarily be an unhealthy situation. Indeed, in some areas of the discipline, there is a fairly clear allegiance to one purpose or the other. The work of Lerdahl and Jackendoff and Meyer is clearly psychological in orientation, as their quotes above suggest; much pitch-class set theory, I think, is clearly suggestive (consider Rahn's quote, for example). But a great deal of work in theory and analysis simply does not address the issue of purpose; and this is problematic, given the lack of consensus on this issue. The confusion is compounded by the fact that, in some cases, claims for suggestive and descriptive validity can be found for the same theory. The prime case in point is Schenkerian analysis.

The confusion over the purpose of Schenkerian analysis can be traced back to Schenker himself. Many comments can be found in Schenker's writings which seem to reflect a strongly suggestive attitude (although in Schenker's case, "prescriptive" would perhaps be more appropriate): "There is no doubt that the great composers—in contrast to performers

and listeners—experienced even their most extended works not as a sum total of measures or pages, but as entities which could be heard and perceived as a whole" (1979: xiii). "[O]ne can understand that the layman is unable to hear such coherence in music [the coherence of background structure]; but this unfortunate situation obtains also at higher levels, among musicians of talent" (1979: 6). However, listeners not blessed with this special gift can *learn* to hear large-scale structures, and Schenker's purpose is to facilitate this. "Only by the patient development of a truly perceptive ear can one grow to understand the meaning of what the masters learned and experienced."[8] In his discussions of musical structures and relationships, then, Schenker seems to be presenting them as things people should try to hear, rather than describing things that they already hear. However, there are also signs of a psychological attitude in Schenker's writings. *Counterpoint* contains numerous references to psychology and the "psychological effects" of musical patterns, as well as frequent appeals to the way "we hear" something or to the tendencies of "the ear."[9] While the suggestive impulse seems dominant in Schenker's writings, then, there are signs of some ambivalence in this regard.

This ambivalence is much in evidence in more recent Schenkerian analysis as well. A number of recent Schenkerian analysts have adopted a suggestive view, urging that Schenkerian analysis should be regarded as a suggestion for hearing and not as a descriptive theory of perception (though usually without Schenker's insistence that a Schenkerian hearing —indeed, a *particular* Schenkerian hearing—is the only valid one). Forte, for example, has described Schenkerian analysis as "a new way of hearing music" (1977: 6); Schachter's quotes, cited above, reflect a similar view.[10] Others, however, adopt a psychological view of Schenkerian theory. One example is Lerdahl and Jackendoff, whose own theory is greatly influenced by Schenker's ideas; although they do point to a difference in purpose between Schenker and themselves, their acknowledged debt to Schenker's theory seems to imply that it is of great relevance to the "experienced listener" (who "need never have studied music").[11] Even more notable here is Peel and Slawson's review (1984) of Lerdahl and Jackendoff's *Generative Theory of Tonal Music (GTTM),* which compares Lerdahl and Jackendoff's theory to Schenker's throughout (very unfavorably), thus implying that Schenkerian analysis does a better job of fulfilling *GTTM*'s stated goal—describing the hearing of the "acculturated listener" who "need never have studied music"—than *GTTM* itself. Another example is found in John Sloboda's book *The Musical Mind,* where Sloboda offers a lengthy comparison between Schenker and Chomsky. Sloboda finds a number of parallels between the two, and also some differences, but never mentions any difference in purpose between Schenker and Chomsky.

Thus, we can only assume that Sloboda sees the goal (and value) of Schenker's theory as being analogous to Chomsky's, namely, as a description of the mental structures underlying the perception and production of language (or music). In short, Sloboda clearly seems to regard Schenkerian analysis as a psychological theory rather than a suggestive one.[12]

This disagreement in purpose is troubling. It really is a disagreement—although it is rarely acknowledged as such—rather than merely a difference in emphasis, because, as argued above, a single theory can hardly be suggestive and descriptive at the same time: to the extent that it is enhancing listeners' perceptions, it cannot also be describing them. Even more troubling is the fact that some authors seem to claim both purposes for Schenkerian analysis at the same time. Two examples will suffice. Nicholas Cook's article "Music Theory and 'Good Comparison': A Viennese Perspective" is essentially a discussion of the purposes of music theory, and of Schenkerian analysis in particular. Cook begins by questioning the degree to which music theories—among them Schenkerian analysis, set theory, and Lerdahl and Jackendoff's theory—describe the actual listening process. He proposes an alternative goal for music theory, based loosely on the early-twentieth-century Viennese concept of *Darstellung*. By this view, the aim of music theory might be, in Schoenberg's words, to "influence the way in which the sense organ of the subject, the observer, orients itself to the attributes of the object observed."[13] Cook then voices what would seem to be an unequivocal statement of the suggestive purpose of theory:

> And if we accept this view—if we regard an analysis not as an objective representation of musical structure but as a suggestion for how the music can be experienced—then we may find that a number of the problems of contemporary music theory simply evaporate. (1989: 129)

So far, then, Cook would seem to be advocating a shift from the descriptive approach toward the suggestive one. Later, however, his attitude seems to change. In examining a Schenkerian analysis of the first movement of Beethoven's piano sonata op. 90, Cook notes that the middleground structure suggested by Schenker leaves out certain surface features of the music. But, Cook argues, these are obvious anyway.

> What we want an analysis for is to explain the powerful sense of cohesiveness and direction that pervades the discontinuities of the musical surface; and this is precisely what Schenker's sketch does. In the same way, we do not need Schenkerian analysis to tell us that there is

> a break at m. 16; we need it in order to understand why this break seems so curiously evanescent, with the musical motion continuing after it as if nothing had happened. (1989: 132)

Now Cook is suggesting that Schenkerian analysis explains something that we feel about the music. Again, however, to claim that a theory explains the effects of a piece is to present it as a descriptive theory, not as a suggestive one. If Schenker's theory really did (in some way) explain the effects Cook mentions, a strong case could be made that the theory was in some sense describing our mental representations of the piece. But this is a completely different enterprise from coming up with new ways of hearing. It is not only different, but incompatible; how can a single theory possibly be doing both?

Robert Snarrenberg's recent monograph, *Schenker's Interpretive Practice,* also takes up the issue of Schenker's purposes, and the purposes for which his theory might be used. Very early in his discussion, Snarrenberg quotes this remark from Schenker about Hermann Kretzschmar's analysis of Beethoven's Ninth Symphony:

> 'What good is a "guide" if it offers the reader nothing more than what he himself already perceives and knows? . . . "Long measured the way" [a phrase Kretzschmar had used] is undoubtedly the impression that everyone receives from the principal idea; wasn't Kretzschmar's task rather at least to indicate correctly the technical means that led to such an effect?' (qtd. in Snarrenberg 1997: 7)

Snarrenberg elaborates Schenker's comment as follows: "What the readers of a guidebook presumably cannot know readily from their own experience —and what Schenker is convinced readers ought to desire to know—is how the arrangements of tones crafted by a composer can result in anything like a 'trait of suffering' " (1997: 7). Thus, according to Snarrenberg, Schenker sees the goal of analysis not as enhancing people's experience of a piece—listeners already perceive the 'trait of suffering'—but, rather, as explaining how this experience came about. Yet just a few sentences later, Snarrenberg writes:

> Composition and interpretation are complementary activities centered on tonal content. Composers intend to produce effects or responses in others by means of configuring tones in such and such a manner. Listeners hear (or imagine hearing) the presented configuration of tones and respond appropriately. . . . For this complementary relation to hold, composers and listeners must be disposed to re-

> spond in similar ways to tonal configurations. The point of Schenker's interpretive practice is just to bring about that sharing of mental disposition, to do so by bringing noncomposers' minds into line with what he believed to be the mental disposition of the German composers of the eighteenth and nineteenth centuries. (1997: 7–8)

Once again, the purpose has now shifted. Rather than explaining the effects of music on the listener, the goal is now to *improve* listeners' hearing so that they can respond to the music in appropriate ways. One might argue, in Snarrenberg's defense, that he was only trying to explain Schenker's own contradictory and inconsistent purposes. Still, Snarrenberg would have done a service by drawing attention to this contradiction, especially since, as we have seen, it remains very much present in the thinking of theorists today.

* * *

The division I have posed might in some ways seem oversimplified. I have argued that, to the extent that a theory is describing our perceptions, it cannot also be enhancing them. However, a theory might be descriptive in some aspects, but suggestive in others; for example, one might argue that Schenkerian structures are descriptively valid for many people at a local level of structure, but at higher levels (e.g., the *Urlinie*), they are best regarded suggestively. A theory might also have a different status for different people, or for the same person at different times. This last point is a particularly important one, since it indicates what might seem to be a fundamental convergence between suggestive and descriptive theory. Let us consider set theory, which I think is widely construed—and rightly so—as an entirely suggestive theory; that is, it serves to enhance the hearing of people who study it. (Perhaps one should consider it a set of analytical tools rather than a theory, but this does not affect the present point.) Once someone studies set theory, it is descriptive of their hearing (or at least their understanding) of certain pieces. Even then, however, there would be little justification for calling set theory a "psychological theory of music theory students." By the same token, we could call classical mechanics a "psychological theory describing the knowledge of physicists," but this would seem odd. To call something a psychological theory, it seems to me, implies that it has some kind of psychological validity *beyond* what is due to people's explicit study of the theory.[14] We should note also, however, that in the course of studying set theory (again, regarding it for the moment as a purely suggestive theory), one undoubtedly acquires all kinds of tacit and unconscious knowledge that is brought to bear in doing set-theoretical analysis, and this could be studied in a psychological way,

just as psychologists study the tacit knowledge involved in physicists' problem solving. (Whether any existing work in music theory could be regarded as "psychological" in this way is, I think, doubtful.)

In short, a question such as "Is the value of Schenkerian analysis as a descriptive or a suggestive theory?" undoubtedly has a highly complex answer. A theory may be suggestive in some aspects, descriptive in others; and it may be suggestive and descriptive to different degrees for different people. My own view is that the truth about Schenkerian analysis lies somewhere in this middle ground. However, I believe these complexities must be confronted. To simply offer vague and conflicting generalities—or to evade the issue altogether, as much theory does—is not the solution. Such an attitude has led us to a situation of profound confusion, in which the status and value of music-theoretical systems is altogether unclear. For those who are primarily interested in psychological theory, one question of great interest is this: To what extent can we take Schenkerian theory as a successful model of people's perception and cognition of music (beyond what is due to explicit study of the theory) and, hence, as contributing to an explanation of their musical experience? This is not the only interesting question one could ask about Schenkerian analysis, but it is surely one interesting question—those who have never studied Schenkerian analysis include many listeners of classical music today, as well as *all* listeners prior to Schenker—and it is a question to which there is an answer, though undoubtedly a complex one. Until the difference—and essential conflict—between the suggestive and descriptive goals of theory is recognized, however, it is difficult to see how progress can be made on this question.

Another regrettable consequence of this confusion of purpose is that it has led to serious misunderstandings with psychologists. Suggestive music theories are sometimes subjected to unfair criticism, and inappropriate tests, because their purposes are not understood. For example, Eric Clarke criticizes analyses that are based on mathematical relationships such as the Fibonacci Series, which, in his view, do not characterize people's hearing (1989: 11). The validity of this criticism depends entirely on the aim of the analyses in question (he cites none specifically). If the aim of a particular Fibonacci analysis is to suggest to people a new way of hearing a piece, then *of course* the analysis does not characterize their hearing before they read it; it would be a failure if it did. As another example, Cheryl Bruner tested subjects' intuitions about similarities between pitch sets, to determine whether these intuitions corresponded with Robert Morris's measure of pitch-class set similarity.[15] The subjects' responses to set similarity did not correlate well with Morris's measure. Such an experiment seems somewhat misconceived; Morris's set similarity measure is surely best regarded not as a cognitive model, but as a tool for helping analysts find in-

teresting ways of hearing pieces (or, perhaps, for composing music that is interesting to analyze). On the other hand, theorists are so often unclear about their purposes in doing analysis that others must be forgiven for sometimes misunderstanding them. Indeed, Morris himself claims that his measure provides a "rationale for the selection of sets that insure predictable degrees of aural similitude" (1979: 446). This sounds very much like a psychological claim—that his measure predicts the "aural similitude" of sets—which a psychologist might quite reasonably want to test.

My claim that music theory is confused about its purpose might strike some as unfair, for, one might argue, a similar mixture of purposes can be found in other fields as well, including some branches of cognitive science. This is true; however, it is instructive to consider how this situation has been handled in cognitive science. An illustrative example is the study of decision-making. Early theories of decision-making involved highly rational and consistent models, which were assumed to be models of actual human cognition. Subsequent experimental work revealed, however, that human decision-making was frequently not rational in this way. Since then, there has been a clear demarcation in the field between normative models of decision-making, which are highly rational and coherent (and are sometimes used to *aid* people in decision-making—for example, in making choices about medical treatments), and descriptive models, which describe how people actually do make decisions.[16] I suspect that if someone were simply to present a "model of decision-making" without specifying whether it was a model of how people should make decisions or how they do make decisions, this would be regarded as strange. The same is true of artificial intelligence. A research project in AI may seek to model human performance of some task; alternatively, it may simply seek to perform the task with maximum success (perhaps with some practical application in mind). However, there is a very strong awareness in AI that these two purposes are very different and that a system that succeeds at one task may well not succeed at the other.[17] An even clearer case is linguistics, where the distinction between prescriptive and descriptive linguistics was recognized long ago, and it was resolved that the proper domain of linguistic research was the latter rather than the former.[18] This is in contrast to music theory, where there seems to be confusion as to whether the suggestive and descriptive goals are even distinct.

* * *

At this point it might be useful to consider a concrete example. I am currently working on a study of tonality in rock music: What are the factors in rock songs that determine the tonal center? (The problem, in brief, is that the main factors in tonal implication in common-practice

tonal music are absent in rock. In common-practice music, each major or minor key has a unique pitch-class collection—a major or harmonic minor scale—that largely serves to establish it; cadences are also a major factor in key implication. In rock, the same pitch-class collection seems to imply different tonal centers in different cases, and there are no obvious cadences. Thus tonal implication must rely on other factors.) My *modus operandi* is the usual one of descriptive theory. I examine my intuitions as to what the tonal center is in many rock songs, assuming that these intuitions are the same as those of most other listeners. This is, of course, a huge and problematic assumption, as I discuss below. I then search for factors that might explain these judgments. Is the tonal center usually a pitch-class that is particularly prominent in the melody (metrically, durationally, or because of placement at large-scale structural boundaries)? Is it particularly prominent as a harmonic root? Are there perhaps conventional harmonic or melodic gestures which function to establish tonal centers in rock, analogous to cadences in common-practice music? If I am able to come up with a model or algorithm which accurately predicts judgments of tonal center in rock songs using these kinds of information (or others), then I have a theory—a conjectural explanation—for how judgments of tonal center are made.

Suppose my assumption of perceptual uniformity is false: many listeners (including, let us say, some readers of my paper) do not agree with my opinions about what the tonal center is in many rock songs. In that case, the validity of my theory is in doubt, because the data I am trying to explain (my intuitions about tonal centers of rock songs) do not adequately represent what they are supposed to represent (other people's intuitions). Now, it is possible that some of these dissenting readers—readers whose intuitions about the tonal centers of songs disagree with mine—will find my opinions about the tonal centers of rock songs (and perhaps also my arguments about the factors involved in tonicization, in general and in specific cases) to be musically interesting nonetheless; they might even be led to reconsider their own judgments. ("Maybe he's right that the tonal center of this song is C, not G, as I originally heard it; the very prominent C-major harmony supports this view.") In this case, my theory would have some suggestive value, along with whatever descriptive value it may have. So much the better, one might say; it is no disaster if an analysis serves a purpose other than the one for which it was originally intended. However, I think we should be very careful about trying to do both descriptive and suggestive analysis at once, or remaining noncommittal between them, in the hope that something like this might happen. The reason is, simply, clarity of purpose. As authors, we generally try to be clear in our own minds about what we are claiming, and what the basis is for our claims,

and we try to make this clear to our readers as well. Surely this should apply, *a fortiori,* to our underlying purpose. It is true that both descriptive and suggestive theory each involve large and problematic assumptions: in descriptive theory, we hope that others hear things the way we do; in suggestive theory, we hope that others don't hear things the way we are proposing, and will find our new hearing useful. But this is all the more reason for being clear about our purposes, so that the validity of our assumptions can be clearly examined, and the success of our work fairly judged.

* * *

I cannot emphasize strongly enough that my aim in this paper is *not* to recommend descriptive theory over suggestive theory, or to denigrate suggestive theory in any way. My main point has been that analysis that is intended as suggestive cannot claim to explain our musical experience. But the more limited goal which suggestive analysis *can* rightfully claim—enhancing our understanding and appreciation of music—is, in itself, enormously worthwhile. Indeed, a successful suggestive analysis—one that enriches the musical experience of those who read it—is a valuable end in itself, in a way which descriptive analysis is not. I can see no legitimate objection to either descriptive or suggestive theory in itself; what is problematic is the combination of the two.

Nevertheless, I will not deny that my own research interests lie mainly in the area of descriptive theory, and that one of my objectives in this paper has been to make a case for descriptive theory as a coherent and worthwhile enterprise. I will close by addressing two objections that might be posed to this enterprise as I have outlined it here.

The premise of descriptive music theory is that, through introspection of our experience of pieces, we can make claims about our mental representations of music—claims which will be valid not only for ourselves (and other theorists), but also for some kind of broader population of listeners (musicians and non-musicians) familiar with the style. This premise might seem dubious, to say the least. Our listening to music is surely deeply influenced by our theoretical knowledge, knowledge that—in the case of music theorists—is highly specialized and unusual. Even more insidiously, our hearing may be affected by whatever models or ideas we may be currently entertaining. Therefore, one might argue, it is a fantasy to suppose that we can introspectively observe, in some detached way, whether our hearing of a piece is characterized by particular theoretical structures or relationships, because our hearing may well be affected by the very theoretical ideas we are considering. Given the futility of the descriptive approach to analysis (at least through introspection), then, an openly suggestive one is

the only defensible approach. The following statement by Jean-Jacques Nattiez reflects this view:

> Now, the difficulty of the esthetic position [the position of trying to describe music from the listener's viewpoint] in the case of harmonic analysis is that knowledge and a priori theories are one of the controlling factors in perception. We run the risk of being trapped in circular reasoning: from the moment that functional formulas based on the circle of fifths satisfactorily explain harmonic progressions, are we not going to *hear* in terms of the theory? By necessity, analytical thematicization always influences perceptual orientation. (1990: 211)

This is certainly a potential problem with descriptive music theory, one that must be taken very seriously. However, I do not believe it is a fatal problem. Again, an analogy with linguistics may be helpful. Linguists routinely make use of their own judgments about linguistic well-formedness and other things (such as whether two sentences are synonymous, or whether two words in a sentence can refer to the same thing). One might argue that, as a linguist entertains a theory of some aspect of syntax, the theory may well be influencing her syntactic processing of language (particularly since, having formulated her model, she *wants* it to successfully predict cases she considers later); there is, then, a danger of circularity. I think most would consider this a silly objection; our judgments about syntactic well-formedness are not much affected by theoretical knowledge about syntax or anything else. Yes, one might respond, but music is not like language in this respect. Perhaps it is not; this is an empirical question. My only point in making the analogy is to show that there are some highly complex cognitive domains that are not significantly affected by any amount of introspection or theoretical knowledge about them. It is at least a possibility, then, that some aspects of musical cognition remain unaffected as well.

If some aspects of music cognition are little affected by theoretical knowledge, then we may examine them introspectively without fear of changing them, and we may also hope that these aspects are fairly uniform across a population of people with (in some ways) very widely varying backgrounds. But what actual evidence is there for this? Some have expressed doubt that any of the constructs posited by music theorists—even avowedly descriptive theorists, such as Meyer and Lerdahl and Jackendoff —have much relevance to the way even music theorists listen, let alone ordinary listeners. Cook questions the psychological reality of even the most basic aspects of musical structure, assumed by music theorists of all kinds:

> [W]hen people listen to music in the ordinary way, they don't hear pitches and time-points. To be sure, they hear tunes and harmonies, which are broken up on the page into distinct notes, but they do not hear the notes as separate entities and indeed they sometimes do not hear them at all, at least in a manner that directly corresponds to what is visible in the score. (1989: 121)

While Cook seems to accept the psychological reality of tunes and harmonies here, the same argument might equally be applied to these. After all, do we not have to spend years teaching undergraduates to understand —in large part, to *hear*—tonal harmony in the "correct" way?

What needs to be remembered here, however, is that the kind of "hearing" at issue—both in Cook's comments and in my following rhetorical question—is conscious hearing. And what chiefly concerns us in descriptive theory—as in cognitive psychology and cognitive science—is precisely what is *not* conscious. The whole point of studying cognition is that there are many things going on in our minds of which we are not immediately aware, and cannot easily access via direct introspection. Evidence for these unconscious processes and representations must be sought in more indirect ways. In the case of pitches and time-points, we might ask: Is it reasonable to posit the mental representation of pitches and rhythmic values as a means of explaining people's processing of higher-level musical entities—for example, their ability to recognize tunes, or identify the emotional connotations of harmonic progressions (major versus minor, for example)? Indeed, is it even *possible* to explain these phenomena without such low-level representations?

Common-sense reasoning can offer provisional answers to these questions, but ultimately it is music psychology that will decide the psychological reality of music-theoretical structures. There is already a large body of experimental data relating to music cognition, often comparing the judgments of listeners with varying levels of training and musical sophistication. The picture is, not surprisingly, very complex. Many studies have shown significant differences between trained and untrained subjects, and between the representations formed by listeners—even highly trained ones —and those assumed in music theory.[19] I am more struck, however, by the degree to which even untrained listeners reflect knowledge of basic aspects of musical structure—harmony, key, melodic implication, meter, motivic relationships, phrase structure, cadences, and so on—and an ability to interpret them in theoretically sophisticated ways. And it hardly needs to be said that there is much to be learned about even these basic aspects of musical structure: the way they are formed, the way they interact with each other, the way they give rise to higher levels of emotional response

and meaning, and so on—issues to which music theory could greatly contribute.[20]

My aim in this section has simply been to suggest that skepticism about the feasibility of introspective, descriptive music theory—as exemplified by Nattiez's and Cook's comments—may be unfounded. The validity of the descriptive approach remains a somewhat open question, and will probably not admit of an easy answer, but surely it warrants further exploration. And if our goal is truly *explanation*—finding out how music does what it does—it is the only way to go.

