1 INTRODUCTION

Since the Renaissance at least, the arts have been conceived as ways of exploring the universe, as complementary to the sciences. To a certain extent, they create their own fields of research; their universe is the language they have shaped, whose nature and limits they explore, and in exploring, transform. Beethoven is perhaps the first composer for whom this exploratory function of music took precedence over every other: pleasure, instruction, and, even, expression. A work like the *Diabelli* Variations is above all a discovery of the nature of the simplest musical elements, an investigation of the language of classical tonality with all its implications for rhythm and texture as well as melody and harmony.[1]

So wrote Charles Rosen in his study of the classical style. It is a judgment with which few musicians today would disagree, either in its characterization of Beethoven or its broader focus on the arts. Indeed, what may with Beethoven have been an unusual preoccupation with structure has since become a prevalent musical concern. Structure, analysis, the study of systems—these are in large measure the intellectual currency of the twentieth century. Their domain has long since extended beyond "objective" data, the seeming province of physical science, to pervade methodology, even conceptualization, in such "inexact" fields as the social sciences and the arts.

Science has been drafted as a handmaiden in this new world view, various of its modes of perception—linguistics, mathematics, physics—co-opted wherever they might provide the means for more precise definition of concepts, or for greater control and technique in studying the arts. Science's growing awareness of theory itself—its construction, uses, limitations—is reflected in the self-scrutiny of recent music and musical theory. Certainly no music in the past has been subjected to such detailed study or sophisticated modes of analysis as music within our time. Particularly is this true for music *of* our time, most notably for that vein of contemporary musical thought that has evolved from the serial concepts of Schoenberg and his school.

It is curious that with the developed techniques of analysis and with the heightened perception and awareness of musical content that have arisen from the study of contemporary music, tonal music of the eighteenth and nineteenth centuries, particularly of the so-called classic-romantic era, eludes our comprehension on many levels. We still do not fully understand what makes this music "work"—what factors impel its temporal forward motion, what controls the unfolding of its contents, what precisely constitutes its rhythmic structure. Nor is it clear what analytical perspective will best penetrate and reveal these properties. Is stylistic analysis pertinent? Does "form" reside within the "formulas" codified by an earlier generation of theorists—ternary, sonata, rondo? Do Schenkerian analyses satisfactorily account for these questions?

Subtle questions persist on levels more difficult still to come to terms with. How do we explain the musical as well as psychological feeling of unity sensed in the great works of Mozart, Haydn, Brahms, Beethoven? Given, for example, a sonata-form movement from the piano sonatas of Mozart, why can we not substitute in it themes from other of these sonatas, assuming congruence of tempo, key, and meter?—a question Rudolph Reti posed explicitly in 1950 and one on which many musicians have mused before and since.[2] Why, for that matter, can we not alter the given sequence of themes within the same work? What determines the propriety of their order of appearance?

Further, what factors in these works make for coherence? Is the syntax of conventional harmony a major cause, or is it perhaps a surface facade that in its efficiency as a system hides deeper causative elements?

The domain of the unknown is not confined to the abstruse or the ineffable. With respect to the demonstrable in tonal music—for example, to harmony and to tonal relations—how are we to understand events within these parameters that are beyond the normative? What in fact do we mean in describing these events as "nonnormative"? Nonnormative in relation to what? Prevalent practice? A composer's own style (if this can be generalized)? Or nonnormative with respect to the individual work itself? Does a work establish its own norms? If so, can these be unearthed and can musical events in these works be seen as extensions of these guiding principles? Or do these events belong perhaps to that domain which Edward T. Cone has suggested is "beyond analysis"?[3]

These questions do not necessarily refer to extreme harmonic phenomena such as Wagner's "Tristan" chord. They pervade the earlier repertoire. What of chromatic harmony in Beethoven's *Eroica* Symphony, to choose one of many examples? Why the augmented sixth chords in measures 22 and 44? How explain the abrupt harmonic shifts that initiate the coda (measures 551–564)? What thinking lies behind the juxtaposition, beyond normal practice, of tonal regions only distantly related: E minor to E♭ major in the *Eroica;* F♯ minor to G minor in the Symphony No. 40 of Mozart (first movement, beginning of development); the Neapolitan regions of Beethoven's Op. 59, No. 2; Op. 95; Op. 57 (*Appassionata,* first movement); or the numerous similar instances in Haydn, Schubert, Brahms?

Unquestionably, aspects of composition do lie beyond analysis. Are we to assume, however, that events such as those described lie within the domain of the ineffable? On what grounds can we justify such an assumption? Are not these events perhaps manifestations of some manner of systematic thinking, operative in musical realms beyond those to which an older theory paid close scrutiny? Should not this possibility be explored before consigning such striking musical moments to the realm of the beyond?