Notes

* This essay has had the benefit of feedback and criticism from a number of people over a period of some years, including Joanne McLean Burkholder, John Halle, Jonathan Kramer, Fred Lerdahl, Paul Nauert, Akira Takaoka, Nicholas Temperley, Julian Treves, and seven anonymous referees. Special thanks are due Joe Dubiel.

1. On the problem of confirmation, see Brown and Dempster (1989: 65–106). On the relevance of historical context, see Taruskin (1986: 313–20) and Forte (1986: 321–37). On the relevance of the composer's intentions, see Haimo (1996: 167–99).

2. Meyer (1973: 6–9) distinguishes between "critical analysis" (the exploration of the unique features of a piece), "style analysis" (the study of general features of a style), and "theory" (the study of more general principles of musical structure). In the quote above he is discussing critical analysis, but I believe he would maintain a similar position on the current issue with regard to style analysis and theory as well (see, for example, 1973: 7–8).

3. For discussions of this issue, see Chomsky (1980: 11–24, 189–97) and Fodor and Pylyshyn (1988: 3–71). Fodor and Pylyshyn observe that even in the debate between connectionist and symbolic approaches to cognition—a debate that is in some ways very fundamental—both sides agree on the necessity of mental representations. There have been, and continue to be, alternatives to the representational approach. One is behaviorism; another is the "direct perception" theory of J. J. Gibson (see Bruce and Green 1990: 381–89 for discussion).

4. One might wonder if Schachter's first quote implies that the purpose of analysis is to make conscious—available to "direct perception"—what was formerly unconscious. But the second quote seems to imply that the goal of analysis is to reveal things not heard even unconsciously.

5. DeBellis (1995, chapters 5 and 6) argues that music-theoretic models might be regarded as causal explanations for psychological responses to music, without necessarily being mentally represented.

6. See also Monelle 1992.

7. The purposes just mentioned—studying the score in an objective manner, or uncovering the composer's intentions—interrelate in complex, and not always conflicting, ways with the suggestive and descriptive purposes described earlier. For example, one might argue that seeking to reveal the composer's intentions in

a piece (by analysis, or perhaps by historiographical or other means) is a good strategy for finding an informed and satisfying hearing of it.

8. Schenker 1979: xxii. See also Schenker 1987 1:xviii, xix.

9. See, for example, Schenker 1987, vol. 1, pages 10, 53, 84, 92, 96, 149, 183, 191, and 207. For thoughtful discussions of Schenker's claims and purposes, see Dubiel (1990: 291–340) and Blasius (1996). While both of these authors find fault with Schenker's arguments in various ways, neither one acknowledges what I see as the most serious fallacy in his reasoning: the conflict of purpose discussed here. One might argue that these conflicting claims in Schenker represent differences in purpose between his works, or different stages of his thinking. But this does not seem to be the case; *Counterpoint* contains both suggestive and psychological claims, as my citations show.

10. See also Schachter (1981: 122–23) and Benjamin (1981: 160, 165).

11. For Lerdahl and Jackendoff's discussion of the difference in purpose between Schenker's theory and theirs, see 1983: 337–38.

12. Sloboda 1985: 11–17. Sloboda distinguishes between the linguist, who studies linguistic structure, and the psycholinguist, who studies actual psychological processes involved in language. This characterization is not ideal, since it implies that linguistic structure is something non-psychological, that is, outside the mind. Chomsky quite clearly sees his theories as descriptions of mental structures and processes (see, for example, 1980: 11–24, 189–97). Indeed, Sloboda himself admits that musical and linguistic grammars must be mentally "represented" (16); presumably, a grammar could be taken as a description of these mental representations. At the very least, then, Sloboda seems to consider both Chomskyan theory and Schenkerian analysis to be something like what I call descriptive theories—in any case, certainly not what I am calling suggestive theories. A further point: Chomsky's theories apply to production as well as perception, and Sloboda applies Schenker's theories to production also, taking them as a description of the mental structures involved in composers' creative processes. My concern here, however, is with only perception.

13. Quoted in Cook 1989: 124. Schoenberg here was referring specifically to "efforts to discover laws of art," but Cook points to this as a worthy goal for music theory.

14. Along the same lines, one could object: "But in doing a suggestive analysis, by the time I finish it, it does characterize my hearing. Therefore it is also psychological." Again, a geologist could say the same thing: "By the time I completed my theory of tectonic plates, it described my thinking about them." By this criterion, geology is psychology. The fact that an analysis comes to characterize a theorist's hearing simply through doing the analysis does not make it psychological in any usual sense of the term.

15. Bruner 1984: 25–39. Morris's measure is presented in Morris 1979: 445–60.

16. For discussion, see Slovic 1990: 89–100.

17. For discussion, see Garnham 1988: 8–16.

18. See Lyons (1981: 47–54) and Pinker (1994, chapter 12). One might draw a parallel between the "prescriptive/descriptive" distinction in linguistics and my "suggestive/descriptive" distinction here. However, I do not wish to impugn

suggestive music theory with the negative associations attached to prescriptive linguistics—hence my use of the term "suggestive." (Actually, despite what some linguists say about prescriptive linguistics, the enterprise of enhancing and expanding people's use of language is a perfectly valid and well-accepted one, and is a huge part of our educational system. Thus it is not really clear why the term "prescriptive" should be used or taken pejoratively.)

19. Cook's own experiments on tonal closure—showing that listeners are often unable to detect whether a piece began and ended in the same key—are a sobering case in point (1987: 197–206).

20. An important caveat: In claiming that aspects of music cognition may be largely uniform across a population of listeners, I am not at all claiming that these aspects are innate. Rather, I think it is clear that many aspects of music cognition —even very basic ones—are learned: tonal harmony, for example. But it is perfectly possible that such learning takes place largely from exposure, rather than from explicit theoretical training. Again, the parallel with language is apparent.

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columbia report

Recent Developments at the Columbia University Computer Music Center

By Brad Garton

Introduction

Columbia University has had a long involvement with music technology, establishing one of the first, if not the first, research/music centers devoted to electronic music in the United States. Officially recognized in the late 1950s as the Columbia-Princeton Electronic Music Center, the EMC was a hotbed of musico-technological work in the ensuing decades.[1]

A few years ago I became Director of the Center—its new advisory board comprising Fred Lerdahl, Tristan Murail, and myself. We managed to secure a sizable boost in funding from the Columbia University Administration and from several external sources, and with this influx of new support we decided to rebuild a number of our studios and to undertake a major overhaul and revamping of the Center's facilities. We also decided to rethink the operation of the Center, seeking to renew the status it enjoyed for decades as an advanced and progressive workplace for musicians and researchers who use new music technologies.

At that time we officially changed the name from the Electronic Music Center to the Computer Music Center (CMC) to better reflect the new organizational structure as well as the renewed research/music focus. We have since enjoyed a tremendous increase in activity at the CMC, with all of the attendant excitement and difficulties associated with explosive growth.

Several months ago Dan Thompson asked if I would write a description of some of the changes that have taken place at the CMC for *Current Musicology,* perhaps thinking that some of what we do might be of interest to *CM* readers. Rather than merely describing hardware and software projects, I thought it might be more interesting for me to try to articulate my version of the philosophy driving what we now do at the CMC.[2] What follows is an attempt to do just that. I feel I must apologize in advance for the decidedly personal tone of this article; however, the operation of the CMC is indeed a personal odyssey for everyone involved. One final caveat: what I describe is truly my own version of how the Center is, and it may or may not reflect the actual reality of the CMC. I like to pretend that it does.

The CMC

I remember when I was in graduate school, my thesis advisor used to say to us: "Don't become the director of any sort of 'center.' It's the kiss of death!" And of course I now find myself, a little over a decade later, director of the Columbia University Computer Music Center. I guess I learned my graduate school lessons well. Indeed, many days do feel like a slow and painful act of final mortality, but I hope that I am not quite yet the corpse my advisor envisioned. I think he had a particular fatality in mind with his "kiss of death" statement—the death of creativity, of innovation, and of music (we are both composers). I also think that the "kiss of death" observation was motivated by a conception of what it meant to *be* a director of a "center" back then, especially considering the circumstances that provided a context for the definition of a "computer music center" more than a decade ago.

The point of this essay is not to outline those circumstances or to describe the context that existed for computer music work in the 1980s (see Georgina Born's (1995) fascinating description of IRCAM, a well-known music-technology research center in Paris, in the mid-80s for a detailed look at this world). To be sure, the environment for a contemporary computer music center probably hasn't changed much in ten years. However, we are attempting to build a different sort of computer music center at Columbia, and hopefully learning from past "kiss-of-death" types of mistakes. What I would like to do in this paper—at the risk of appearing massively self-delusional—is to highlight a few of the alternative organizational and philosophical approaches we are implementing as we move the CMC into the new millennium.

As far as centers go, the Columbia CMC is rather decentralized. This is partly a result of the recent history of computer music at Columbia. The relatively gradual growth of support for computer music within the older structure of the Columbia University Electronic Music Center, instead of a single "establishing moment," precluded the adoption of a strong central authority overseeing all computer music activities. The decentralization is also partly by design, for we have noticed that many practitioners of computer music work best in a rather loosely structured environment. We also consider one of our primary goals to be the creation of a center that exists to support the work done by students, researchers, and composers, regardless of the particular aesthetic or musical direction engendered by this work. In other words, the direction of the CMC is charted primarily through use. In place of formalized schemes or organized N-year plans we tend to go where users of the Center are taking us.

This self-organizing approach to defining the CMC's direction has several immediate consequences. The Center's hardware and software

foundation must necessarily be broad, because often a particular research project or musical composition requires specific software packages that run on a certain make and model of computer, possibly with unique peripherals and input devices (MIDI controllers, data gloves, distance sensors, etc.). To meet this need, we have attempted to purchase as wide a range of digital machinery as our budget will allow. At present, most of the major combinations of hardware, operating systems, and software currently used for computer music work are represented at the Center. We are committed to maintaining this array of equipment and software resources. Within budgetary constraints, our purchasing decisions are generally dictated by the needs of the CMC user community. We want to buy machines that will be used!

Maintaining this broadly based infrastructure poses two direct difficulties. The first is, well, simply *maintaining* the infrastructure. Hardware breaks, software configurations get trashed, wires come unplugged, disk drives fail . . . All of these ongoing (and very real) problems place an enormous load on the CMC staff. I have yet to visit a contemporary high-technology academic research center where the support staff wasn't overtaxed, overworked, and overburdened. The Columbia CMC is no exception. It is not unusual during peak times of the academic year for our technical staff to spend 12–15 hours a day putting out technological "brush fires" to keep the CMC running smoothly. This situation cannot continue indefinitely.

One way to lessen the burden of at least routine maintenance work is to involve Center users directly in our support procedures. I would hesitate to cast the CMC as a kind of post-60s technological commune, but we do try to nurture a communitarian spirit, of sorts. People working at the CMC generally recognize that a small investment of their time can help make the Center a more productive place. In general, we allow all of our users to take as much responsibility for configuring and maintaining our hardware as they wish—provided that this does not interfere with other users working on the system. We often find that individual students or researchers have detailed personal knowledge of a particular machine or software package. This "knowledge bank" among our users is invaluable to us as we confront the plethora of hardware/software possibilities, each with idiosyncratic configuration features that must be known for proper operation.

Another obvious way to lessen the maintenance burden is to hire more staff. This "solution" intersects with the second of the immediate difficulties encountered in trying to maintain a broadly based technological infrastructure: budget. In a world where hardware is nearly obsolete the day it is shipped, a solid foundation of financial support is a necessity. Even remaining barely "even" with new innovations in technology requires a con-

stant reinvestment in basic machinery at the Center. Compound this with the additional support and maintenance time and budget needed for incoming new hardware/software and the downward budgetary spiral begins to become apparent: new equipment and software needs more support, but additional support requires monetary commitments, leaving less for new equipment and software, which must be purchased to remain technologically current, but the new equipment and software needs more support . . . etc. Every center currently engaged in a fundamental way with new technology will probably *never* have a budget sufficient to meet demand.

At Columbia, we are fortunate in having an administration that recognizes the necessity of providing at least a modest amount of direct support for technology. It has become almost a cliché to say that most progressive universities and institutions of higher education are aware that a strong technological base will be essential for future survival in an increasingly competitive academic market. Columbia is no exception, and the CMC has been the beneficiary of this state of affairs. However, the amount of annual support we receive earmarked as operating budget for the Center does not begin to approach what is needed to maintain our technological viability. To make up for this difference, we have to seek—as many other centers do—outside sources of funding.

This is where our "open door" policy toward work done at the CMC has truly paid dividends. Nearly all of the projects that have generated external income for us in the past few years have originated in a use of our facilities that would not have been envisaged had we adopted a narrow, hierarchical definition of what the CMC should be doing. Certain individuals made specific uses of our facilities and capabilities—uses we often had not anticipated when setting up the Center—and these alternative uses grew into relatively lucrative income-generating projects.[3]

To be honest, this is probably how most other centers operate. To a greater or lesser extent, projects are generally driven by the individuals involved in them instead of by "official" institutional sanction. Our plan is that by *explicitly* articulating an "anything-sort-of-goes" attitude, together with the range of resources we provide, we will create an extraordinarily fertile environment for the gestation of new and innovative projects. We don't want to eliminate *a priori* any possible avenues for fruitful musical investigations by adopting an artificial set of limits on what the CMC should be doing.

A side effect of this policy has to do with how the CMC relates to other divisions of the University. I recall that when I first became director of the Center, we had many long discussions on how to define our relationship to the music department, other departments, other university research

centers, etc. These discussions are ongoing, as very real issues surface concerning allocation of specific resources. To a large extent, however (and lengthy discussions notwithstanding), the CMC has already become tightly integrated into the workings of the music department. This integration has occurred not as a result of any planned effort on our part, but as a consequence of individual student and faculty projects that have become what the Center does.

We have also established an excellent working relationship with the Columbia music library (and in fact with the greater Columbia library system), and we are becoming involved in collaborations with the film division, the engineering school, the medical center, and the chemistry department, as well as with many other units within the university. Again, these connections have all occurred through specific projects and initiatives arising from the CMC user community—not from the implementation of some pre-planned and agreed-upon "CMC Objective." Rather than forcing a conception of how the CMC should relate to other university entities, the collaborative projects have already produced the best possible definition of Center policy regarding interdepartmental relations: relationships based upon a mutual pursuit of common goals as embodied in actual, ongoing work.

We would like to expand this approach to collaborative ventures beyond the walls of Columbia University. In the past, there has been little substantive cooperation between different centers for computer/contemporary music. In truth, it was probably necessary for centers to establish their independent, autonomous existence before any intercenter collaboration was possible. Recently, however, several music technology centers have begun to work together on joint projects. We are among those centers, for we believe that diverse perspectives can greatly assist the development of these projects. As with our other work, the approach we are attempting to take is to aid the creation of self-generating projects, rather than dictate from the top which "collaborations" (even if in reality they may be quite empty of real content) we will undertake. So far, this approach appears to be functioning quite well. We are currently engaged in fledging projects with Princeton University, the University of Virginia, the University of Thessaloniki, the Tokyo College of Engineering, the National Center for Supercomputing Applications, the National University of Uruguay, IRCAM, and a number of commercial enterprises.

Stepping back a bit from the local circumstances of the CMC, this notion of decentralized planning seems part of a larger phenomenon—call it postmodern management if you will. The fragmentation and lack of central authority that have been cited as salient features of postmodern philosophies are generally seen in a negative light: hierarchical high-

modernist edifices are *destroyed,* are *demolished,* are *deconstructively reduced* by postmodern thinking. I suggest that the activities and organization of the CMC represent a more positive postmodernism. To borrow a concept from artificial life or neural network research in computer science, the CMC functions as a self-organizing, "bottom-up" system, where aspects of centralized control and coordination are emergent features of a *confederation of autonomous users.* The Center operates almost as a logical or virtual construction, an entity that comes explicitly into existence to meet the demands of a particular situation.[4]

The decentralized nature of the CMC has a pronounced effect upon some of our products. A culture of shared information is nurtured by a self-organizing approach; thus, the software we develop is—at the discretion of the individual responsible for the work, of course—nearly always public domain, and source code is generally freely available to all. I contrast this with a suite of distribution-protected software packages we recently purchased from a notoriously hierarchical, epitome-of-high-modernism organization. The software was a nightmare to install, mainly because it assumed very specific machine and network configurations. We were required to duplicate large and relatively tangled parts of the selling organization's hardware/software structure just to get the programs running. Had we access to the protected source code (or had the seller been a bit more accommodating of diversity in machine configuration), several days of painful, frustrating installation work would have been reduced to a matter of minutes. I'd like to imagine that software developed at the CMC—perhaps because it is developed in a heterogeneous and constantly shifting environment—is a little more tolerant of different computer configurations. We are actually developing some of our larger software applications on several machine/operating-system architectures simultaneously because the range of machines at the CMC makes the expediency of doing this quite obvious. And of course, most source code for our programs is available for the taking, making any reconfiguration (or enhancements!) easy for knowledgeable individuals to do.

As fabulous as this decentralized, bottom-up approach to Center organization may seem, it does dodge important decisions that still must be made from a top-level perspective. Although it is theoretically wonderful to speak of the CMC as this fantastic logical/virtual construct that forms and reforms for various user-initiated projects, many of our larger undertakings do require a serious allocation of limited resources. In actual practice, we administer the Center by making decisions about the level of support we can provide for individual projects. These decisions are becoming more and more difficult as the activity of the Center increases. Although we must act in a decidedly hierarchical fashion when choosing what we

can and cannot afford to support, a crucial distinction to be made is that the projects forcing the decision originate in the user community at large; they do not begin as officially sanctioned projects arising from a top-level, central CMC authority.

The question of what kind of work the CMC should be doing reappears in resource-allocation choices. My tidy picture of a happy group of users cooperatively determining the direction of the CMC begins to crack and crumble for many people in the face of criticisms about the legitimacy of the kind of music composition and research done at the Center. Every user has a different concept of what she thinks should be of central concern for the CMC, a few people going so far as to dismiss composition and research not in line with a particular viewpoint or aesthetic as somehow not *really* doing music composition or research. An example of this dynamic in action can be seen in the CMC's engagement (or non-engagement) with "multimedia" (film/video/etc.). We have not invested heavily in video production or graphic design systems at the Center, although I have seen many wonderful and exciting multimedia computer music works in the past few years. This is partly because of the high costs of these systems, but it is also partly due to a prevailing attitude at the Center (and in the music department) that this sort of work isn't "pure" music. This situation is changing, however, as several students have recently become heavily involved in multimedia projects. I predict that it will be through these collaborative, cross-disciplinary projects that we eventually move to include film/video equipment as part of the CMC facilities. This is a real case where specific individual projects are driving the direction of the Center, but in this particular instance there exists a strong budgetary counterpressure, partially fueled by notions of musical legitimacy, that works against the realization of these individual projects. The challenge that we face at the CMC is to meld disparate conceptions of what we should be doing into a manageable, affordable environment that will not discourage innovative work. The boundaries that we set must be semi-permeable.

Concerns about what is "central" to the CMC's direction are related to another issue: the pedagogical role played by the CMC. What should we be teaching? How should we teach it? Terry Pender (the technical director and a composer who works at the Center) recently participated in a panel discussion that took place during a computer music conference in Tokyo. The panel was charged with addressing the question, "What does a computer musician need to know?" This pernicious issue seems to surface repeatedly as people strive to codify and make sense of a rapidly changing technological/musical world. Despite many rather heavy-handed pronouncements made about what musicians must know to create True Art, Terry's basic response was that we should—to the best of our abilities—teach what people need to know to accomplish their own personal goals.

The emphasis here is placed again on the individual instead of an external doctrine or tradition that must be absorbed in order to produce real music. Our students and researchers at the CMC are now coming from a wide variety of cultural backgrounds. Enforcing a unitary view of musical knowledge could produce a cultural schizophrenia that might easily destroy individual creativity.

While I certainly endorse Terry's attitude, the truth is that the very act of selecting the issues to address pedagogically in a field as broad as contemporary computer music does carry heavy aesthetic presuppositions. My hope is that we can maintain a relatively "open" approach by relying on a philosophy of individual engagement coupled with a commitment to maintaining a diverse population of students and researchers working at the CMC. I would also want to replace the "need to know" question with an alternative: "What sort of musical community do we want to build?" For me, ephemeral questions of musical knowledge often reduce to issues of social relations and the reinforcement of particular social hierarchies and structures—I guess I subscribe to the Foucauldian view of how knowledge/power works in the world. Knowledge of computer music is still relatively young, however, and my personal desire is that we may build a community of knowledge at the CMC that is reflective of the liberal, egalitarian values I cherish. As is obvious by now, I also believe that this is the best possible way to organize a center dedicated to nurturing creativity and promoting musical diversity (diversity and creativity being inextricably interrelated in my view).[5] Even if we fail, the attempt to create a light and shallow controlling structure at the Center will be an interesting experiment.

I do think that circumstances in the world have changed to allow space for the kind of infrastructure and management philosophy manifested by the CMC. The growth of international travel is allowing personal contacts to break down deep-seated cultural prejudices and foster a heightened intersocial awareness, and the Internet (although probably not the liberator of mankind that techno-idealists proclaim) has surely created a climate of individual potential. Even my former advisor, with his dire "kiss of death" warnings about administration, is now chair of a prestigious music department. Since becoming chairman, his music-compositional output has nearly tripled. Maybe there is hope for us yet.

Notes

1. A detailed history of the Center may be found on our web site: http://www.music.columbia.edu/cmc

2. For an up-to-date description of the CMC facilities, along with a description of current projects (and software available for downloading), see our web site: http://www.music.columbia.edu/cmc

3. I realize I don't give specific examples of these projects—this paper is intended to provide a philosophical overview of the CMC. I refer again to our web site for a good listing of work being done at the CMC.