If the systematic view is tenable, some consequences with interesting implications follow. For one, it would seem that the analytical process must concern itself with systems and their properties. Further, the process must designate and elucidate those musical premises that in part determine systems, as well as designate the hierarchical places of events that occur within systems. If musical events can be convincingly shown as aspects of system, in other words, as deliberate, then the boundaries of the unknowable—that which is "beyond analysis"—will be pushed back to confine a smaller territory. Or perhaps they will mark a different territory, one which contains more intuitive compositional decisions, as Cone has suggested. For instance, why, given methods of treating material, each seemingly of equal value, should one treatment be chosen above the rest?

Contemporary musical thinking has developed perspectives that can provide insight into some of these problems of music from past eras. Indeed, historical demarcations, admittedly artificial time frames, can at times distort a deeper reality—the concern with the past that is a living part of the present: Stravinsky admired and emulated certain features of the classical style, consciously turning them to personal account; Webern transcribed Bach; Schoenberg transcribed Brahms and Monn; Ravel did homage to Couperin; Britten, to Rossini. None of this was mere feasance. Features of the older music were of live interest, providing modes of study for the newer works. The new in

turn heightened perceptions of the past, as well as modes of its performance.[4]

Concern with the past offers valuable insight in yet another dimension. For while contemporary music only occasionally and for special reasons may have emulated the past, in a deeper and more general sense it has evolved from past practice. This is particularly important in regard to serial thinking, perhaps the dominant and potentially richest vein of thought to have emerged in this century. The fact that Schoenberg's approach to music had at its roots concepts from studies of tonal music from Bach through Brahms is of more than purely historical interest. It suggests that serial concepts themselves—as explicit viewpoints and procedures—may yield insights into similar viewpoints and concepts of earlier, tonal music.

If so, these ideas provide a special assist to analysis. For classical music rarely formulated its compositional practice into explicit concepts. The concepts lay embedded in the music itself, requiring extrapolation from the internal evidence of a specific work. Some concepts were yet more elusive, for they were in part precompositional, envisioned in advance of the stage where a work assumed concrete shape. As such they exerted a pervasive but generalized influence over the music that came into being, serving a role in compositional thought (as they still do today) analogous to assumptions in verbal thought. The parallel is limited, however. For while we are trained from an early age to sense and to negotiate verbal thought, our training in the conceptual thought of music attains no comparable level. Only lately in fact has even the awareness developed of the kinship shared by the two modes of thought.

Thus we must often grapple with the elusive in dealing with musical structures. If in this process any concept—be it analogical, historical, visual—offers insight or assistance, it is useful. At times it may also be speculative—though this at first may seem a curious choice for a rational process that seeks the specific and the demonstrable. If speculation poses the "right" questions, however, it may lead to a sequence of observations ultimately capable of theoretical statement: verifiable and explanatory of data in a manner more comprehensive than previously possible. Theory, once made, can dispense with the speculation that led to it.

Speculation plays much the same role in creative thinking as it does in theoretical or analytical work. This is hardly surprising, as analysis seeks at ever deeper levels to touch and retrace the creative process. Composition in its early stages often requires extraction of the essential core of an idea from a domain of imprecise impressions. Once caught, the idea can be stated with definition (a rhythm, a shape, a timbre, all of these), hence dealt with. Stravinsky has described the process eloquently in *The Poetics of Music.*[5] Schoenberg's *Grundgestalt* represents a stage in the process, the rendering of the imprecise into the precise. Beethoven's sketchbooks are a view into the process itself.

Upon the arrival of the actual work, aspects of precomposition become its expendable appendages: musical volition, that which sought form-giving shape (Stravinsky's "speculation"), now appears an act removed from its initial creative role. It acquires primarily an aesthetic interest. In the same manner, working sketches become documents of history. An underlying concept of shape (as Schoenberg's) devolves into a historical, or past, element or stage in the compositional process, though analytically it is still relevant.

Given the validity of speculation in theory-building and analysis, speculation would seem valid as well in theoretical writing, provided (and the qualification is essential) it is seen for what it is and not confused with established, demonstrable certainty.

Musical complexity is in general a stumbling block to analysis, for the analytical method often seeks a unitary, if not unified, view of things. Singularity is in some ways an intrinsic analytical necessity, for the act of analysis is by prerequisite selective. It is a species of model-building, by its selective nature deliberately and unavoidably distortive, yet useful for making particular observations. Analysis is at odds, however, with a perceived, total reality. Effective analysis views its object as through a prism, whether its perspective is historical, rhythmic, or harmonic. It places a coherent frame around its perceptions—a beguiling frame, in fact, so clear and so secure it is in the facts it reveals. This may be false security, though, for in reality no such coherent frame exists. The work is a composite of many perspectives, all intertwined and cofunctioning, manifested in differing degrees of prominence at any given moment and on differing levels.

Thus no one analytical perspective can possibly provide all the relevant information about a work, for by its many facets a composition precludes such a singular view. The musical reality and the analytical model must ever stand both in contradiction and in symbiotic relation. It is an uneasy but unavoidable coexistence, its causes lying in the physical and psychological impossibility of viewing simultaneously and with equal attention multiple and differing phenomena.

Recognizing this, it becomes clear that no one analysis can truly "explain" a work, nor can any one analytical perspective suffice. For that matter, neither can any analysis possibly substitute for the rich amalgam of surface and substance that constitutes the work. If anything, the full measure of the work might be the hypothetical composite of all relevant information provided by different analytical approaches. And by the criterion of relevance (though this must be determined), we do not exclude the need for analytical discrimination. Clearly some observations are more discerning than others.

ANALYTICAL PERSPECTIVES

As with any inquiry, the results of analysis will in part be determined by the assumptions and the frame of reference shaping the inquiry itself.[6] To date, three or four analytical perspectives have characterized the existing literature. For lack of better terms, the first two might be described as the historical-stylistic approach and the formal-descriptive approach. A third is the analytical system developed by Heinrich Schenker; a fourth, less codified to date, is the concept of *Grundgestalt,* or basic shape, as set forth by Arnold Schoenberg.

The first two approaches hardly need discussion here, as they have been widely developed over a period of years and are buttressed by a large existing literature. Historical-stylistic analysis, long characteristic of musicological research, embraces diverse concerns through a basically historical orientation. These concerns may range from accuracy of historical detail or attribution vis-à-vis individual works to styles of performance practice in differing eras. The latter field alone is vast, including matters as varied as Renaissance practice of *musica ficta;* development of instruments and instrumental technique; bowing styles in baroque music; fashions of ornamentation and improvisation in different historical periods, to mention only a few. Clearly all of this is pertinent to an informed approach to music of any time, our own not excepted.

The formal-descriptive view of form has characterized analytical writing for decades and is perhaps best represented by authors such as Sir Donald Tovey, Hugo Leichtentritt,[7] and recently, Wallace Berry,[8] in a perceptive treatment of the subject. The approach is largely descriptive of such things as phrase lengths, harmonic progressions, modulations, and musical character of themes—these in terms of surface information, features of a

work presumably apparent to the trained musical mind. In his book Berry tries to avoid these generalities in part by a categorical approach: subclassifications are created within classes of established musical forms to account for idiosyncracies found in individual works. Thus ternary form is broken down into simple ternary, incipient ternary, compound ternary, integrated compound ternary, extended compound ternary, and so on. The method is somewhat akin to botanical studies in their stratification of genera, species, and subspecies. Like botanical classification, its usefulness lies largely in identification.

The shortcomings of the formal-descriptive approach have met their due share of criticism.[9] With its tendency to categorize, and by the very natures of its formulas, formal-descriptive analysis creates models to which actual works conform in only the most general way. It deals primarily with musical surface and lacks the analytical equipment to probe the deeper inner dynamics of music itself or the unique properties of an individual work.

For all its inadequacies the approach is useful, and though some of its spokesmen have in an almost maddening way proffered surface for substance, that information it does provide seems prerequisite to more sophisticated analysis. There are, after all, phrases, cadences, simple harmonic motion, sections, modulations, three-part forms, rondos; one cannot comprehend music without taking such features almost for granted. Even advanced thinkers from Schenker to Schoenberg have accepted the categories and some of the terminology of the approach as conveniences at least, while indicating their limitations.

The studies of Schenker, and the analytical method that evolved from them, offer an approach to analysis of a deeper order. Schenker has suffered unjustly in the past from misunderstandings of his theories and, in the English-speaking world, from the unavailability of translations of his most important works. Fortunately these misunderstandings are receding, and Schenker at long last is beginning to come into his own. The forthcoming English translation of *Der freie Satz* (1935), the last and in many ways most important of Schenker's books, should be a significant contribution to his English bibliography, complemented by a growing list of articles and books on his ideas, that has developed over the last twenty years.[10]

It is not possible to do justice to Schenker's extensive thought within the space of this book. Nor, in view of his expanding bibliography, is this necessary. Familiarity with his ideas will be important, however, in following much of this book, as many of his concepts are assumed herein.