4. Kelly (1994) presents an interesting set of essays about this sort of organizing methodology in a variety of areas.

5. Many "postmodern management" theorists agree with this approach. See Kao (1997) for a popular, albeit somewhat breathless, example.

References

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review-essay

When the Music of Psychoanalysis Becomes the Psychoanalysis of Music

David Schwarz. *Listening Subjects: Music, Psychoanalysis, Culture.* Durham and London. Duke University Press, 1997. 211 pp.

Reviewed by Martin Scherzinger

Introduction: A Historical Note

Since the invention of aesthetics in the eighteenth century, philosophers have long taken music as a paradigm case for asserting a realm that is beyond the reach of linguistic signification and implicated instead in an ineffable higher truth about the workings of the world. Whether this interest took the form of Wackenroder's idealism (in which music occupied a pure angelic domain independent of the actual world), or Schopenhauer's endlessly striving Will (to which music bore the closest of all possible analogies), or Nietzsche's Dionysian strain (which represented the rapturous musical frenzy that destroyed the veils of *maya* and freed us from norms, images, rules and restraint), or Kierkegaard's analysis of the absolutely musical (which best exemplified the highly erotic striving of the pure unmediated life force), music has frequently served as a discursive site for speculation on the limits of philosophy, knowledge, and meaning. A central metaphor for that which resists epistemological certainty, music in philosophical discourse has functioned as a kind of discourse of the unimage, the non-significant, the unsayable *par excellence.*

Less apparent, perhaps, today is the way that this kind of theorizing of fundamental negativity (which came out of German metaphysics) has impacted the current French philosophical, psychoanalytic and literary-theoretical scene. While the explicit reference to music has receded in most post-structuralist writings, the form of the inquiry has not changed much. Like the older figure of music, the operations of deconstruction, for example, mark what is semantically slippery, and puzzle the divide between hardened historical oppositions. Coming out of the Hegelian principle of non-identity, what counts as meaning in the deconstructive

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account includes what is not said, what is silenced out of discourse, and that which impedes narrative coherence.

Still, despite the general evacuation of thought about the purely musical, the metaphor of music is never far away in these later writings. In his description of the sound of the operatic voice, for instance, Roland Barthes isolates that which imposes a limit on predicative language as the "grain of the voice," the visceral materiality that escapes linguistic significance. Jacques Derrida works out his notion of the *supplement*—the negatively privileged term that marks a semantic excess that cannot be subsumed into the discourse under investigation—in the context of Rousseau's consideration of melody and speech in the *Essai sur l'origine de langue.* And Julia Kristeva points to the musical basis of a nonrepresentational theory of language—one in which the desemanticized "pure signifier" reverberates as if in musical space. This rather complicated path in the history of philosophy via German metaphysics to post-structuralist French theory (to use shorthands) ought to disconcert both the view that thought about music somehow lags behind the recent theoretical developments in postmodernism, critical theory, and cultural studies, and the view that music figured as pure sounding-forms-in-motion, precisely the discourse lacking significance, is somehow the antithesis of these developments. Historically speaking, their discursive affinities are more prominent than their differences. This is not to say that writers on music today are generally aware of music's influence on post-structuralism. On the contrary, the lack of historical perspective has frequently resulted in just the mistaken views I have mentioned.

What happens, then, when music theory, somewhat paradoxically, turns (back) to post-structuralist French theory for inspiration? *Listening Subjects: Music, Psychoanalysis, Culture* by David Schwarz provides one kind of answer. In this collection of essays, Schwarz explores the multi-capillaried interface between musicology and psychoanalysis on the terrains of both "popular" and "serious" music. *Listening Subjects* is a thought-provoking book. Schwarz is full of ideas and his musical analyses are bristling with tantalizing speculation. Despite the occasional anxieties about its own formalism, this text connects an investigation into psychoanalysis with traditional music analysis in startling and productive ways. This alone counts as a praiseworthy contribution to the ongoing application of literary and critical theory to music studies in the work of Rose Rosengard Subotnik, Lawrence Kramer, Gary Tomlinson, Ruth Solie, Kofi Agawu, Susan McClary, and Robert Fink, to name a few. Perhaps what distinguishes Schwarz from these authors is that he addresses questions that attempt to forge a kind of music theory of the body.

Drawing on the theories of French psychoanalyst Jacques Lacan and his successors Slavoj Žižek and Julia Kristeva, whose work is a reinterpretation

of Freud in the contexts of structuralism and post-structuralism, Schwarz undertakes to show how certain musical experiences frequently represent a host of (often unconscious) psychoanalytic dynamics. For example, Schwarz elaborates a hearing of John Adams's *Nixon in China* in terms of a fantasy of an archaic sense of self, enveloped in sound, before its emergence into conventionality. In psychoanalytic parlance, this archaic self refers to the infant's state of organic needs (with a minimum of instinctual guidance) before it has gained a sense of itself as a spatially situated whole (via an imaginary ego). The initial harmonic and rhythmic familiarity and simplicity of *Nixon in China* evokes the pre-imaginary state in which one has direct access to the mother—a listening experience that Schwarz characterizes as a *fantasy thing*. On the other hand, the changes in perception that occur through the shifts in harmonic organization and quotation introduce a "conventional" dimension that severs the fantasy of the pre-imaginary state and reminds the listener of the irreducible split between mother and child. Such a hearing, now characterized as a *fantasy space*, registers a kind of acoustic-mirror stage in which "the subject experiences a series of splits away from phenomenal experience, from the sonorous envelope, through the binaries of the Imaginary Order, and into the plural, dispersing signifiers of the Symbolic Order" (16). The references here are to Lacan's theory of the development of the human ego. In order to gauge the plausibility of Schwarz's account, I will briefly outline Lacan's theory before examining Schwarz's way of logically linking music to it. Finally, I will critically assess the notions of fantasy thing and fantasy space in some detail.

Lacan's Theory

According to Lacan, an integrated sense of self begins to form when the infant finds reflected back to itself a satisfyingly unified image with which it identifies. Although this image is essentially an alien fiction, a metaphor, a fictive self constructed through misrecognition, the infant is wholly absorbed in the identification. Thus the infant moves in a ceaseless closed circuit between imagined object and subject. Caught in "a jubilant assumption of his specular image" (Lacan 1977: 2), the infant is unable to tell the two apart.

Lacan extends the operations of this "imaginary order" well beyond the purview of the developing subject, especially in his critique of "philosophical idealism"—a form of knowledge that involves a kind of mirroring or picturing of that which is outside the consciousness of the knower. Following Ludwig Wittgenstein and Martin Heidegger, Lacan disengages from any kind of investigation predicated on a unitary self or a consciousness set over and above the social network in which it emerges. For Lacan, knowledge, like the self, comes into being (at its very beginning) within a

symbolic matrix, a conceptual scheme that anticipates its lineaments. Thus, Lacan insists on the predetermining role played by language in the formation of knowledge of the world.

The analogy between this non-idealist philosophical stance and Lacan's description of developing subjectivity is found in the "symbolic order." Here the child encounters the figure of the father (or the "Law") and recognizes that it is merely a part of a wide familial and social system of relations. The child's undifferentiated relationship with the mother becomes mediated by language while its bodily union with the mother is opened up to unconscious desire. Thus the appearance of the Law inaugurates the repression of desire that constitutes the unconscious. Instead of being prelinguistic and instinctual (in the manner of Sigmund Freud), the unconscious is an *effect* of language—indeed, it is structured like one, for language is that which "hollows being into desire" (Eagleton 1983: 167–68); it divides up the fullness one knows in the imaginary, and irrevocably severs the subject from an experience of unmediated reality. Access to such reality, like access to the mother's body, is no longer direct; the child is plunged into the primary repression of desire. This movement in which fullness of meaning perpetually fades (or where signified constantly "slides beneath" signifier) is the unconscious.

Paradoxically, Lacan calls this inaccessible realm (always beyond the reach of signification) the "real," thereby destabilizing the customary meaning of the term. Far from representing reality in the objective sense, the real is that which eludes conceptualization. It is revealed precisely in those moments when the signifying system is considered inadequate and the subject is put into a relation of desire to unreachable objects. Despite the permanent separation from the mother and from the plenitude of the imaginary order, the subject seeks to fulfill his desire through a substitute object. Such an object, which Lacan refers to as the *objet a,* has a metonymic relation to the original experience of union with the mother. It can never lead to the ultimate source of total fulfillment, nor can the subject ever know what this unconscious object-of-partial-fulfillment is. It is the radically contingent thing that interferes with any network of signs that tries to pin it down and is thus necessarily outside of language. Only through an experience of the impossibility of reaching out for or representing the object of desire does the subject gain a vague expectation of the true dimensions of it. Hence the real emerges in a kind of mismatch between the symbolic and the imaginary orders, the moment when the limits of signifying practice issue forth desire.

Listening Subjects and the Problem with Representation

One might expect that a psychoanalytic inquiry into the subject of listening—whether this focuses on the listening subject or on the subjec-

tion of/through listening—would make much of the extra-linguistic dimensions associated with the unconscious. For, as a continual activity of sliding signifiers whose exact meanings (signifieds) are beyond reach, this model of the unconscious can, historically speaking, be said to have genealogical links to an essentially musical one. However, Schwarz's approach offers a different perspective. Instead of figuring the terrain of the absolutely musical as analogous to the movements of the unconscious *per se,* his musical analyses, which for the most part are beholden to texted music, usually take the argumentative form of some or other musical "representation" of a Lacanian process.

Thus, for example, the real becomes the focus of Schwarz's interpretation of the Beatles' use of white noise at the end of their song "I Want You (She's So Heavy)." The connection of this noise to the real is that of *representation.* Schwarz asserts, "The wall of noise is a representation of the Lacanian concept of the Real as both fantasy thing and space" (31).[1] By prolonging the noise of the guitars for three minutes—beyond what, for Schwarz, could credibly pass as a symbol of frustration—the "white noise suggests a nightmarish nothingness within male desire." Thus, "quantity produces a qualitative shift from the symbolic to the Real" (35). (To assist the reader, Schwarz likens this to the grotesque facial images of Cindy Sherman and to Žižek's analysis of Alfred Hitchcock's film *The Birds.* For Schwarz, Sherman's photographs, which arbitrarily assemble various representations of facial parts into a hideous whole, are "a representation of the pulp that lies just beneath the surface of the face" (32), while the devastating and overwhelming presence of birds in *The Birds* "renders the birds Real" (35). Analogously, the lengthy segment of noise in the song, to which the guitars seem unmoved and indifferent, exceeds symbolic interpretation and is transformed into a representation of the real.)[2]

But if the real is that which lies outside of the imaginary and in the fissures of the symbolic (and thus necessarily beyond the reach of representation) how is the real *represented* in the song? Or is this a representation of the unrepresentable? If so, can all white noise produce such a supersignifying maneuver? Or does the song's text give us the necessary clues? This is where Schwarz's understanding of the real needs to be scrutinized. According to Schwarz, "the Real is an inscrutable force or thing beyond the limits of sensory or linguistic representations. It cannot be heard, seen, or named directly since the Real is that which supports but evades signification. Yet, in the fissures of some representations, it can and does appear, as in the 'face' [created by Cindy Sherman]" (32). It is worth considering what kind of fissure Schwarz has in mind here: "If we subtracted all our experiences from our lives," he explains, "all our patterns of sensory and linguistic understanding, all social conventions, all cultural memories, all personal and collective identities, all historical contexts, we

would be left with the Real" (32). It is not only that this notion of the real is undermined three paragraphs later when Schwarz proposes that the real is linked to, not severed from, culture and convention—indeed it "is clearest when it is attached to conventional representations in social space" (34)—but that this notion of the real resonates, if at all, more with Freud than with Lacan. Far from the remainder when history, culture, symbolic systems, and convention are somehow subtracted away, Lacan's real is instantiated precisely in the social moment, where signifying conventions beget desire. Under Schwarz's definition of the real, the noise in the Beatles song becomes a kind of pre-linguistic, instinctual, inarticulate din whose most obvious interpretation is simply the narrator's frustration —a "nightmarish nothingness within male desire" (35). The sound of the song's ending supports such a reading, for, unlike Hitchcock's overwhelming birds, the white noise remains in balance with the guitars throughout. Is it an exaggeration then to call this a representation of Lacan's real? Or has Lacan's real become too "real" (in the so-called ordinary sense) under Schwarz's gaze?

In chapters 3 and 4, Schwarz turns his attention to the songs of Franz Schubert. In an innovative encounter between Lacan and Schenker, Schwarz examines "Der Doppelgänger" and "Ihr Bild" from *Schwanengesang* in light of ideas such as mirror misrecognition, the uncanny, and the drive. For example, in "Der Doppelgänger" the narrator's confrontation with his own double in the second stanza is analyzed in terms of the psychoanalytic gaze. Lacan's concept of the gaze (*regard*) is shaped by Sartre's claims in *Being and Nothingness* that "my fundamental connection with the Other-as-subject must be able to be referred back to my permanent possibility of *being seen* by the Other" (Sartre 1992: 256–57). The gaze identifies the subject as essentially a "given-to-be-seen" (Lee 1990: 157). In other words, to grasp subjectivity outside of myself entails the reality of being looked at. Lacan makes this Sartrean goal explicit: "What we have to circumscribe . . . is the pre-existence of the gaze—I see only from one point, but in my existence I am looked at from all sides" (1990: 156). Yet the gaze is not substantially tied to the actual presence of another object or subject manifesting the gaze; in fact, it is "invisible" and anonymous. Like the role of *Das Man* (the They) in Heidegger's *Being and Time*, Lacan's gaze is the outside structuring activity—"the Other watching me" —that lays down the conditioning grounds of the subject's existence.

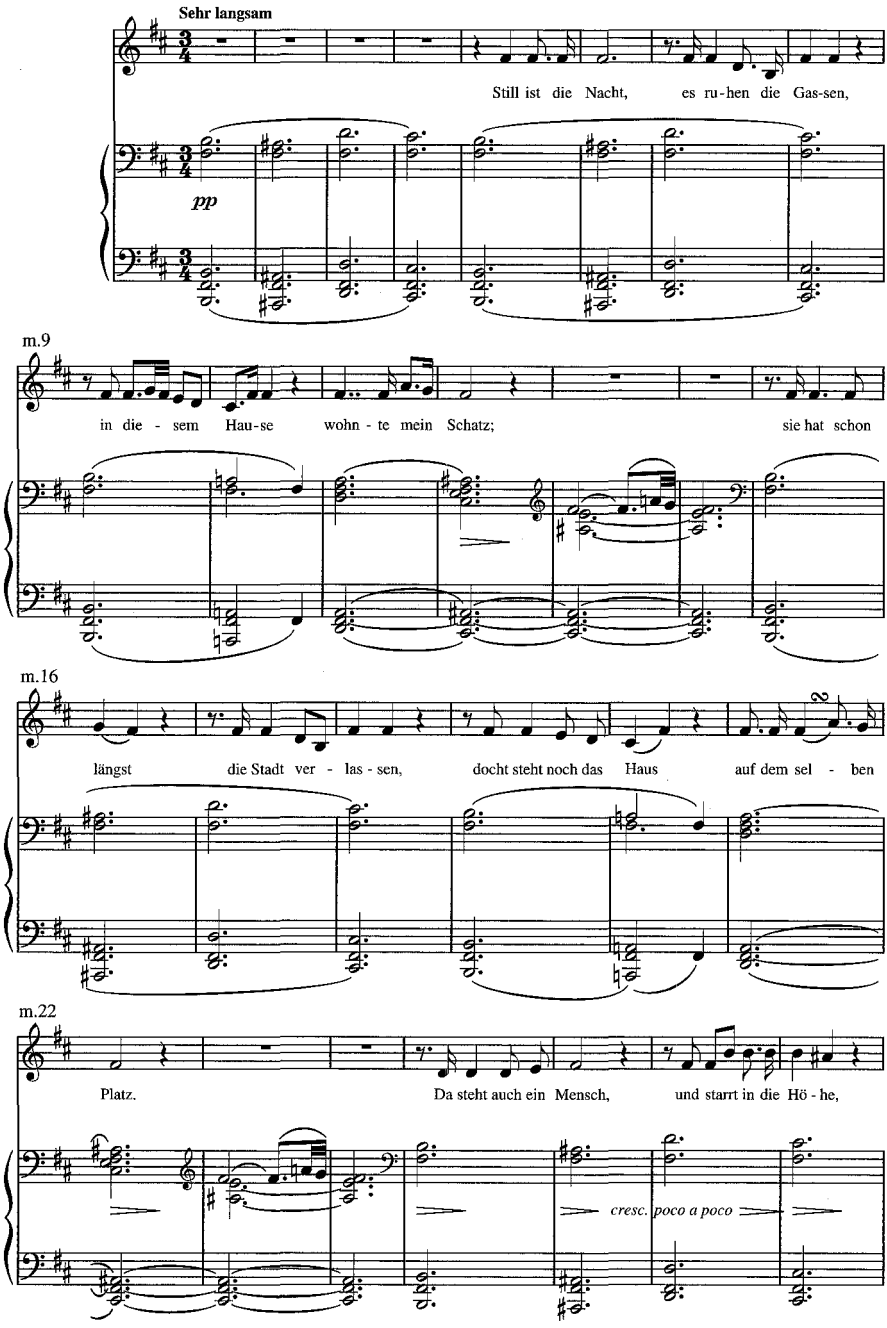
According to Schwarz, "the musical signifier of the gaze [in "Der Doppelgänger"] is the pitch class F♯, which is ubiquitous in the music," while "the musical signifier of recognition is the pitch class G as upper neighbor to F♯" (66). It is true that the climactic G5 in m. 41 articulates the "eig'ne Gestalt" with which the narrator is ultimately faced, but it is less clear why the repeated F♯s signify the structure of the gaze. In

Schenkerian terms, the way in which F♯ elaborates scale degree 5 projects a kind of fixation or stasis: an inability to unhinge the vocal line from its opening repetitions. Textually, this seems to conjure first the stillness of the night in which the poem is launched, and second, a hitherto still-latent inertia of obsession and melancholy. Like the house at which he is staring, the narrator (still) finds himself standing "auf dem selben Platz" [in the same place] in Heine's poem. Harmonic activity is kept to a minimum and the melodic line circles tirelessly around $F^{\sharp 1}$. Finally in m. 25, the melody begins on a note other than $F^{\sharp 1}$. This is the moment in which another person enters the scene: the moment in the text that might plausibly suggest the drama of the gaze. This is the stanza in which the melodic line is unhinged from its repetitiousness and becomes energized in an upward sweep into m. 42. Thus, far from "signifying the gaze," F♯ seems to signal a kind of brooding stasis that *precedes* the imagined presence of another. And this presence is felt precisely by departing from F♯.

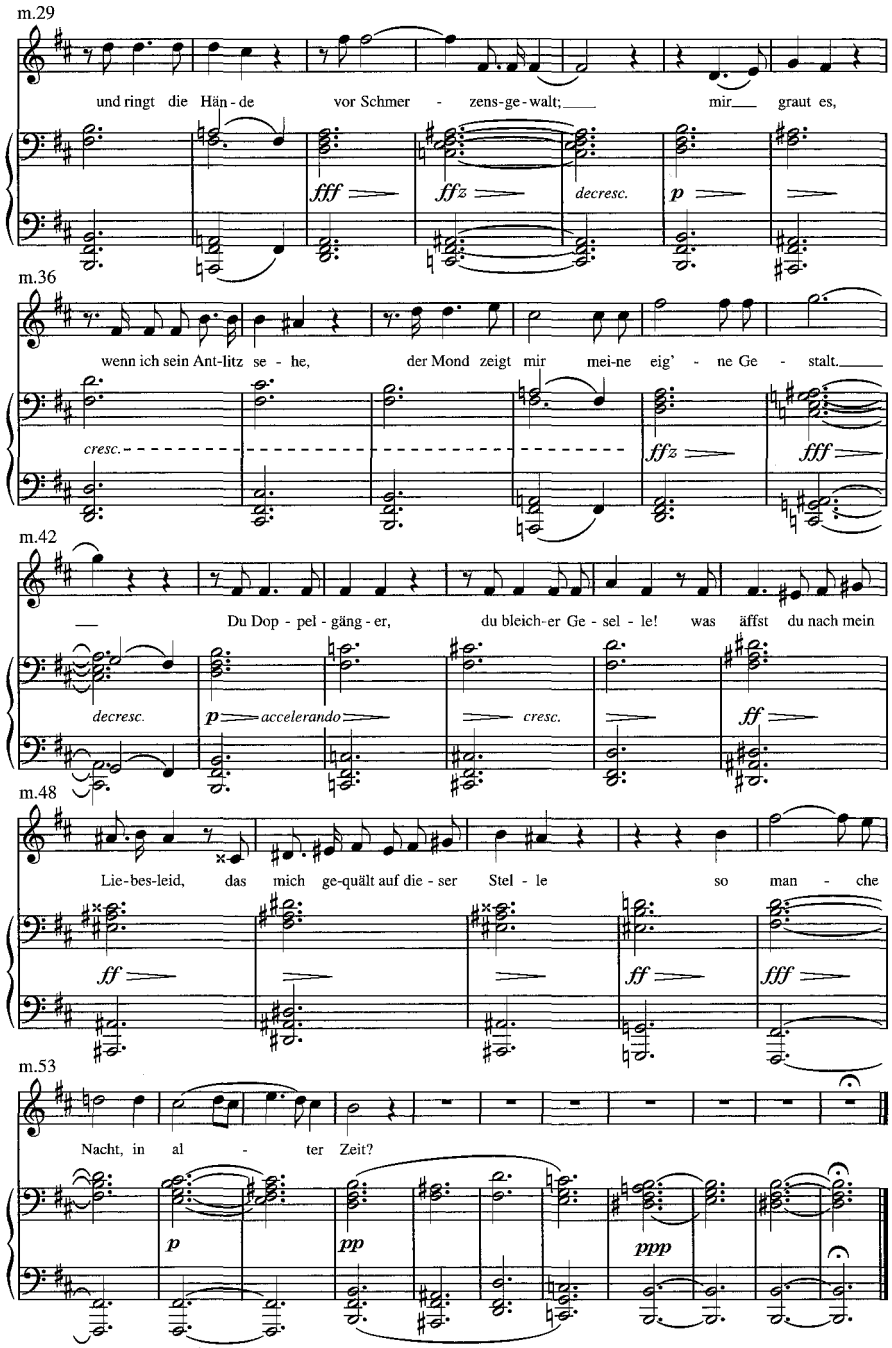
Given the social emphasis on the structuring activity of the gaze, it may be inappropriate to explain this romantic experience of a double in these Lacanian terms. While the registral sweep from m. 25 to m. 41 ultimately settles on the pitches F♯ and G again, as if to lay bare the structure of the narrator's fixation, the process seems more narcissistic than social. After all, the gaze of the narrator's double is diverted (staring at the sky), while the Lacanian gaze is directed at the subject from a multitude of perspectives. More importantly, can the Lacanian gaze appropriately *be signified* by a pitch class? If the gaze is a kind of presentiment that lies behind conscious experience, the effect of which is manifested in that experience without itself being readily accessible to consciousness, can it be experienced through this repeated note? Or is F♯ a representation, once again, of the gaze? If so, why is the invisible and inaccessible gaze represented by that which is ubiquitous and compulsively repetitious; by the sound that is closest and clearest to our ears?

Another problem with Schwarz's "representational" stance here and elsewhere in the book is that it does not bear the weight of the post-Freudian psychoanalytic apparatus at all levels of argument. Thus, while psychoanalysis in recent literary theory has served to disengage from interpretations of literary works as "expressions," "representations," or "reflections" of reality (understanding them instead as forms of production that effect a way of perceiving the world), Schwarz recapitulates the form of the former interpretations even if the "reality" his Schubert songs "represent" has been replaced by the real, the drive, or the gaze. It is as if these psychoanalytic modalities had already been established (thus functioning as the argument's signified) and the music was a representation (or signifier) of them. This pattern of thought, a site of desire all of its own, pervades the book.

Example 1: Franz Schubert, "Der Doppelgänger."



Example 1 (cont.)



In the discussion of "Der Doppelgänger," for example, Schwarz asserts that "E minor is the music's *objet a,* the signifier of the music's irreducible alterity" (70). In the discussion of Primus's cover version of Peter Gabriel's song "Intruder," a "listening gaze," whereby "the music [is] listening to us," is evoked "through the pounding bass guitar and percussion that accompanies the text throughout, sounding just on our side of the listening plane" (97). Elsewhere, in a portion of Diamanda Galás's *Plague Mass,* "B-flat signifies . . . the abjection of the voice stripped of its signifying function" (156). Thus the *objet a,* the gaze and the abject are all positively elaborated by some musical sound: the suggested tonality of E minor, the pounding of a guitar and drums, and the note B♭, respectively. Strictly speaking, this is not theoretically possible. The *objet a,* for instance, which by Žižek's account "is not a positive entity existing in space . . . [but] ultimately nothing but a certain *curvature of the space itself* which causes us to make a bend precisely when we want to get directly to the object" (160), exceeds signification; its presence is experienced only in the negative form of its consequences.

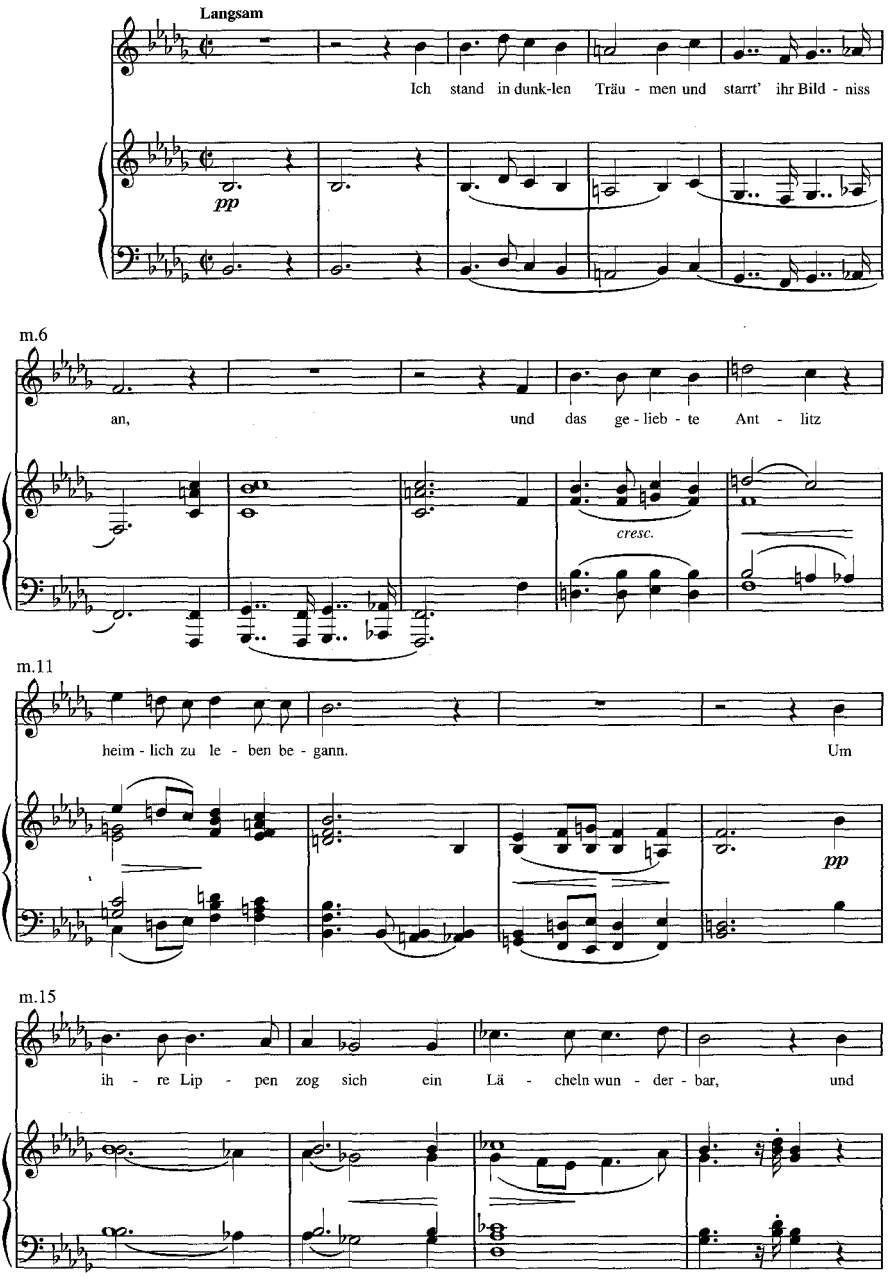
Perhaps one interesting implication of Schwarz's positive account of the *objet a* is the suggestion that the very act of hinting at a modulation somehow elaborates a certain curvature of musical space. Thus, a musical passage's *objet a* is partly revealed when it seems to behave as if under the influence of a new key without actually stating it. This suggestion is tantalizing and may be worth exploring. With "Ihr Bild" in mind, for example, there is an interesting moment, deeply embedded within the narrator's vision of the beloved's seemingly living expressions, where the music seems to swerve from the possibility of changing mode. To begin with, the music contrasts stark octaves in B♭ minor of "Ich stand in dunklen Träumen und starrt' ihr Bildniss an" [I stood in deep dreams and stared at her picture] with the naive, warm, and obedient chorale harmonization in the parallel major of "und das geliebte Antlitz heimlich zu leben begann" [and the beloved image secretly began to live], and so sets up a modal opposition between the quiet stasis of dream-like staring, on the one hand, and the exquisite satisfaction of secret fantasy, on the other. But, unlike its minor counterpart, the major-mode material reveals a vulnerability to inflection by the minor throughout the piece. In mm. 10 and 12, for instance, the chromatic A♭ briefly reflects the mode of contrast in phrases that are otherwise candidly in B♭ major. (In m. 10, the A♭ relates to C minor—to which triad it moves in mm. 10–11—and in m. 12 it relates to E♭ major.) When the turn to B♭ minor becomes more pronounced in mm. 15–16 (as the beloved's lips appear to move), the music turns out to be really becoming G♭ major. No longer even noticing the fantastical dimension of what he sees, the narrator is drawn still deeper into the object of

contemplation: "Um ihre Lippen zog sich ein Lächeln wunderbar" [around her lips appeared a wonderful smile].

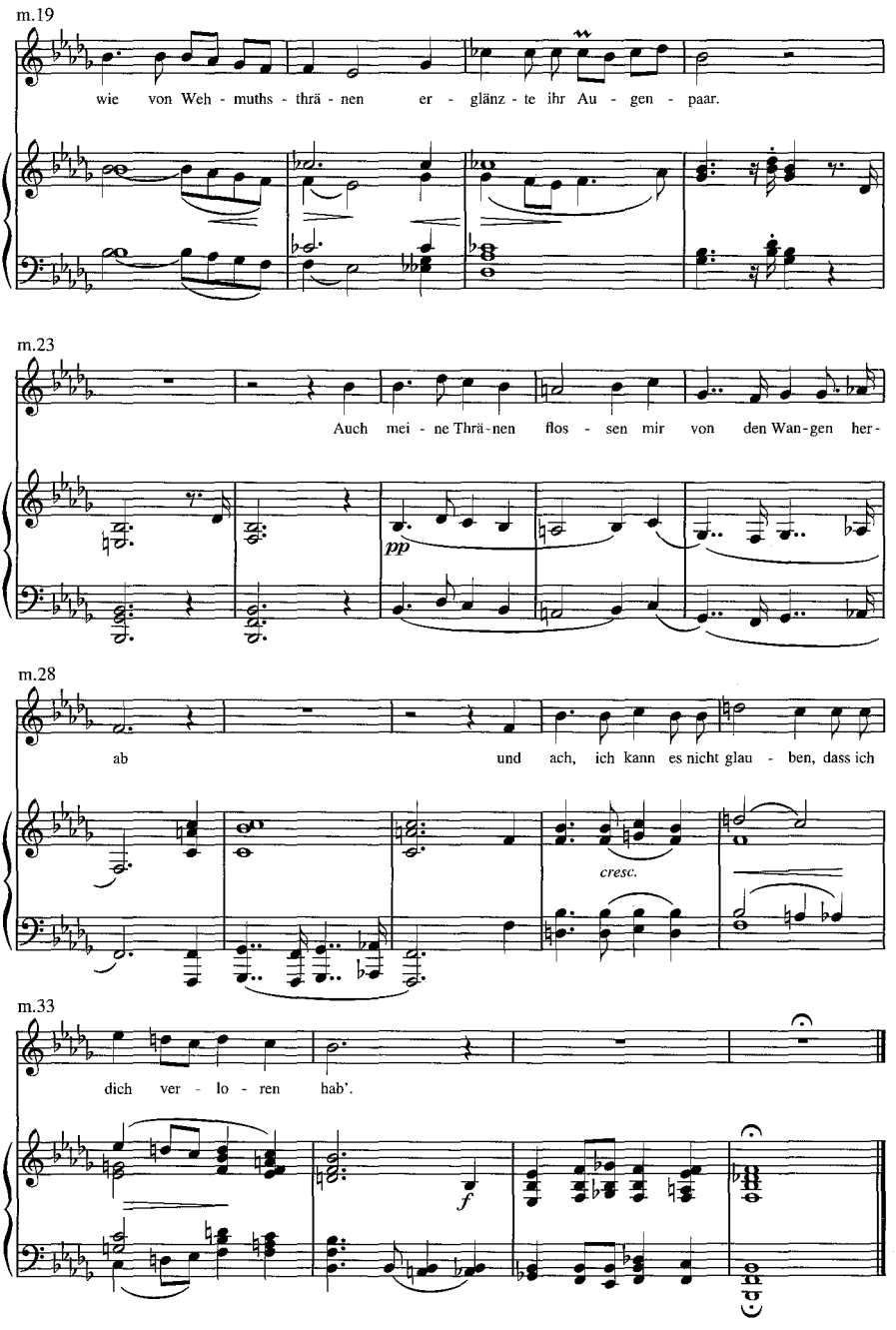
It is in the next phrase that the music seems to swerve away from becoming minor once more. On the last beat of m. 20, a chromatic passing tone in the bass produces a flat-iv chord in G♭ minor, but it is denied any consequence. It is as if, after eluding the turn to B♭ minor in previous measures by elaborating G♭ major, the analogous possibility that minor can haunt major in a different key as well must be repressed to sustain the secret phantasmic activity. The passage continues in G♭ major, as if nothing had happened, by imitating mm. 17–18 almost exactly. At this point, the narrator's vision has been enfolded by another layer of unreality; he begins to probe the imagined reason for the beloved's imagined tears—"und wie von Wehmuthsthränen erglänzte ihr Augenpaar" [and, as if with tears of sorrow, her eyes shone]. The point is that, while the previous phrase (mm. 15–18) takes seriously the possibility of changing mode, this one (mm. 19–22) represses it, and so betrays the desire to hold onto the major mode at all costs. Of course, G♭ major is more closely related to B♭ minor than it is to B♭ major, which (despite the music's efforts to avoid the sound of it) predestines the return of the minor to some extent. Also, the moment G♭ major seems to slip away in m. 20 (with a major-to-minor subdominant progression partly analogous to mm. 10 and 12), the chromatically descending bass line (E♭–E𝄫–D♭) also juxtaposes the enharmonic equivalents of the major and minor thirds of B♭. And the fragility of this sustained fantasy (supported by a failure to modulate, by the haunting proximity of B♭ minor, and by faint references to both versions of the B♭ triad) is revealed in the next gestures (mm. 23–24) when the music is roughly yanked back to B♭ minor and the narrator finds himself reflecting on his own fixated condition once more.[3] The point is that this swerve away from the option of modulating may be figured in terms of a kind of musical bend away from the reality of one's condition on account of desire; a kind of paradoxical *objet a*. This is not to say that the C♭-minor triad, for example, *represents* the *objet a*, but that the failure to change mode in its presence discloses the dimensions of that desire.

This kind of approach to the psychoanalytic dimensions of music could be broadened to include all musical moments (not only not-modulating ones) that reflect something out of kilter with what is readily apparent as a syntactical norm of the piece or as a stylistic convention. It is worth pointing out that some recent music theory, while it has not overtly identified itself as psychoanalytically oriented, is preoccupied with just these kinds of moments. For example, in a fascinating essay, "Contradictory Criteria in a Work by Brahms," Joseph Dubiel (without Lacan on his mind) elaborates an exemplary case of the kind of orientation I have in mind. He coins the

Example 2: Franz Schubert, "Ihr Bild."



Example 2 (cont.)



term *abnorm* to capture "definably irregular events that become criteria of prolongation or succession in violation of larger norms of the pieces in which they occur" (Dubiel 1994: 82). In the same way that Lacan's real is only partially divulged in the moment that signifying systems falter as a result of an ever-elusive *objet a,* the expressive identity of a musical work is partially divulged when an *abnorm* seems to interfere with the network of musical norms. To my mind, an analytic approach that is vigilant about those musical moments that elude normative paradigms shares more philosophical ground with psychoanalysis than does one whose musical events *represent* psychoanalytic modalities.

It is crucial to point out that these abnormal moments are experienced and conceptualized in negative terms, when something in the music seems to flounder, bend, stoop, equivocate, hesitate, halt, confound, or protrude. In his account of the anomalous repeated D♯s near the beginning of Beethoven's Violin Concerto, for example, Dubiel describes an experience that bears the weight of acknowledging what does not happen to the D♯s. This permits a hearing that is beholden to neither a paradigm that wants to alleviate what is problematic about the anomalous tones nor an analysis that anticipates hearing any particular thing, like a "direct connection to the pitch (or pitch class) D♯" (Dubiel 1996: 44). Instead, this more "ad hoc" than "principled" attitude opens the realm of possibility for what might count as hearing under the influence of those weird D♯s (1996: 44). Radically unpredictive and radically ungeneral, Dubiel's approach is alert to events (and non-events) that are not given by stylistic norms, on the one hand, and to descriptions of these that are not given by ready-to-hand music-theoretical paradigms, on the other. This kind of analysis is a critical gesture. Beholden to the radically contingent aspects of a particular musical piece, and thereby to its absolute peculiarity, it dialectically challenges the control of those normative generalities within which the piece operates. Despite its seemingly formalist account of the notes alone then, this interest in marking what is recalcitrant to contextual standards established by musical sounds is, in fact, not far away from Lacan's psychoanalytic interest in the mismatch between the imaginary and the symbolic orders. It is worth reconsidering the work of Dubiel, David Lewin, Andrew Mead, Marion Guck, Fred Maus, Benjamin Boretz, Suzanne Cusick, and others, in these terms.

This is why the "representational" stance in *Listening Subjects* is so problematic. It tends to disengage from such dialectical considerations and analyzes music's relation to psychoanalysis by way of one-to-one mappings. To take a paradoxical example from the analysis of Diamanda Galás: how does a note "signify" the abjection that "erases boundaries among . . . signifying categories" (157)? The traditional roles of music and language

have been dramatically reversed here. Schwarz grants music the power to signify and represent in positive terms that which eludes signification, while linguistic signifiers are caught in a kind of musical sliding. So, while Lacan's model of language inherits the lineaments of the nineteenth-century philosophical figuration of music, Schwarz's "Lacanian" hearing of music inherits the lineaments of a pre-Lacanian model of language. The discourse traditionally lacking significance signifies and the traditionally signifying discourse becomes pure movement. The priorities have been reversed with frequently paradoxical results.

A second problem with the "representational" stance is the way in which it all too often produces analyses that uphold a passive view of the psychodynamics at work. If musical processes *represent* psychoanalytic ones, they cannot move beyond them, mark *their* limits, or offer a space for radical contingency. This is troubling, if only because the work of art for Heidegger, Derrida, Lacan, and Kristeva (not to mention the musical work for Wackenroder, Schopenhauer, Nietzsche, and Kierkegaard) is endowed with just this rupturing potential. For Lacan, for example, painting provides a way out of the alienation of the gaze. By resisting the gaze through the intervention of the real in painting, the viewer is able to accept the subjectifying effect of the gaze and thus be freed from his/her search for satisfaction through fantasy. In contrast, Schwarz's music mainly *subjects*. The music is passively linked to some or other self-identical psychoanalytic dynamic: Schubert's "Der Doppelgänger" "is a musical representation of . . . [the] Lacanian enjoyment [*jouissance*]" (69); Peter Gabriel's "Intruder" "represents . . . [the] language-bound fantasy of power" (93–94); Diamanda Galás's cries and declamations are "representations of abjection" (160); and so on. Unless the analyses can be moved out of the logic of "representation" nothing else is foreseeable. An abject *musicology* has not yet had its day.

Reconsidering Hearing as *Fantasy Thing* and *Fantasy Space*

What exactly is happening to the body when one listens to music? Why, for example, does David Schwarz get goose bumps when he hears Bruckner's Ninth in Hamburg's *Musikhalle*? Schwarz makes the wonderful and provocative suggestion that it is because he is crossing a threshold between two psychoanalytic registers—fantasy thing and fantasy space. In this case, he shuttles between fantasy space and fantasy thing; he thus "crosse[s] the threshold between [his] clearly marked-off adult body and a fantasy of a familiar but archaic body less distinctly marked off from the external world than its adult counterpart" (8). The experience of this more blurred body, issued forth by the "oceanic" effect of the symphony's resonance in the *Musikhalle,* is "made possible" by an early childhood

experience—the sounds of the maternal voice, which Schwarz likens to what Guy Rosolato calls "a sonorous womb, a murmuring house" (8). To my way of thinking, this might be one interesting starting point for an account of the goose bumps insofar as it opens up many compelling paths of music-analytic inquiry.

On the other hand, there are confusions and inconsistencies that frequently make it difficult to follow Schwarz's meaning. For example, is this hearing—this experience of a phantasmic return to the pre-Oedipal state (lacking any defined self) with bumps marking the impossible transition to skinlessness—an experience of a fantasy *thing*? Or is the crossing a fantasy *space*? The former is suggested by the assertion that such hearing is a "representation of having been one with the mother" (8), and the latter is suggested by the assertion that the "*threshold crossing*" is itself "a crucial component of listening as *space*" (8). Alternatively, are these perhaps *two* ways of hearing the same music? But even so, this does not solve the dilemma, because a host of logically independent ideas and values are freighted by the definitions of these terms. It is worth examining more closely what Schwarz means by "fantasy thing," or, in more appropriate parlance, how it is different from "fantasy space."

The first definition reads: "Listening as a fantasy thing is produced when attributes of a structure represented in music are described and related to one another" (4). Joining forces with the new musicologists here, Schwarz implies that the fantasy thing is formal music analysis—a *description* of *structural* attributes of music (3–4). For example, describing "The Star-Spangled Banner" as a composed-out overtone series produces a "fantasy of a listening thing" because it proceeds as if the overtone series and the pitch structure of the song "were objectively 'there' on the page, in the music, in our ears" (4). Without worrying about what these objectives might mean, it seems that listening as a fantasy thing, at this stage of the story, involves naturalizing something (not inherently stable) and describing it.

Fantasy space, in contrast, is produced when "musical-theoretical, musical-historical, cultural, psychoanalytic, or personal thresholds are crossed and enunciated" (4). Thus we pass beyond a limit of some kind and express *that* in some way. So, when we realize that the "natural status" of the overtone series is partly an ideological construction, for instance, we cross the threshold "between pitch structure, form, and musical language, on the one hand, and a historical context that makes pitch structure, form and musical language possible, on the other" (4). Thus, fantasy space involves knowing the historical context that made our thing possible and a residual sense that we were duped by this thing (under a certain nat-

uralized gaze). But what is this naturalized thing? Is it the overtone series —the thing we seem to transform when we come to know it as historically conditioned? What happened to the "composing-out" part? Did we already know that *that* was not natural in the same way as the series was; that it was artistically made (even made-up) and therefore inherently un-thing-like? If so, the overtone series, and not the song, is argumentatively relevant to the distinction between fantasy thing and fantasy space and not, as previously asserted, that the thing was a matter of describing structural relations.

Here is a checklist of characteristics of these two terms: "[A] fantasy *thing* can be formalistic, 'whole,' hierarchical, subordinate, transhistorical, 'purely' textual; [while] a fantasy *space* can be heterogeneous, fragmented, coordinated, culture specific, and personally specific" (4). So the fantasy thing is a hearing that is wholly immanent, where all the elements seem to persist within a system and there is no detaching the event from its meaning. It inhabits a world of plenitude, without lack or exclusion. Signifier and signified clamp together in a mutually exhaustive embrace and never the twain shall part—in short, an acoustic likeness to Lacan's mirror stage. "Given its retrospective structure," Schwarz writes, "the sonorous envelope can be described as a *thing*, an immanent experience whose features represent how we imagine the sonorous envelope might have sounded" (8). But why is the immanent experience *given* by the retrospective structure of the sonorous envelope? Because, the argument goes, it is a *fantasy*—"a representation of an experience to which neither I nor anyone else can have direct access" (8). But what kind of immanence is imaginable here? What kind of immanence is a *representation* of something to which *we have no direct access*? Has this description of the thing already crossed the threshold? Does it already know the irreducible absence?

Another sentence about the fantasy thing reads: "Music represents the sonorous envelope as a fantasy thing when there are one-to-one correspondences between musical details and an archaic oceanic fantasy" (8). Conjuring the philosophical truth-by-correspondence, Schwarz's musical thing maps musical details to an archaic fantasy. But what kind of one-to-oneness do we hear here? What are the corresponding oceanic details? Is enough surprise being expressed at the fact that this substantialist site of one-to-one correspondences (where we find a plenitude of positive terms) is at once the same as the production of a description of the structural relations of a piece of music (which was our first definition of fantasy thing)? How is the fantasy thing beholden to both a substantialist and a structuralist account? This becomes still more puzzling when, for example, Schwarz reads the threshold crossing in Steve Reich's *Different Trains* as

one "between clear denotative language and fantasies of prelinguistic sounds" (19). Now the substantialist moment is *opposed to* the prelinguistic.

What I am trying to say is that the writer is crowding the definition of "fantasy thing" with characteristics that are in tension with one another. The same problem accrues to the definition of "fantasy space." "Music represents the sonorous envelope as a fantasy space when attributes of the thing are related to other conventional registers in which the subject finds him/herself" (8). Schwarz coins and then frequently repeats the related phrase "emergence into conventionality"; it proves to be decisive for his musical analyses, and for the phenomenon of crossing the threshold. I should mention that I am a bit disturbed by what happens to ideology as the account progresses, or rather, by what does not happen. Where the first definition of fantasy space involved an ideological unmasking of the naturalized thing, the later definitions merely "*relate* [the thing] to conventional registers [like] my adult self-awareness and all the baggage associated with my social identity" (8, italics added).

It is perhaps not surprising that the only music in the book that is examined in terms of ideological interpellation (Althusser's Marxist use of psychoanalysis) is music with which the author does not seem to identify—in this case, that of right-wing German skinheads. Addressing the question whether the recent turn away from "right-wing ideology" (128) by Die böhse Onkelz is "genuine or [whether it is] a screen for continuing the right-wing politics that lie behind the music" (128), Schwarz maintains that the same ideology persists; that the euphemisms efface what they in fact underline. "I hear," he writes "a continuum in which lyrics move from explicit to implicit representations of Oi subjectivity" (128). Thus, a song like "Heilige Lieder" really suggests "hidden aggression behind its surface mourning" (129). But the evidence for this assertion is not convincing. The text has no literal referent and is open to many readings: "Hier sind die süssesten Noten jenseits des Himmels / heilige Lieder aus berufenem Mund / wahre Worte im Djungel der Lüge / das Licht im Dunkel ein heiliger Bund" [Here are the sweetest notes this side of heaven / holy songs from appointed mouths / true words in a jungle of lies / a light in the darkness, a holy offering] (117, Schwarz's translation). Nor does the music analysis suggest anything inherently fascist. Does the certainty on the matter answer to another need by asserting its own non-racism via the clear sighting, against odds, of a fascist ideology? The text falls prey to the process it is criticizing. Like the fear these musicians have of the chameleonic powers of the foreigner—the latter's ability to insinuate him/herself into German society[4]—we are warned about the insinuating powers of Oi song and its inherent fascism (whatever the surface appearance). Who is being protected in this account? Does foreclosing the matter like this de-

flect attention from another kind of ideological critique? For example, is this chapter on ideology thus opposed to—or in sync with—the process of capitalist modernization?

Let me return to the sonorous fantasy space and its relation to musical examples. The argument is made that much minimalist music relies on "oceanic" sounding structures, particularly "familiar and simple *rhythmic structures* with . . . groupings of eighth and sixteenth notes" and "*pitch content*" that derives from "traditional harmonies from the canon" (9). So, the opening of John Adams's opera *Nixon in China* "creates a fantasy of the sonorous envelope as thing through very repetitive and metrically regular fragments, on the one hand, and irregular entrances of sustained pitches, on the other" (9). Ignoring the fact that the sustained pitches in the upper voice are not irregular—they enter mostly at regular groups of six eighth notes yielding a 3:4 cross-rhythm with the scales—two questions emerge: Does the fantasy thing now involve a dynamic between regularity and irregularity? And/Or does it involve the "familiar but archaic quality" of the pitches and rhythms—the triadic harmony and the diatonic scales, the accompanying figuration elevated to a primary position, and so on? If the latter, is the familiar-but-archaic quality a measure of the nostalgia for the womb or of a historical style? Or does a kind of musical phylogeny (evolution of a musical style) recapitulate ontogeny (origin and development of an individual)? Or, more mischievously, does the womb resonate a regular triadic harmony, perhaps a ringing of the archetypal overtone series? Necessarily not, of course; but what then? Maybe it cannot be *explained* without falling prey to that small *objet a;* that bone stuck in the throat that reminds us of the insurmountable gap between representation and thing; that scapegoat that marks the metaphysical enclosure—Lacan's signification-resisting impossible real. But maybe it cannot be explained because of other impediments.

The narrative on *Nixon in China* continues: "With the C♯ [in the bass] in m. 31, Adams hints at a cycle of major thirds as an organizing principle" (9). Therefore, because the C♯ hints at a cycle of thirds as an organizing principle in the music, the music gradually opens into sonorous *space.* Additionally, "conventional materials emerge gradually during . . . the piece" (9). How are we to understand the "conventional" here? Is it the "shift in perception of the harmonic organization of the music" that happens because of the C♯; or is it the distilling of an organizing principle (that is, the cycle of thirds) in an otherwise so-called imaginary flow? What is this convention's context? Where are its borders? As far as I can see, the "convention" emerges precisely in the internal structural dynamics of the work, and it is *this* shift in the harmonic structure that opens up fantasy space. What has happened? Formalism, the phantasmic "thing sound," has

turned into culturally informed "space sound"—a different kind of threshold crossing. It is as if the imaginary order historically recalls canons and traditions while the symbolic order refers internally—a case of son begetting father. What has happened to the "historical context [of the book's introduction] that makes pitch structure, form, and musical language possible" (4)? I should not leave unnoticed the fact that hearing C♯ as structuring a pattern in major thirds depends on the possibility of hearing symmetrical relations as equivalent—an interpretation that some may feel is disconcerted by the diatonic surroundings. (Is the perceptual revision at bass note F of the same order as that at bass note C♯? What about the bass C-natural in mm. 18–21 that precedes C♯? Did it sound dominant-ish of F? Or was the cycle suggested at this point structured in diatonic thirds, and then perhaps revised in m. 31 into a symmetrically equivalent one?) There is more to be said about this C♯, nothing as problematic as the fact that a cycle of major thirds opens into convention.

Finally, the text asserts that there is something else that disconcerts the stability of the musical text and issues forth a hearing as fantasy space, namely "the emergence of half-formed quotes—not so much of specific pieces, but more an appropriation of a preexisting style" (9). The author illustrates the point with two examples of indirect quotation: Alban Berg and John Adams both quoting Wagner. Direct examples include the composers George Rochberg and Luciano Berio, where "everything in the musical text points to previous styles, previous pieces, or clichés from other eras" (13). Do these clichés from other eras have a "familiar and archaic" ring? Have we heard this before? In a different register? Was that hearing imaginary or is it the symbolic charged with convention? Symptomatically, the opening of *Nixon in China* has changed at this point in the narration; now it is merely "oceanic, undifferentiated *texture*" (13). Gone are the "traditional harmonies from the canon," disappeared are the "rhythmic structures" that sound like the "accompanying figuration" of "canonic music" (9). Perhaps the canon is not a convention; or perhaps the undifferentiated is a tradition; or perhaps we are committed to the oblivion of contradiction after all.[5]

Notes

1. I will not adhere to Schwarz's convention of capitalizing Lacan's term "real."

2. Lacan's figuration of the real also has a historical link to Immanuel Kant's notion of the sublime as described in *Critique of Judgment.*

3. It is important to point out that hearing this moment as a swerve away from the opportunity to modulate depends on noticing mm. 15–18 as yielding to that possibility. This, to my mind, is what distinguishes the chromatic inflection in m. 20 from those in mm. 10 and 12. Only after hearing the move to the contrast key

succeed in the previous phrase does the one in mm. 19–22 feel like an evasion. On the other hand, the tenuousness of the B♭-major music (embedded in the key of B♭ minor) makes it sound like the return of the octaves in m. 25 is all too due. I would like to thank Joe Dubiel for prompting me to refine my analysis of "Ihr Bild."

4. Störkraft, for instance, sings "Fremde Völker mischen sich ein und behaupten auch noch Deutsch zu sein" [Foreign peoples mix themselves in and then also claim to be Germans].

5. I would like to thank Joseph Dubiel, Lydia Goehr, Jason Royal, and John Ito for their helpful suggestions.

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reviews

Curtis Roads, ed. *The Computer Music Tutorial.* MIT Press, 1996. 1,234 pp.

Joel Chadabe. *Electric Sound: The Past and Promise of Electronic Music.* Prentice Hall, 1997. 370 pp.

Reviewed by Douglas Geers

To the uninitiated, the field of computer music may seem a bit overwhelming, in that it combines new technologies with music composition and performance practices that often seem quite distant from the Western classical tradition.[1] In fact, the constantly evolving technology makes it difficult even for specialists in the field: imagine being a violin instructor in a situation in which every few months several new violins with different shapes, which require new playing techniques, come to the market, purporting to be vast improvements over previous designs (and which often are)!

This analogy might make some musicians want to give up on computer music, but the fact is that our entire society is undergoing a technological revolution, and it only makes sense for musicians to utilize these innovations too. Just as Wagner employed the improved brass instruments of his day, a wide array of possibilities are newly available to today's composers, theorists, and musicologists—because of computers. For those who are intrigued but unsure where or how to get started, two recently published texts combine to serve as a thorough introduction to both the history and techniques of computer music.

The Computer Music Tutorial

Edited by Curtis Roads, this is a massive and exhaustive introduction to nearly every aspect of current computer music composition and research. Moreover, despite its encyclopedic breadth, the soft-cover edition of the book is listed for $50.00—cheap, by textbook standards. Very soon after its publication, *The Computer Music Tutorial* has already achieved "classic" status in computer music circles.

The greatest value of this book lies in its wide array of topics and in their thorough presentation. Every major subject in the field of computer music is addressed, and many of them are dealt with in sets of multiple

chapters. Moreover, these discussions progress logically from basic concepts to quite advanced ones, and give many references to specific articles or books for readers who want to explore topics even more deeply. In fact, all of the references are compiled into a single list at the back of the book, which is nearly *one hundred* pages long! Obviously, this is a serious work of scholarship and a valuable resource for anyone doing composition or research in the field.

The book's editor and primary author, Curtis Roads, is former editor of *The Computer Music Journal,* the premiere publication in computer music. Roads's experience in writing and organizing texts shows itself here: despite its huge size, the book's structure is immediately clear, making it easy to "zoom in" to a particular topic quickly. Since the chapters are grouped in categories, the general topics are rather obvious. However, if a reader is unsure about exactly what a single chapter covers, s/he need only refer to a concise outline at the beginning of each chapter to learn more about what is contained inside.

Moreover, the discussions are generously accompanied by graphs, diagrams, and illustrations—to such a degree that nearly every randomly chosen page will contain one. In a text that covers many topics involving abstract relationships between mathematics and sound, these illustrations prove extremely useful.

The first two chapters fall under the heading "Fundamental Concepts." They explain essential concepts of digital sound (chapter 1) and methods of programming computers for musical applications (chapter 2). While the decision to begin the text with a discussion of digital sound seems natural in a computer music book, the choice to place programming topics second indicates the scope and point of view of this book. Unlike other texts, *The Computer Music Tutorial* is clearly oriented equally toward both computer music composers and researchers. In fact, it seems to subscribe to the (correct) notion that participants in the field are often engaged in both endeavors. Thus, from the beginning *The Computer Music Tutorial* arms its reader with knowledge of how to represent and manipulate sound as computer data, which opens the door for a composer/researcher to work with sound on the most intimate level.

Section 2 of the book is called "Sound Synthesis," and these chapters (3–8), present detailed explanations of all the commonly used synthesis techniques, as well as more "advanced" methods such as physical modeling, formant synthesis, and stochastic synthesis. Again, each topic is discussed clearly and is accompanied by helpful illustrations. Moreover, the discussions are technical enough that they alone provide enough information for one to write computer code to implement the techniques, if desired. In addition, the clear sectionalization of the text makes it easy to

return to specific sections later to refresh one's memory of particular techniques.

Section 3, "Mixing and Signal Processing," consists of chapters 9–11. These divide the general subject into "Sound Mixing" (chapter 9), "Basic Concepts of Signal Processing" (chapter 10), and "Sound Spatialization and Reverberation" (chapter 11). Once again, one sees the technical orientation of this text in that it begins its discussion of mixing (in chapter 9) with mixing by script—which is the traditional method of algorithmic computer music-mixing—rather than with the graphic interface mixing methods popular in commercial software.

Chapters 12 and 13 are grouped together under the title "Sound Analysis." For researchers and programmers who want to write software that "listens" to music, these two chapters provide crucial information. Chapter 12 discusses pitch and rhythm recognition, giving information not only on how to do it but also when and why it is most successful. In a similar manner, chapter 13 examines methods for dissecting the frequency components of sounds as they change over time, which is known as spectrum analysis. The chapter discusses several techniques for conducting spectrum analysis, including the most widely used types: Fourier analysis, phase vocoding, wavelet synthesis, and filter bank analysis. Since much computer music research and composition depends upon information derived from pitch, time, and spectral analysis, these two chapters are a necessity for those who want to write their own software, or even those who merely want to decide what software and settings will give the best results in a specific situation.

The fifth major section of the text is entitled "The Musician's Interface," and it includes chapters 14–19. These chapters are of special interest to composers, because they unveil a multitude of methods for arranging interaction between the composer and/or performer and the computer, as well as methods for applying complex algorithmic ideas to musical forms and gestures. The sections on musical systems also give examples from the work of well-known computer music composers, such as Barry Truax's work with real-time granular synthesis.

The next group of chapters is called "Internals and Interconnections." These chapters (20–22) deal with more practical concerns, such as how MIDI works, what goes on inside digital signal processors, and how to connect your computer music system. As anyone who has set up a studio will tell you, all of this is important information! However, most readers will probably have less use for these chapters if they are not creating their own studio.

Finally, the last major section is a single chapter introducing topics of psychoacoustics. This chapter is well done, but most computer musicians

will want more details about psychoacoustics than are provided here. My guess is that since psychoacoustics is such a large topic on its own, Roads purposely decided to limit it to a cursory treatment in *The Computer Music Tutorial.* Since a proper treatment of psychoacoustics would require hundreds of pages, this is best left for another book to cover.

Given the massive breadth of *The Computer Music Tutorial,* it is not surprising that, although it is generally successful, the text suffers from a few shortcomings. The first is due to the dynamism of technological development: even when the book was only three years old, parts of it were already outdated. For instance, there is no mention of the MP3 audio file format, DVD audio, or other multichannel sound formats such as Dolby Surround Sound. In addition, Roads's use of text script-based synthesis language syntax (used in the Music-N family of synthesis languages: Csound, Cmix, etc.) as the method of creating musical algorithms misses steps taken toward graphical implementation of these ideas in programs such as Max/MSP and SuperCollider. The omission of these concepts is admittedly a minor problem compared to the wealth of ideas that are covered in *The Computer Music Tutorial,* but it is also a sign that any attempt to codify the state of the art in a rapidly evolving industry like computer music is doomed to relatively quick obsolescence.

Another possible problem with *The Computer Music Tutorial* regards its intended readership: for whom is the book intended? In the book's preface, Roads states that the text is meant for music students as well as "engineers and scientists seeking an orientation to computer music." However, though the text is written clearly, its presentation of ideas is a bit dense and scientific. Most chapters quickly proceed to a level of conceptual complexity that would probably be difficult for music students who aren't familiar with concepts of computer programming or basic psychoacoustics. The book would be useful as a supplement to a well-taught class, but do-it-yourself music students might be overwhelmed by it. On the other hand, computer-savvy musicians, engineers, and scientists will benefit from its brisk pace and high level of discussion.

Another, related, problem concerns the underlying philosophy of computer music, which permeates *The Computer Music Tutorial.* John Chowning states this philosophy in his foreword to the text: "Programming ability enables the composer to understand the overall workings of a system to the extent required for its effective use." Essentially, the authors of this book believe that a composer must know computer programming in order to write sophisticated computer music. Honestly, I think that knowing how a computer system works and how to program it remain valuable for computer music composers; I also think that a talented composer can create rich, sophisticated music today using only preexisting software and

hardware tools. Knowledge of programming does open up additional, exciting possibilities but it is no longer necessary to be a hacker to be a computer music composer.

One last, minor complaint pertains to the topic overviews provided at the beginning of each chapter: these overviews, with their lists of topics addressed in each chapter, are useful, but they would have been even more valuable if the authors had also listed the corresponding page number(s) in the text of the chapter where the topics are discussed. As it is, the reader can find which topics are presented and in what order they appear, but then s/he must flip through the entire chapter, looking for a specific topic's appearance.

In summary, *The Computer Music Tutorial* is an expansive text and a valuable resource for all computer music composers and researchers. Its text is thorough and somewhat scientifically oriented, making it ideal for those who wish to build their own applications. It is probably best used as a reference—something for a computer musician to have on hand just as other musicians keep their *Harvard Dictionary of Music* handy—and is therefore an essential item for the shelves of academic music libraries. It is highly recommended for anyone who wants to deeply investigate the concepts of computer music.

Electric Sound: The Past and Promise of Electronic Music

Although the genre of electronic music is of course much younger than other forms of art music, it already has a remarkable history. From early instruments like the theremin to late 1950s experiments using arcane instructions on mainframe computers to today's desktop PC and Macintosh, the ideas and technology of computer music have constantly pushed each other in new directions. The incredibly rapid evolution of computer technology, especially since 1980, has enabled a multitude of computer music approaches and techniques to be realized; and often yesterday's innovation is yesterday's news. Nevertheless, today's computer musician can definitely learn much from the successes and mistakes of the past. Ideally, every composer and performer of computer music should be familiar with the figures and pieces that have shaped the genre.

Of course, in such a quickly evolving field, most participants have been too busy making music and learning the latest innovations to compile a comprehensive history of it. However, one active composer, Joel Chadabe (professor at the State University of New York at Albany), has recently taken on the challenge. The result is his book *Electric Sound: The Past and Promise of Electronic Music.* This text traces the development of electric musical instruments from Thaddeus Cahill's Telharmonium of 1897 to current interactive computer music systems, and ends with some speculative gazing into the future.

Electric Sound distinguishes itself from earlier electronic/computer music histories I have read in that it avoids getting mired in excessive technical explanation. In other words, whereas other writers have digressed in their texts to explain the details of every new innovative piece of hardware, software, or synthesis technique as it arose historically, Chadabe limits himself to brief explanations of these things. Readers must look to other sources (such as Curtis Roads's *Computer Music Tutorial,* reviewed above) to deeply understand the methods of electronic music. Chadabe's restriction of these materials in *Electric Sound* might not sound earth-shattering at first, but it has helped tremendously to focus his text.

In Chadabe's eyes, the history of electronic music is not the story of the innovations but instead that of the *innovators.* His book is about the people worldwide who have contributed their ideas to computer music, and the contexts in which these musicians and scientists have worked. Meanwhile, the progression of technology forms a kind of Schenkerian "background" to *Electric Sound,* so one might say that technological progress is the true topic throughout. But Chadabe ornaments the surface level of his text with anecdotes of concerts, studio experiments, improvisation groups, and compositions so that the reader always understands that his is the story of an evolving musical community, a community united by its constant fascination with the possibilities of the new.

Throughout the book, Chadabe's story comes wonderfully to life by means of numerous quotations from interviews with his subjects. For instance, when discussing the legendary RCA Mark II digital synthesizer of the Columbia-Princeton Electronic Music Center, Chadabe quotes composer Milton Babbitt eleven times, as well as Harry Olson (RCA executive), Charles Wuorinen (composer), Max Matthews (engineer and "Father of Computer Music"), and Harvey Sollberger (composer, flutist).

In all, Chadabe conducted over 150 interviews with members of the electronic/computer music community for this book, providing readers with interesting, idiosyncratic explanations and opinions about the ideas and music of each place and time. An example is Babbitt's description of Igor Stravinsky's visit to see the RCA synthesizer: "Stravinsky came up one Saturday morning and got so excited he had a heart attack. We had to get him a cab and get him back to the hotel." Thanks to first-hand descriptions like this, *Electric Sound* is not only informative but also enjoyable.

Of course, when covering nearly a century of musical history and careers it is imperative that the text be logically organized. In *Electric Sound* the practitioners of electronic and computer music are sorted according to common goals and/or common methodologies, and this is where the technology itself comes into play. Chadabe has divided his book into twelve chapters, and each focuses on one aspect of electronic music creation or performance, tracing its historical path. Thus, some composers

and instruments appear in more than one location, showing their position in the web of ideas from more than one point of view.

A case in point is chapter 1, "The Early Instruments." This chapter traces the study of music technology back to China in the 27th century BCE and Ling Lun's method for tuning the pentatonic scale. From ancient examples like this, Chadabe quickly moves forward to the nineteenth century, quoting E. T. A. Hoffmann: "But it would be the task of a really advanced system of the 'mechanics of music' to . . . obtain a knowledge of the tones which dwell in substances of every description, and then to take this mysterious music and enclose it in some sort of instrument." After this, Chadabe begins to give details of early electronic instruments, including the theremin, the electronic sakbut, the Hammond organ, and the RCA Mark II.

The other chapters proceed in similar fashion, following the threads of their topics, including "The Great Opening Up of Music to All Sounds," which traces the origins of *musique concrète* and its progeny; "Computer Music," which begins with Max Matthews's experiments at Bell Labs during the 1950s and progresses to today's complex systems utilizing techniques such as physical modeling and artificial life; "Synthesizers," which includes both the classic analog studios of the 50s–70s as well as uses of digital synths such as the DX7; "Inputs and Controls," which reveals many creative ways that have been attempted in order to give "musical" interfaces to electronic instruments; and "Interaction," which follows the history of musicians' attempts to create situations where an electronic instrument could perform by using its own musical intelligence. Finally, Chadabe looks into his crystal ball with "Where Are We Going?"

Another intriguing aspect of *Electric Sound* is Chadabe's recurring descriptions of "alternative" performances with electronics. These descriptions not only document part of the evolution of electronic music, but also trace a significant portion of the attempts during the second half of the 20th century to create musical performances different from traditional concerts. Chadabe begins, appropriately, with John Cage's *Cartridge Music* (1960), in which phonograph pickups and contact microphones are attached to household objects and used to amplify very quiet sounds. Other alternative performances mentioned include ones that featured improvisation, amplified brain waves, dance-controlled music, and installation pieces, among others. These sections are quite valuable because they remind the reader that truly innovative music contains innovative ideas, and that these ideas are much more important than whether or not one possesses the latest piece of technology.

On the other hand, one problem with *Electric Sound* is that it focuses on the use of electronics and computers in "art" music, ignoring the vast in-

fluence they have had on popular music, especially from 1980 to the present. Chadabe does mention the use of synthesizers by rock bands in one chapter, but this is mainly done to explain the economic situation of the company that created the equipment. New technology has been integral to recent trends in pop music such as hip-hop, techno, and other genres. For instance, hip-hop utilizes sampling, which is directly descended from *musique concrète.* Moreover, the steady beats of modern dance music are a direct result of synthesizers' precise timing abilities. In reality, if one examines the fringes of the pop music world, some of this music is indistinguishable from what is classified as "serious" composition in the electronic music scene. Therefore, it would have been appropriate for Chadabe to devote at least one chapter of *Electric Sound* to the use of electronics in pop music, and his failure to do so is perplexing.

Another slightly aggravating aspect of the book is what I perceive to be an underlying notion that the history of this music is the history of an evolution toward real-time interactive electronic music making. This point of view pervades the book and is sometimes detrimental, as it seems to relegate other forms of electronic/computer music, such as the installation pieces and tape pieces, to the evolutionary dustbin. Although interactive music can be intriguing, surely all the media of computer music continue to be valid. In fact, since interactive music's goal is to make the electronics into instruments and/or performers in the model of human musicians, it can be quite conservative conceptually. To realize the truly innovative possibilities from technology, it would instead be best to find the ways that it can do what a traditional performer/performance cannot.

In addition, at times in *Electric Sound,* despite Chadabe's best efforts to make the text enjoyable, it becomes a veritable deluge of artists' and researchers' names. While I sincerely appreciate his desire to be thorough and to give credit to all of the innovators who have contributed to the development of electronic music, the multitude of names sometimes begins to seem like the pops and surface noises on an old LP recording—a distracting presence that draws the mind away from the more significant content. Could it be that because he personally interviewed so many people, Chadabe mentions them in the text as a kind of "thank you" for their assistance? Or is he just a nice guy who doesn't want to overlook anyone's efforts? Whatever the reason, the body of the text would flow much more smoothly if the lists of names were trimmed a bit. One possibility would be to name a research group and/or its leader while listing the remaining participants in a footnote. This way everyone would be acknowledged without so much disruption of the narrative.

However, even with these shortcomings, *Electric Sound* is the best history of electronic music to appear for several years. Moreover, as I stated

above, its use of first-person narratives and quotations colorfully brings the topics to life, creating an enjoyable reading experience. While not every musician—or even every computer musician—needs to own a copy of this book, it is a worthy historical document and deserves to be available in every public and academic music library.

Note

1. Today several terms are used to describe sub-genres of the field I am calling "computer music." These include *electro-acoustic music* (which implies the participation of live instrumentalists), *tape music* (any piece in which the final form of the piece consists entirely of prerecorded audio on tape, CD, or other media), *acousmatic music* (which usually is tape music that involves highly processed samples of non-instrumental sounds), *computer music* (which to some aficionados indicates tape music without live performers, but which can be understood more generally —as I do in this review—as any music in which the computer takes on a primary role in the composition or performance), and *computer-assisted music* (music for acoustic instruments in which the computer is used to a large degree in the process of composition—usually involving some algorithmic processes). Technically, all of these computer music genres are sub-genres of electronic music (which also includes pieces that employ non-computerized electronic devices for music making). Another well-known sub-genre of electronic music is *electronica* (which usually refers to popular music created primarily by using computers and synthesizers).

Arnold Schoenberg. ***The Musical Idea and the Logic, Technique, and Art of Its Presentation.*** **Edited, translated, and with a commentary by Patricia Carpenter and Severine Neff.** New York: Columbia University Press, 1995. xxiv, 462 pp. Illustrated.

Reviewed by Murray Dineen

What's a historian of music theory to do? A historian of music theory is an oxymoron, torn between the impartial task of historical text criticism and the theoretic partial tasks of speculation and analysis.

The oxymoron is particularly acute in a gloss or commentary on a historical treatise. The historian tries to read with an unbiased eye. A theorist, on the other hand, reads selectively, looking for that which pertains to her theories, thus leaving unbiased historical perspective questionable. Under the historical guise of consulting older treatises (Schenker's manifold developing thoughts, to cite but one example),[1] a veneer of authority, sanction, and benediction has been applied to many a theoretic or analytic enterprise. And questionable results have been discovered, obtained, or simply produced. In the wake of poststructuralism, feminism, and gay and lesbian studies, we ought to know that no theory is the product of an immaculate conception. Born of a context—much of it polemic—theory carries its fair share of baggage. To pretend to the cool impartiality of historical textual criticism is to invite mischief.[2]

The history of music theory, then, is a deceptively difficult enterprise from a critical perspective. Any new foray into the field, such as this long-awaited edition and translation of the Schoenberg *Gedanke* manuscripts, is to be heralded with great foreboding and greeted with baited breath, not only for the actual contents themselves but also for the methodology brought to bear upon them. Despite some mechanical problems of presentation, this first edition of the manuscripts is a welcome addition to the swelling ranks of Schoenberg primary literature. My principal reservation: I wish that the editors, the late Patricia Carpenter and her colleague Severine Neff, had been able to distinguish their thoughts proper (Carpenter's in particular) from Schoenberg's conception to a greater degree. But then who is to point fingers in a discipline conceived along the lines of an oxymoron?

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The manuscript *Der musikalische Gedanke und die Logik, Technik, und Kunst seiner Darstellung* is fragmentary and incomplete, but nonetheless a comprehensive representation of Schoenberg's thoughts about music. In truth, this edition comprises not one but twelve manuscripts devoted to the "musical idea," written between 1923 and 1936 (the authors give a full list and description of the manuscripts as appendix 1). The body of the book, however, is taken up by the legendary tenth manuscript, known to theorists as the *Gedanke.* The remaining eleven, being much smaller, are relegated, untranslated, to appendix 3. (Whether this appendix presents the totality of each manuscript or only a fragment is not clear.)

This edition of twelve manuscripts comes on the heels of other recent translations of Schoenberg manuscripts, such as the important collection *Zusammenhang, Kontrapunkt, Instrumentation, Formenlehre* (1994). At the hands of Neff, Carpenter, and the indefatigable Charlotte Cross, the Schoenberg primary literature devoted to music theory has at least doubled and begs a careful reexamination of his thought and its relevance to modern and to historical theory.

The tenth manuscript is not presented here in its original, disparate form; instead, the editors have rearranged its contents under seven topical headings. Schoenberg himself made a particular collation entitled "Rhythm" in his revisions to the manuscript (although not without errors in page references), but with other topics the editors have made the collations themselves. The seven topical headings are as follows, with a thumbnail sketch of their contents:

1. *Preface and Overview.* Schoenberg's various attempts to write a preface and to sketch the musical idea and related concepts such as comprehension and coherence.

2. *Elements of Form.* An overview along the lines of a traditional *Formenlehre* but supplemented with offshoots of the musical *Gedanke* concept (such as *Gestalt* and *Grundgestalt*) and a kinetics of the musical phrase (the notion of liquidation).

3. *Rhythm.* The shortest but certainly not the least consequential of these collations, a set of jottings about stress, accentuation, meter, and rhythmic shapes or figures. The treatment of this subject is quite unprecedented in Schoenberg's published thought.

4. *Formal Procedures.* A discussion of formal articulation, connection, and variation that deals with topics such as tonic and dominant forms, cadence, liquidation, principal and subsidiary ideas, introduction, and development.

5. *Miscellaneous.* The relationship of performance to the *Gestalt* of a work, the meaning of repetition, and the tempo or speed with which a musical idea is presented.

6. *Harmony.* A lengthy essay on the "constructive function" of harmony, or tonality and its formal function as a framework or "blueprint" for motivic and thematic work in music. The essay includes discussion of the "extended cadence," regions, and "monotonality," along with a brief mention of "centripetal" harmonic function and the tonal "problem." All of this is illustrated with score reference to Brahms's chamber music.

7. *Addendum.* Motivic analyses of fragments from Mozart string quartets, and a list of words to be indexed.

In addition to reordering the manuscript, the editors have included a lengthy concordance to the often-esoteric lexicon of the *Gedanke.* Many of the entries therein are cross-referenced to Schoenberg's other theoretical works.

By means of these abundant cross-references, the editors confirm a longstanding suspicion: there are cogent theoretical issues in Schoenberg's thought that only collation and cross-reference of the various manuals and treatises will reveal. Largely utilitarian, written for elementary pedagogic needs, works such as *Structural Functions of Harmony* (1954) and the lamentably now unavailable *Models for Beginners in Composition* (1943) are sprinkled with deeper insights. Had these been collated before, Schoenberg's writings might have spawned a greater critical interest in his thought about harmony and form, and a more profound respect than that accorded it in recent years.

In addition to topics held in common with other treatises, however, there are novelties in the *Gedanke* manuscripts. Among these, surely the passages on rhythm are most striking, with little prefiguring them in the published work to date. Novelties aside, however, much of the material in the manuscript appears already in Schoenberg's other treatises. The volume's worth, then, lies largely in its supplementary and synthetic nature, and as a locus for thoughts scattered throughout Schoenberg's previously published writings.

The translation of Schoenberg's thorny phrases is evenly good, often comparable to Leo Black's excellent rendering of *Style and Idea* (1984). Because both the original and the translation are available to the reader on facing pages, accuracy of translation is not always crucial, nor with Schoenberg's turns of phrase is it always possible. The English rendering is clear, logical, and diplomatic to a fault, preserving various manuscript indications, such as underlining, and adding linking-arrows, in clear and legible format. The typeface is remarkably luxurious in these days of economic compression—large, clear, and easy to read.

Included are seven photos from the Schoenberg Institute's archives, some of which are discoveries: Schoenberg with Charlie Chaplin, with Zemlinsky, with Klemperer, Webern, and Scherchen, and another with a

bevy of conductors from a towering Klemperer to a tiny William Van den Berg.

The volume is not without its small faults of presentation, in the concordance and index particularly. Given the scattered nature of Schoenberg's thoughts throughout his published works and now the *Gedanke* manuscript, the concordance and index of terms are extremely important to Schoenberg studies, and deserve better care than they receive here. The concordance lists entries for the important concept of the *problem*—or "tonal problem" as it has come to be called—on pages 134–35 and 224–27, but nothing pertaining to the tonal problem is to be found there. As well, the concordance misses entries on pages 106–07, 246–47, and 320–21 (where Schoenberg ties the notion of *problem* to Brahms's Trio in C minor, op. 101). The relationship of the concordance to the subject index at the end of the book is quite unclear. At the head of the subject index, an instruction tells us: "Asterisks indicate terms included in the concordance." The asterisked term *tonal problem,* however, is not given a separate entry in the concordance; the concordance lists only *problem.* The entry *problem* in the subject index, however, refers us to *tonal problem.* Like the concordance, the subject index entry *tonal problem* misses the entries noted above and adds other mistaken entries. These various errors, however slight, are unfortunate in a reference tool devoted to consolidating Schoenberg's diverse and scattered thoughts.

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Between the preface and the translation the editors have provided a commentary, a lengthy essay attempting to sew a thread through the manuscript. Patricia Carpenter's hand is particularly evident here. Indeed, her reading of the manuscript is a kind of tacit rereading of her published essays, and many of the issues raised in her various publications pertaining to Schoenberg[3] naturally resurface here: a concern for the ontology of the work of art, which Schoenberg (despite his avowals of teaching merely the "craft" of composition) essayed throughout his life; an abiding interest in the notion of art as embodying internal, immutable "ideas" (as opposed to external "styles"—extraneous to the essence of a musical work); a notion of nineteenth-century organicism taking as its locus the living body as an indivisible whole; a concern with the musical work as a multidimensional creation in a properly musical "space"; a kind of logic proper to music ("musical logic"); the notion that a motive possesses a "characteristicness" linked to its harmonic or rhythmic shape or *Gestalt,* from which consequences are to be drawn during the course of a work (thus rendering the motive a *Grundgestalt,* or basic shape linked organically with the remainder of the work); and the notion of a "tonal problem," a perceptible sense of unrest or ambiguity, to which the remainder of the work relates as a kind

of resolution or restoration of balance and clarity.[4] These topics have been of abiding concern to both Carpenter and colleague Neff, and the manuscript is read largely in their terms.

The problem of separation between history and theory cited at the beginning of this review looms large here. To what degree does the commentary mirror Schoenberg's thought? How much comes directly from Schoenberg and how much have the editors produced? In particular, how much is the product of Carpenter's astute observations of music and tonality, observations inspired—but only inspired—by Schoenberg, her teacher at UCLA? The publication of this translation, taken together with other treatises now available, sheds a little light upon these questions. Unfortunately, some obscurity remains. Carpenter apparently derived from Schoenberg at least three concepts; the origin of a fourth, the "tonal problem," is not entirely Schoenberg's and is in all likelihood primarily Carpenter's. These four concepts are as follows:

1. *Tonality as scale degree function.* Schoenberg's conception of tonality as a set of scale degree functions has never really been in question since the publication of *Structural Functions of Harmony* and the chart of the regions contained therein (nor in fact since translation of the *Harmonielehre* (1978), with its treatment of modulation according to regions as scale degrees removed from the tonic). The *Gedanke* manuscript provides further evidence of this conception: a prototype chart of the regions on pages 334–37 and 340–41, with photograph facsimile on 338–39. A similarly geometric relationship of scale degrees lies at the heart of Carpenter's conception, in particular her use of the circle of fifths to represent modulation between regions of a monotonality. Here, Schoenberg's precedent is patent.

2. *Intervals as motives.* The *Gedanke* manuscript shows us that Schoenberg conceived of motives in tonal music in terms of simple intervals, and for good reason. A single interval allows itself to be located easily in a compound monotonal space built of scale degrees, and, as Richmond Browne (1981) noted some years ago, single intervals are basic signposts of tonality. In her analyses, Carpenter has always proceeded from a motivic shape comprised of two or three simple intervals, which combine in such a way as to suggest a tonality at the outset of a musical work. (As we shall see shortly, she linked this shape inextricably with the transformation of scale degree and harmonic function throughout a work, following the procedure known as the "tonal problem.") This concentrated motivic intervallic conception, it could quite properly be said, she had from Schoenberg.

3. *Motivic intervals as scale degree functions.* The linking of motive to scale degree is essential to Schoenberg's thought, witness its many manifestations: the notion of tonic and dominant forms, set forth in greatest detail in *Fundamentals of Musical Composition* (1967); the idea of the multiple

scale-degree meaning of chords and tones, ubiquitous in Schoenberg's writings; and the conception of keys or regions as scale degrees of a tonal center, implicit in the principle of monotonality. The *Gedanke* manuscript takes up these topics again: tonic and dominant forms (234–35), multiple readings of chords as scale degrees of different regions (311), and the thesis that "every establishment of a so-called foreign tonality should be regarded only as the xth degree that is carried out as if it were a key" (331). All these Schoenbergian aspects of motive as scale degree are to be found in Carpenter's work, and this again puts her squarely in the tradition of her teacher.

In this regard, let us set one record straight: the reputed "Schoenbergian" analyses of Rudolph Reti (1961, 1967) have nothing to do with the present understanding of Schoenberg's conception. Reti's notion (interesting in its own right and in terms of its day) shows nothing of Schoenberg's *a prioris*: a concentration on simple intervals, on scale degree functions, and ultimately harmony. From this point on, Reti's analyses can only be held up as "Schoenbergian" in error or as strictly limited to their time and scholarly context.

4. *The tonal problem.* Merely linking motives to scale degrees in local musical space tells us little about the larger facets or aspects of a musical work. To represent the musical work in these larger terms, an analyst needs to present the function of select motives and their scale-degree contents in terms of some dynamic vehicle. The tonal problem as construed by Carpenter constitutes just such a vehicle or theoretical apparatus: for Carpenter the multiple meanings of certain motives—the tonal ambiguity of their intervals and scale degrees—constitutes a problem posed structurally in a musical work. In essence (and following Schoenberg), the first pitch of every piece takes on a kind of tonic or tonal centrality. Every subsequent pitch can in principle usurp this central referential status. From competing claims of centrality a problematic tonal obscurity emerges. The tonal problem is solved through the logical relation of all pitches in a work to a tonal center. The motivic clarification of certain critical scale-degree motives throughout the work effects this structural solution to the problem. This process of clarification constitutes the formal element—or what, following Schoenberg, we might call the "constructive function of harmony"—in a work of tonal music. But just how much of this is Carpenter's thought and how much belongs properly to Schoenberg are questions left largely unsettled by this manuscript and its edition.

The answer to both questions is an uncomfortably close call. Schoenberg was aware of the form-building possibilities of an ambiguity (see the entry "problem" in the concordance). But in none of his theoretical writings published prior to the *Gedanke* manuscript is the concept of a *problem*

related directly to motivic content with the same kind of motive/scale-degree/tonality linkage established by Carpenter in her writings. While there is evidence that Schoenberg drew such a linkage in the *Gedanke* manuscript, nowhere is this explicit, at least with such detail and rigor as in Carpenter's work. That the editors' commentary does not adequately distinguish between Schoenberg and Carpenter in this respect is a shortcoming, but also a lacuna not out of keeping in a field just beginning to develop a critical relationship between history and theory. The section of the commentary devoted to Schoenberg's appraisal of the first movement of Brahms's Piano Quartet op. 60 serves the editors as the locus for assessing his conception of the tonal problem. They suggest that in the analysis of op. 60 "he focuses on a harmonic detail that represents the problem" (63). Since Schoenberg, immediately after quitting his discussion of op. 60, introduces his remarks on Brahms's op. 101 Trio by noting that it "shows a similar problem" (similar presumably to op. 60), I would concur with the editors that the term lay within his lexicon. To what extent he conceived the problem, and whether it approximates Carpenter's thought, remains unclear, however. Whether out of modesty or editorial effacement, the commentary is not helpful on questions of provenance for the tonal problem.

For example, the editors state that in his treatment of op. 60, "Schoenberg noted three features in [the] opening phrase: the initial semitone (interval *a*), the descending hexachord, and the cross-relation contained in that hexachord, B♭/B♮" (67). In the manuscript pages devoted to op. 60, however, the interval *a* appears in a musical illustration (Schoenberg's pagination 207a, reproduced on p. 317) but is not mentioned in Schoenberg's text. A hexachord containing or implying a cross-related B♭/B♮ is to be found in neither text nor example. (The editors speak in the previous paragraph of a hexachord (E♭ D C B♮ A♭ G), but again this does not appear to be Schoenberg's concept.) Nor is the cross-relation B♭/B♮ marked by him in any way.

Despite these problems of authority, we are thankful for the commentary as an analysis. The notion of a hexachordal frame applied to tonal music is, like so many of Carpenter's insights, fresh and exciting. The editors go on to demonstrate the importance of these motives to a tonal problem—a foray into the remote keys of C♭ major and A♭ minor, alongside the initially inexplicable presence of the sudden E-major chord at mm. 28–30. But this is their reading, their analysis, their application of the concept of tonal problem. In subsequent discussion, the editors make a convincing argument for the importance of these "three features," but by no stretch of the imagination can all three be called Schoenberg's. (It must be said that not all the evidence of Schoenberg's thought is on the

table yet, and indeed reference is made in the footnotes to Patricia Carpenter's class notes[5] and in the footnotes and glossary to the class notes of Gerald Strang held by the Schoenberg Institute[6]—neither source being mentioned in the bibliography, however.)

The methodological problem of the commentary is one of critical distance. A more careful indication of the gradation between Schoenberg's and Carpenter's thought should have been remarked. Fortunately, the methodological problem does not detract from Carpenter's work, which is strikingly original on its own terms as a remarkable synthesis inspired by and thus distinct from Schoenberg's thoughts.[7] One cannot help but wonder at the neglect accorded her work in the field of music theory in general, unless one notes that she was active in a field peopled by men in the days before this was seen as an inequity, and that she was a lonely advocate of Schoenberg in the days of the Schenkerian conquest, or the "Americanization of Schenker" (Rothstein 1986: 5–17). This self-effacing commentary will not do much to support the fact that Carpenter was a major theoretic mind in our time, capable of great depth and persuasion (in this regard, perhaps Schoenberg's equal).

* * *

In summary, the publication of the *Gedanke* manuscript, while making available some new material, will function primarily to confirm and solidify our impression of Schoenberg's thought as continuous and comprehensive. In light of the project of tonal-problem analysis, the manuscript reveals less than we might have hoped for, although there is evidence to strengthen the thesis that Schoenberg conceived of tonality and motive in the rigorous particulars of scale degrees.

Apart from the content of the manuscript, there remains an unsettling question: Where does Schoenberg's work leave off and Carpenter's begin? As noted at the beginning of this review, the division of music theory from its history is quite unsettled. Ideally, the historian as translator and editor will keep careful diplomatic distance from the application of the ideas contained in a manuscript, and the theorist in applying those ideas will keep careful distance from their diplomatic presentation. In practice, history pulls one way and theory pulls another, and rents and fissures are evident in much work done under the twinned rubrics. But what's a historian of music theory to do?

Notes

1. See Proctor and Riggins (1988: 102–26) and Snarrenberg (1994: 29–56).

2. See Littlefield and Neumeyer (1992: 38–65) for a disturbing disclaimer (page 48) absolving Schenker of his autocratic opinions as simply a product of his time.

3. See Carpenter 1983: 15–38; 1984: 394–427; 1988a: 341–74; 1988b: 31–63; 1991: 21–47.

4. See especially Carpenter 1983, 1988a, and 1988b.

5. See footnotes 93, 148, and 224.

6. See footnote 190, and the glossary entry "Joining Technique" [Anschluss-Technik] on page 380.

7. Perhaps because this is a commentary on Schoenberg's text and not a self-standing analysis of the Brahms movement, the analysis itself is condensed and difficult. Someone not familiar with Carpenter's analytic method (or with the Schoenbergian concepts of cross relation and tonic and dominant form) will want to turn to her earlier analyses, and to Schoenberg (1943, 1954, 1967).

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Chamber Symphony 1998

By David Hönigsberg

Introduction

The long road of political awareness began at university, starting with the realisation that my vision of the world, and that of those around me, was vastly different from that of most of the rest of white South Africa. Although I previously could identify with the Nationalist struggle of the Afrikaner—a result of my education as well as the influence of my peers, the radio, and the general conversation of society—I did not fully understand its implications. State propaganda made obvious to me that white people were superior just by being white. Black people were different. I was not encouraged to see why this was so. It merely was. The Dutch Reformed Church explained creation: Adam and Eve were the first *white* people, from whom all white people are descended. Darwin's theory—incorrect in terms of the "creation" of white people—was correct when explaining the existence of black people. The white folk were made in the image of God. Black people evolved from the apes. The whites had come to Africa in sailing ships and were therefore technologically advanced. They found an "empty" land, and while settling down throughout the length and breadth of it came across the primitive arboreal black people. This mythical picture of the indigenous African was further "proof" of their simian lineage.

In the dictatorship of the Republic of South Africa, every facet of my youth was somehow influenced by patriotism, nationalism, and propaganda. My Afrikaans family had an illustrious history, fighting for freedom since their arrival in the Cape of Good Hope[1] in the early 1700s as Dutch Huguenot refugees. In 1840 my forefather became president of Natalia, the First Boer Republic in Natal. The Boer War (South African War of 1899–1902) saw the imprisonment of my maternal grandmother at Ladysmith by the British and my maternal grandfather forced to water British horses at the age of 13. Cousins fought heroically at Majuba against the British and had their farms razed to the ground by Kitchener. There was ample reason to be patriotic.

My Afrikaans schooling emphasised the Irish struggle against the British. This metaphor was cleverly exploited to draw parallels between the Irish and Afrikaner struggles against British domination before the Nationalist election victory in 1948. Later personal discoveries showed that the Afrikaners were generally against South Africa's involvement in World War II and that many prominent Afrikaner politicians and academics had

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done a tour of duty in Nazi Germany before the war. Similarities between Nazi race laws and those of Apartheid need no explanation. The Afrikaner romance with Germany and the Germanic tradition is a persistent thread in much of Afrikanerdom. It bears directly on how music, as well as other cultural activities, influenced the Republic.

My father was a German Jew, and at the Afrikaans medium school I learned German language and literature. My father, born in Leipzig in 1909, had a love of German culture, literature, and cuisine, which I saw as a purely natural part of life. I knew about the war and had discovered the Holocaust, which was more fascinating than shocking in its gruesome details for a fifteen-year-old. Most of our direct family had managed to escape Nazi Germany, except for my paternal grandparents. They were eventually forced into exile in Bacau, Romania, where they survived. My grandfather worked in the local cemetery. The Jewish side of my life was limited to a basic knowledge of the most important holidays. My father's vocabulary was peppered with Yiddish expressions, and Jewish friends were frequent visitors. Jewish humour and wisdom—not to mention sarcasm and embarrassment—were part of daily life. At the English medium school I was a Jewish Afrikaner and at the Afrikaans school, the *Engelsejood* [English Jew]. I was on the outside looking in. Although I felt my isolation keenly, I relished the peace and quiet it brought me.

My increasing politicisation came about as a direct result of contact with students from other "race groups." Until my enrollment at Wits University, I had never had contact with any members of these groups, other than those who worked for us at home and at the farm. I had never met people of another colour who had the same level of education as me —students who were literate in matters musical, theatrical, and cultural.

Cultural Life in South Africa

Cultural life in South Africa had been of political significance ever since the Nationalists gained power in 1948, during which time there was a conscious effort to bolster their legitimacy by actively encouraging and sanctioning aspects of the arts that were commensurate with their ideology. What the National Party (NP) needed were some seriously minded artists, writers, and composers who would be willing to incorporate NP ideology into their works. The goal was to underpin all cultural programs in such a way that within twenty or thirty years the lack of African influences would not necessarily be an issue. After all, under the grand scheme of Apartheid, there would be no mixing of racial groups; each group's identity would be sacrosanct. If Western culture could find a strong enough following in South Africa (with the country divided into strictly controlled racial areas), the vigorous incorporation of Western artistic

aesthetics would eventually lead to the creation of a unique South African style. Cultural inheritance was therefore not a birthright; rather, it was something that rode upon the back of a great injustice, which perpetuated, for reasons other than the expression of the human soul, economic and cultural dominance. In the Republic of South Africa, each permutation of the government reflected the never-ceasing attempts of white South African society to model itself culturally as closely as possible on Europe, and to finally arrive at the cultural scheme of Grand Apartheid. Cultural colonialism was a propaganda tool to support the fascist[2] ideals of the NP, who in turn used all possible means to legitimise their claim to racial superiority.

To this end, the cultural apparatchiks set about finding and promoting white talent. As of 1948 the search for the South African Bartók/Kodály had begun. It seemed to be the logical solution to the problem. If Bartók had been able to help create Hungarian nationalism, then it would be only logical that a South African (white) composer would have to be found who would do the same for South African serious music.

Much time and debate was spent attempting to define the exact parameters that such a composer would have to fulfill. To try to define the more-or-less officially required style in South Africa is troublesome. I would readily call it Christian National Realism, taking advantage of the corresponding meaning envisaged by Soviet Social Realism. Christian National Realism refers to music that meets all the requirements demanded of it by the "culture controllers" of the National Party. These controlling organizations included the Afrikaanse Taal en Kultuur Vereeniging (ATKV: The Afrikaner Language and Cultural Association), the Performing Arts Councils, the South African Broadcasting Corporation, and the various Departments of Education.[3]

However, there were many other organisations that controlled culture in South Africa—too many to list. Most frightening of all is the revelation that *all* cultural activities, *irrespective of racial background,* were controlled and funded by the Department of Defence under its WHAM (Winning Hearts and Minds) Project. As with all totalitarian states—and Apartheid South Africa was one, even down to having a sham parliament—culture is a powerful weapon in controlling a population. Many composers were used to perpetuate Afrikaner domination and the myth of Afrikaner cultural superiority.

If you were part of the establishment—a *Regieringskomponis* (Government Composer)—you had your works performed, recorded, and even published. If not, you survived on the outskirts, scraping out a living through teaching, journalism, and the occasional concert. Alternatively, you became a perpetual student, playing music on campus and not generally causing a ripple of concern in the greater world. To glance through

the concert programmes during the years of Apartheid is fascinating. It is not difficult to follow the development of the careers of those individuals whose styles were congruent with the political climate of the time, and to chart their rise to South African stardom. There were almost no black composers in this group up until the late 1980s.

Musical education in South Africa excluded African music from the curriculum. There was no way, other than through independent study, that this music would be available to you. This begs the question: Do South African composers want to be seen as African, or do they seek to be part of the extended family of European composers? Some composers graft folk elements onto their music, but this is precisely where the problem lies: African music in Africa is not folkloristic. The inverse is certainly true. European art music—for want of a better term—is the importation, the foreign element. It is as exotic as its given locality and provenance. It is, in fact, the insistent presence and use of Western compositional techniques that block the way to a generic African cultivated music. The processes of traditional Western composition are elements that are foreign to African music making.

Examining the body of work of other composers in South Africa and comparing it to composers who left the country earlier, it seems that today there is indeed a postmodern style present in South African serious/art music (at times exhibiting neoclassical aspects, with a strong accent on the Germanic tradition of Hindemith through Orff). More germane to the argument is that many South African (white) composers seek solutions in models that are European and American rather than African.[4]

Interestingly, the vivacity of the jazz and pop scene in South Africa is testament to the abilities, dedication, and diversity of the many successful artists working in the country. Technology and accessibility have made contemporary South African pop music a viable force in "world music," and it is gaining popularity around the globe. However, a multitude of inherited vested interests, as well as the lack of a performance standard that is comparable on a significant scale to that of Europe and the U.S., makes the future for cultivated music quite bleak. The further rapid disbanding of the arts councils and symphony orchestras has exacerbated the situation. At present, the curious combination of economic necessity and euphoric cultural idealism is not conducive to the flourishing of the contemplative arts. Commercial music and market necessities will, in part, determine the course of South African serious music culture if it is to survive.

Johannesburg . . . Soweto . . . Switzerland

In 1980 I met artist, architect, and environmentalist Alan D. Schwarz, who was to have a profound effect upon my creative, philosophical, and

personal life. Schwarz had already established himself as one of the leading young lions in contemporary art in South Africa, and in particular in Johannesburg. Our meeting started a collaboration that explored the relationship between art/music and colonialism and the many inequities found in Africa.

All art imported into Africa is Art with a capital "A" (excluding folk or ethnic art). Through the colonisation of Africa, Western artistic values—experienced as a part of the "natural" social fabric—had permeated the society and had led to a distinctive South African lifestyle. This lifestyle was uniquely reflected in South African Art, Music, Literature, and Architecture. *Art* created a resonance far beyond its own apparent importance; it became ritual. Because all this activity was imported, Schwarz and I examined ritual as part of colonisation. For instance, our theatre piece *Music to Serve Sherry By* explored the extent of ritual found in serving sherry (a symbol of colonial decadence and coincidentally anti-antiapartheid). The action was highlighted through the repeated playing of three brief, bi-tonal piano pieces of an obvious salon nature.

This ritual/performance included the act of being formally received and brought into a room (with musical accompaniment), drinking South African sherry while looking at cartoon art, and after social niceties and perhaps a purchase of one of the artworks, departing. The piece is built on the assumption that the observer/participant has been enculturated with the sherry-serving ritual. This preparation (enculturation) thus becomes a focal point of investigation. In other words, the ritual of attending a Cultural Event (e.g., the opera) is an expression of a number of intrinsic and many-layered values. Our contention was that these imported values have no place in a country such as South Africa. However, they now form part of white society's ritual fabric. These rituals are usually not specifically religious or political in nature; rather, they are subtly inculcated into people's psyches, and inform their behaviour through schooling and exposure to the norms of this particular society (yielding a kind of Fitzcarraldo effect: importing an absurdity into the jungle[5]). Ritual as a concept is not always evident to the participant, who, as the subject, is merely fulfilling an *expected* function—the cumulated effect of many such rituals over time.

I wrote *Six Pavilion Pieces* in 1982 to further explore the relationship between ritual and music. It is a suite of short pieces for Palm Court Orchestra—each piece a cartoon of some greater cultural ritual. It includes an *Overture* in the style of Gilbert and Sullivan, a *Romance* (as homage to Kipling), a *Tango,* etc. Schwarz and I invented our own Monsieur Croche: Selwyn Bernstein, an art critic and dealer who praised and "bought" all our work. Selwyn Bernstein was a man of the world—the Old

World, an adventurer who had come to Africa, like many before him, to make his fortune. Selwyn Bernstein could fill any role we desired, and was an important part of the game because he personified many of the aspects of ritual and behaviour we were outlining in our work.[6]

The Natives Are Getting Restless, for Palm Court Orchestra, is more sardonic and political, and explores Africa's greatest tragedy: its peoples were generally welcoming and forgiving, and no match for the cool, calculated aggressiveness of the colonists. By the end of the colonial era, the damage had been done both to us and to Africa. *The Natives Are Getting Restless* points to the uncertainty of the future, and makes the case that once colonialism was physically dismantled, its legacy would remain for a very long time.

The Second String Quartet is the first work in which I explore an independent style, away from the norms of acceptable academic composition, or academic colonialism. It is a one-movement work of seven minutes duration. Sharply contrasted rhythmic sections of 7/8 and 5/16 alternate to create a sense of forward movement. There is no development. Harmonically, it is cast in a modal A-based plane, making use of semi-minimalist techniques, and incorporating traditional contrapuntal techniques such as canon and inversion. Short, original, African-sounding melodic cells propel the movement forward, arriving at two points of rest on a nontonally-related C (as mediant) pedal point. The construction is deliberately simple, avoiding any complex relationships that might revert to a more Eurocentric style. The work sounds "African"—whatever that might mean—but it is played conventionally, relying on traditional concert attitudes for its appreciation.

These pieces began the trend to an ever-increasing political awareness in my music, which led to: *Soweto 1976; Three Pictures from an African Life;* Concerto for Viola and Orchestra; the violin concerto titled *Threnody for the Victims of Boipatong;* and *African Games.* The *African Dances* are perhaps the most significant pieces since the violin concerto. They are short piano pieces built up of melodic and rhythmic fragments of my own invention, and are undeniably African. The Third String Quartet, which follows closely on the heels of the *African Dances,* is a 25-minute work in three sections. I make use of onomatopoeia to describe the African bush, insects, frogs, Wildebeest (Gnu) and all matter of things natural. Both of these works form an important part of my musical thinking up until the writing of the Chamber Symphony (the incorporation of both absolute/abstract and narrative elements into the music being of specific importance in its germination).

My compositions and political beliefs have also been affected by my work with vocal ensembles. For instance, I have had the opportunity of be-

ing able to work with Imilonji KaNtu [Voice of the People], a Soweto-based choir. I did this illegally, traveling to the rehearsal venue by car, without the necessary entry permit to Soweto. Soweto was and is a disgrace. It is devoid of vegetation; the large orange spotlights stand eerie sentinel over the vast expanse of the township; overcrowded with the terribly poor, it has few basic facilities. Our repertoire included Britten's *War Requiem* and Prokofiev's *Alexander Nevsky*. I transcribed both pieces into tonic sol-fa. My work with Imilonji has subsequently had a direct and lasting effect on my writing.

Choral singing in South Africa was used as a means of protest. Gatherings of more than three people were illegal, but church meetings or the group-singing of religious pieces were tolerated. A work such as Handel's *Messiah* was as much a protest piece as a religious work, in which Christ represents the struggle for freedom. Consequently, hymn and psalm texts had double meanings; music truly became an instrument of rebellion. Another obvious advantage to choir meetings was the ability to disseminate information. The choir awarded me the title of Honorary Sowetan for my efforts, and gave me a *dashiki* as a symbol of my election.

In my own pieces, I have incorporated choral or hymn-like sections as direct references to Soweto, townships, and the circumstances under which we worked. I have particularly tried to reflect that sense of community in the violin concerto *Threnody for the Victims of Boipatong* (1999) as well as in shorter choral works. The use of organum and quartal harmony in my anthem *Der Herr Segne Dich* [May the Lord Bless You] (1991) is also an example of this.

In short, when composing, I have to find a way to deal with issues relating to my African/European heritage, which means not losing sight of this heritage and its implications, yet remaining true to my own individual inspiration. All music written with a relationship to South Africa comes with its own totemic problems and iconography. I cannot *not* be a South African composer. Nonetheless, I desired recognition outside the borders, and eventually moved to Switzerland.

Chamber Symphony

The Winterthur Orchestral Society commissioned a work from me for their 1998 season. The programmatic Chamber Symphony is the result of this commission. It is scored for double woodwinds, 2 horns, 2 trumpets, trombones, timpani, percussion, and strings, and has a duration of 20 minutes. The work is in one continuous movement and has four distinct sections, which unfold *without* significant development. The formal/structural process is more a spiraling towards a final point of rest than a carefully constructed logical path towards a cadential end. Textures and groups of

instruments express not only musical considerations but also emotions. The extramusical emotional points are achieved through somewhat simple means, which will obviously speak differently to each individual auditor.

An important inspiration for this piece had its origin in a news report that showed a group of approximately 35 school children standing in a row, defying the South African Riot Police. The children were in school uniform and were dancing, pretending to hold AK47s in their young hands, and chanting: *This is a Bomb, This is a Bomb, Ta-Ta-Ta-Ta-Ta. This is a Bomb, This is a Bomb, Ta-Ta-Ta-Ta-Ta. This is a Bomb, This is a Bomb, Ta-Ta-Ta-Ta-Ta. This is a Bomb, This is a Bomb, Ta-Ta-Ta-Ta-Ta.* This image found expression in the penultimate section of the piece, scored for tutti and two concert bass drums, and continues for about three minutes (see fig. 1).

The work opens with dark sounds (see fig. 2), not unlike those used in *Soweto 1976.* There is a sense of foreboding. Long woodwind chords create a sense of stasis, and suddenly a rhythm starts to build in the strings, growing to a crescendo—all quite simple and descriptive. The rhythm is then broken off with the reappearance of a cluster in the higher strings. A fragment of melody appears (see fig. 3) before it is interrupted by a massive tutti. The tension relaxes and the fragmented melody appears throughout the upper reaches of the orchestra over an ostinato bass, which is the first strong rhythmic cell to be introduced (see fig. 4).

The strings then introduce another rhythmic figure, which they pass around among themselves. The ostinato now appears in the woodwinds, and a sense of darkness begins to unfold. The woodwinds play a chorale (see fig. 5). Chorales reflect various rituals—the reference here is to choral singing as a means of political protest rather than as religious expression. A playful theme starts up but goes nowhere, large tutti chords interrupt, and the next section begins with the strings playing repeated notes, which in turn begin to "form and undo" a harmonic progression related to the earlier cantus firmus.

Repetition—again a formal element of ritual—plays an important role in the work as a means of reinforcing events (see fig. 6). The strings now bring in some relief in the form of a melody. A tutti builds until it becomes almost unbearable to listen to—this is anger. It is a nightmare, too, interrupted by the long-held note played *fortississimo* by the bassoons! (see fig. 7a). There is a short silence; a Messiaen-type modal scale descends (see fig. 7b) and returns the interest to the second theme.

Pillar chords in the woodwinds and brass—the march of fascism—accompany the second theme (see fig. 7c). Again the strings come to the rescue, and begin a more dance-like rhythm. Suddenly birds sing (see fig. 8); they are the innocents, the bystanders who have no part in the violence. High horn calls bring the section to the end.

The third section is that of mourning. The strings play continuous melody over a number of independent contrapuntal lines (see fig. 9). A set of claves beat arhythmically against a pizzicato violoncello accompaniment. This tune repeats four times, each time becoming stronger and more tangible. A trumpet begins to intone the same melody together with the strings; eventually, the regular beat of a single bass drum becomes ever more apparent, and soon the melody swells to a *forte.* This section mourns death, love, and—though an apparent contradiction—life, too.

The reverie is broken by the onslaught of the entire orchestra playing the chant, *"This is a Bomb, Ta, Ta, Ta, Ta, Ta"* with both bass drums *ffffff,* symbolising the firing off of tear gas at the innocent. The tempo indication is *Brutalé.*

As the "last" chord echoes throughout the hall, the denouement starts: a gentle, melodic overlapping of woodwinds and brass begins the process of returning to a point of rest (see fig. 10). The timpani enter, beating rhythmically this time, and the string sections tap on their instruments as the death beetles do their work (see fig. 11). Gradually, the whole peters out to nothing, and leaves the listener with a sense of futility and exhaustion.

This is a Bomb, This is a Bomb, Ta-Ta-Ta-Ta-Ta. This is a Bomb, This is a Bomb, Ta-Ta-Ta-Ta-Ta. This is a Bomb, This is a Bomb, Ta-Ta-Ta-Ta-Ta. This is a Bomb, This is a Bomb, Ta-Ta-Ta-Ta-Ta . . .

Figure 1

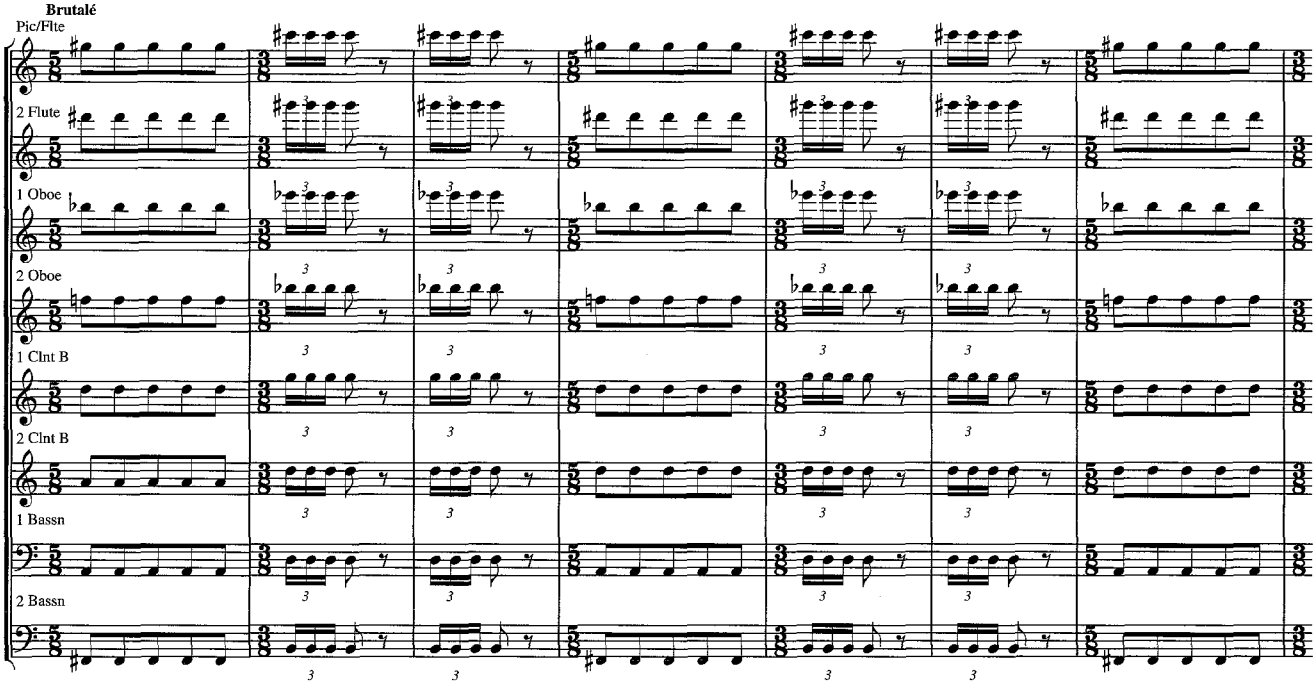

Brutalé
Pic/Flte
2 Flute
1 Oboe
2 Oboe
1 Clnt B
2 Clnt B
1 Bassn
2 Bassn

Figure 1 (cont.)

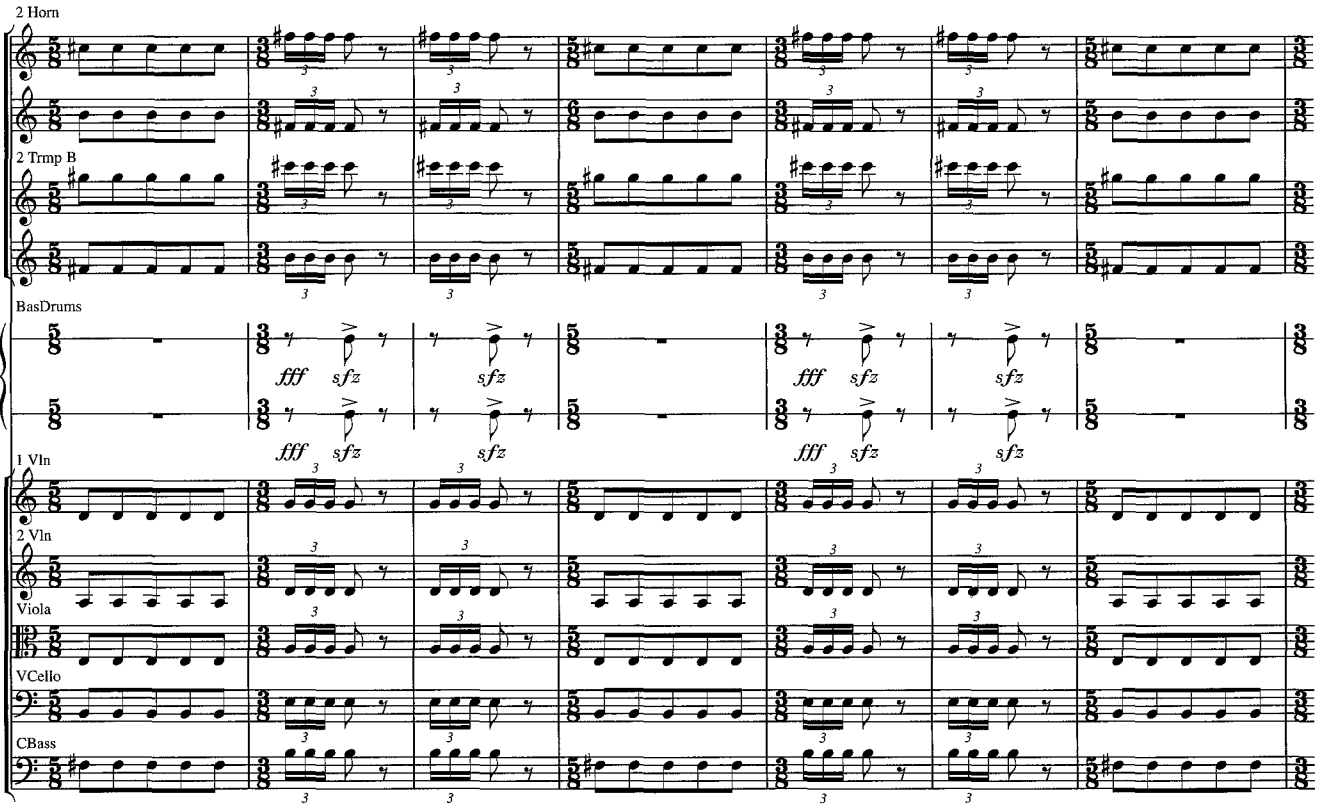


Figure 2

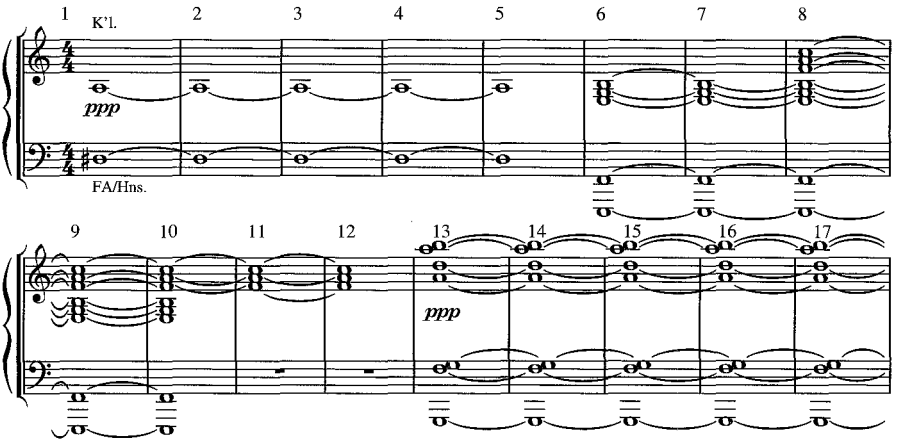


Figure 3

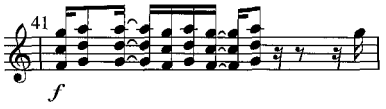


Figure 4

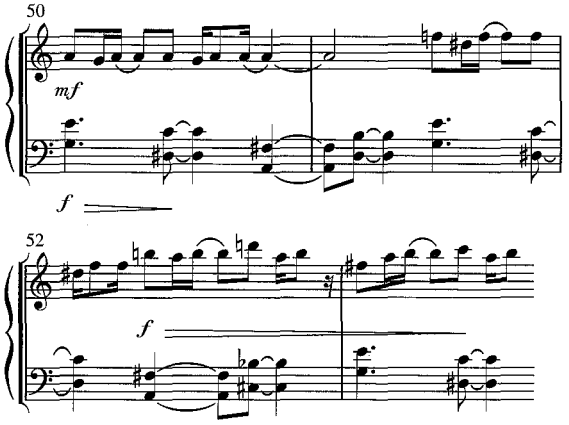


Figure 5

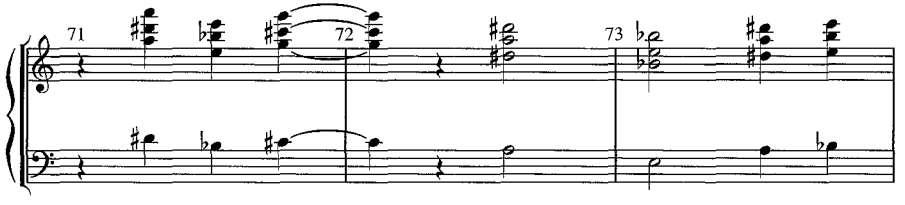


Figure 6

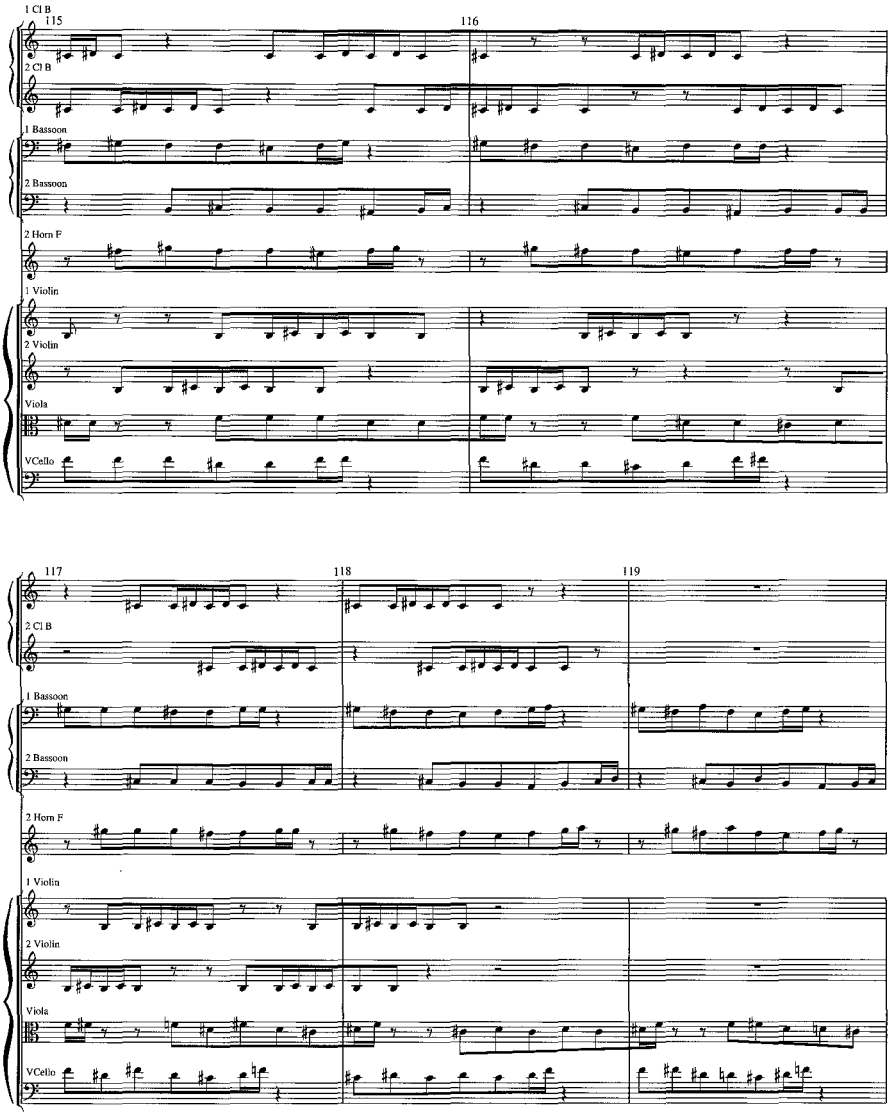

1 Cl B
115
116
2 Cl B
1 Bassoon
2 Bassoon
2 Horn F
1 Violin
2 Violin
Viola
VCello
117
118
119
2 Cl B
1 Bassoon
2 Bassoon
2 Horn F
1 Violin
2 Violin
Viola
VCello

Figure 7a

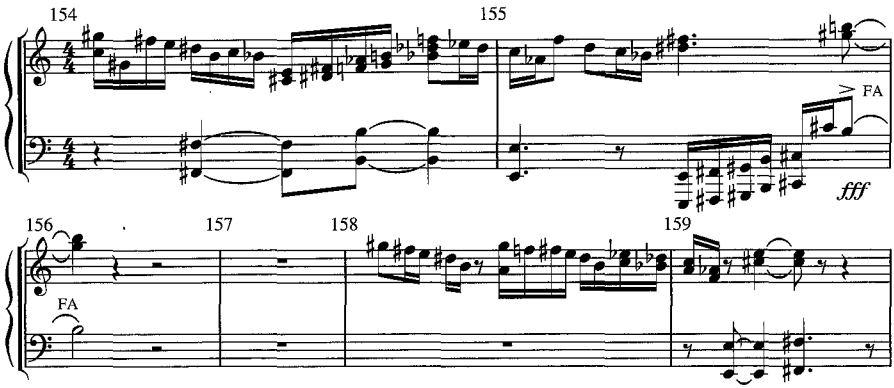


Figure 7b: Modal harmony.

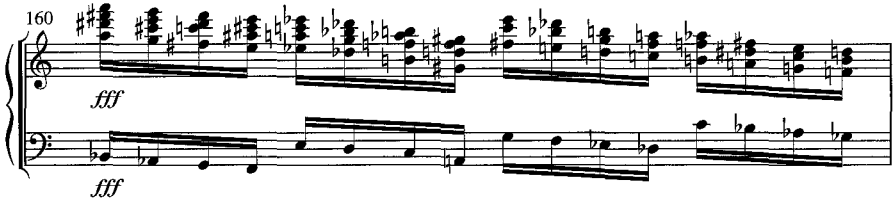
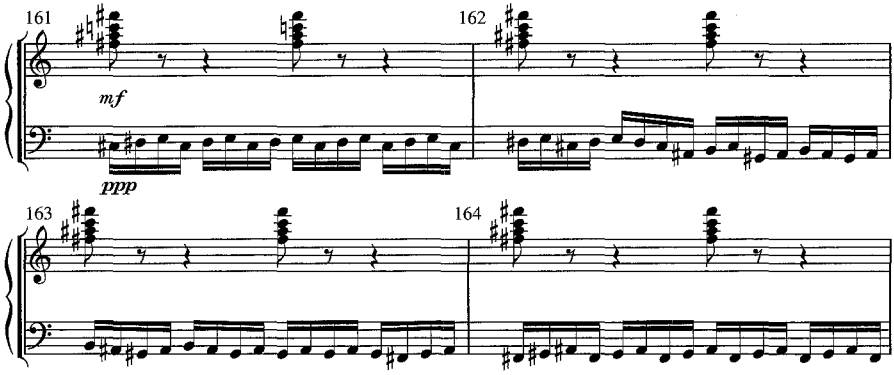


Figure 7c: "March."



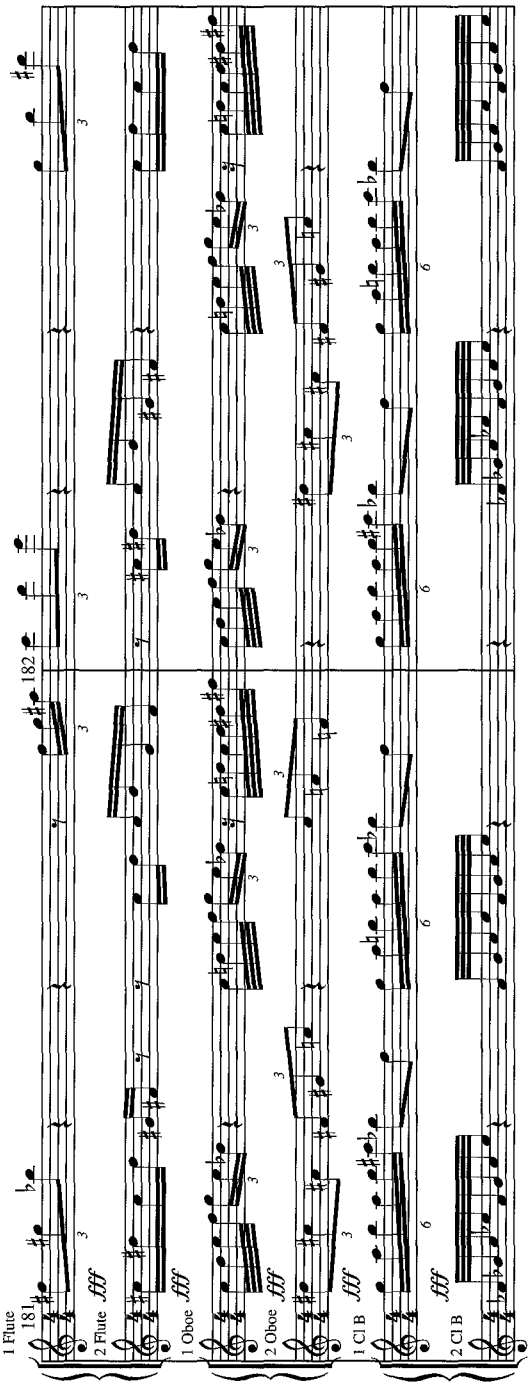


Figure 8: Birds.

Figure 9: Continuous melody in strings.

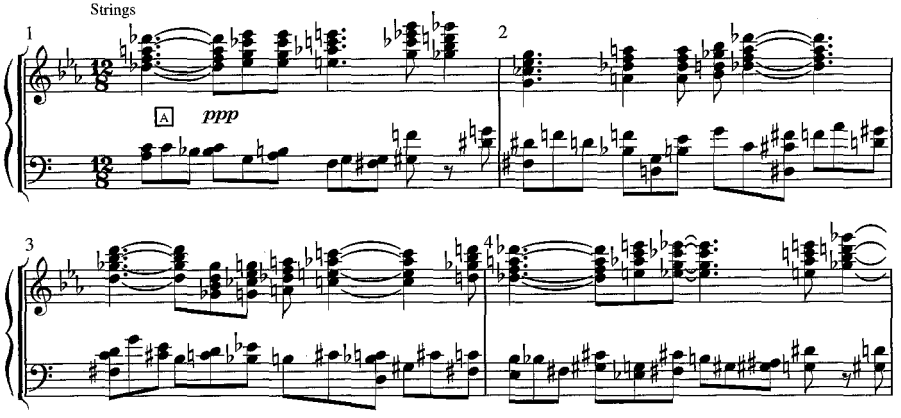


Figure 10

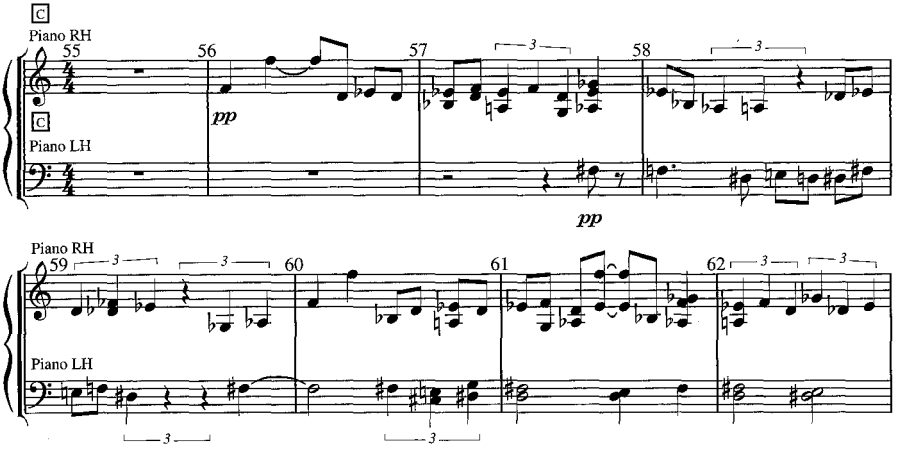
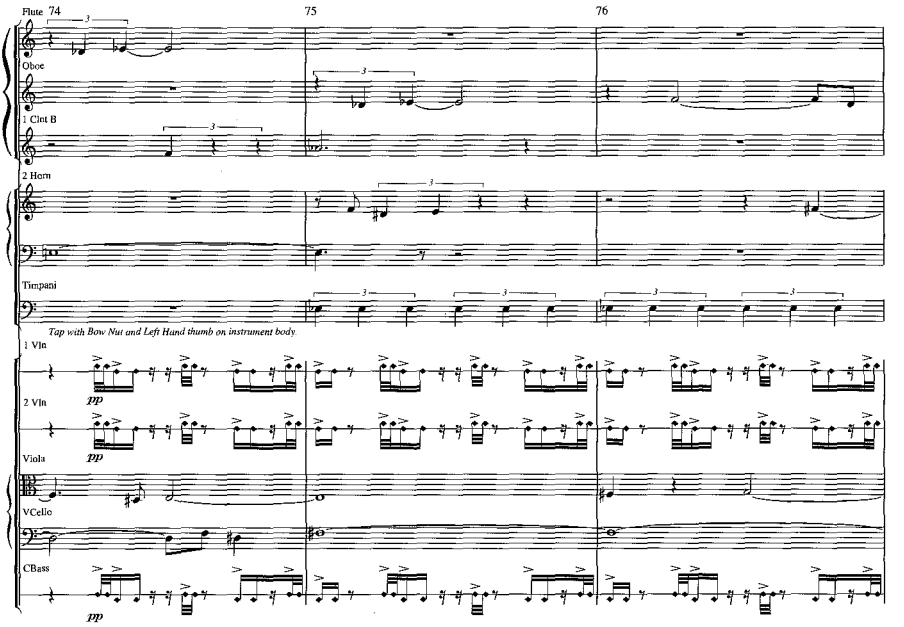


Figure 11



Notes

1. I have always found the name "Cape of Good Hope" terribly ironic.

2. Fascism, according to the *Oxford English Dictionary,* tends to include a belief in the supremacy of one national or ethnic group, contempt for democracy, and an insistence on obedience to a powerful leader and on a strongly demagogic approach to various societal issues.

3. There is a resultant phenomenon to this stylistic restriction, which I call *Africaniosity:* South African serious music is defined by the importation of extra-African traditions and techniques that are imposed upon elements that are perceived as African. It is musical colonialism, much the way Spanish music was judged against the Spanish works of Rimsky-Korsakov and Tchaikovsky—*ergo* "Spaniosity."

4. On one level, perpetuating a Eurocentric tradition is not a bad thing, though it is unfortunate that so few have tried to find their African heritage. Today, under the African National Congress, most previously existing cultural institutions are closing down, even though the desire for some Eurocentric culture

seems to be as important for some of the population as before. Perhaps this latest (postmodern?) development in South African serious music is a desperate attempt to justify survival in what is essentially a hostile environment.

5. *Fitzcarraldo,* a film by Werner Herzog, tells the story of how a European man brings an opera company to his rubber plantation in the Amazon Basin. It is the epitome of colonial arrogance.

6. *The Great Selwyn Bernstein's Party Music Emporium,* my arrangements of Victorian and Edwardian salon music, was met with some enthusiasm.