Schenker's contribution to analytical thinking is manifold, its major aspects involving the following points: (1) Structure is clarified through perspective. The small and the large, particularly with respect to melody (line) and harmony, are seen separately. (2) A distinction between structure and embellishment emanates from perspective. Structure determines long-range formal projection. Embellishment does not; its purview is local, that of detail and prolongation. (3) By means of reduction technique, musical structure is revealed in layers (*Schichten*), moving from a foreground of localized surface detail through various middle-ground levels, in which the more far-reaching features of structure are abstracted from surface presence, to the ultimate background—Schenker's *Ursatz*. Here the bass and upper melodic line (*Urlinie*) form a coordinated fundamental structure, the temporal projection of the tonic triad, a phenomenon shared by all tonal works. (4) Harmony, particularly at intermediary points, is shown as resulting from line and from counterpoint. It is put in realistic perspective, removed from the textbook

distortions of verticality, inversion, chord labels. Harmonic inversion, concurrently, is seen as the result of melodic flow of outer parts. (5) Harmonic movement in the large, and the key centers other than the tonic that it engenders, are seen in relation to the primacy of the tonic, the only true tonality of a work. The conventional idea of "modulation" is replaced by a view that reveals tonal motion in a broader and richer (and more realistic) perspective. (6) The concept of compositional unfolding (*Auskomponierung*) is introduced, the "essence of music," wherein voice-leading serves "as the means by which the chord, as a harmonic concept, is made to unfold and extend in time."[11]

If there is any secret to the art of composition, surely it lies in this last concept, the often intuitive sense for unfolding a work in time. To do so is more than simply to project a structure through some period of time. It is also to sense, to construct, and to control the manner by which this structure reveals itself, stage by stage, withholding certain of its contents until particular timed moments—and throughout maintaining musical tension and focus until its final moment.

For Schenker this unfolding was essentially a harmonic event, the working out, through line, of the tonic chord. As such it is an inadequate concept, for though it projects harmonic progression in time, it is in itself essentially nontemporal—nonrhythmic. Yet the inner dynamic of this process, the unfolding and the inner control of musical tension, is probably rhythmic at its core.

The concept of unfolding established by Schenker has the potential for further extension. Schenker's graphs, though they cope specifically with rhythm almost not at all, nonetheless are suggestive of rhythmic flow and of the inner dynamics and tensions that accompany this flow. Texture, weight, orchestration, and the many other dimensions of music that contribute to rhythmic definition can be found to coordinate with the harmonic and melodic (phrase) demarcations of Schenker's graphs. (Chapter 5 of this book focuses on this relationship.) No one man can investigate all the implications of his ideas. Schenker himself was aware of the possible extensions of his concepts. With regard to orchestration, for instance, he realized that weight and textural definition by instrumentation were not matters of chance or intuition, but that they explicitly served to emphasize features of structure.[12]

Schenker's conceptual framework, like any framework, leaves certain cogent questions untouched or inadequately answered. Rhythm, in both its local and large-scale roles, is one. So are the more general questions of the unity and the "uniqueness" of a given work—the reasons why, as Rosen has put it, the inner sense of a work should have taken just its specific outer form. How does a work achieve a sense of unity such that all its parts, all its component elements, seem cut of one piece? Could not other lines, other local harmonic progressions, be substituted within a given Schenker graph and equally fulfill the general middleground functions demonstrated by the specific work in question? Or, to refer to a question posed earlier, could not other themes, other motives, be substituted satisfactorily for those of a given work, assuming congruence of key, meter, and tempo? Most musicians, probably by intuition, would answer "no" to these questions. Yet to sense musical unity is not to demonstrate it. An analytical framework is still needed that is oriented toward these concerns.

To answer questions of unity, one must eventually come to grips with the forces that shape thematic material—with motive and its larger implications. Schenker deals with motive on some levels, but tends to see it as a subsidiary force, functioning within a more basic framework of harmony, and seemingly subservient to the primacy of harmony. In passages in his book, *Harmony* (such as pp. 4 ff.), which represents an early

stage in the working out of his theories, he recognizes the motive as an organizing force that gains cogency through repetition—repetition that may, but need not, be literal (perhaps a presaging of Schoenberg's concept of "developing variation"; see Appendix A of this book). Oswald Jonas, in his preface to *Harmony* (pp. xvi–xvii and 4–5, fn.), points out that Schenker later, in *Der freie Satz,* recognized the organizing function of the motive as a background force.[13] Indeed graphs from Schenker's later studies, such as *Der freie Satz,* do illustrate motives in this light. Motives are often seen as the linear "filling-in," at various structural levels, of the notes between the extremes of a motivic interval. Almost never are they rhythmic. Thus while the motives in Schenker's later studies provide an illuminating concept, they are not concerned with the full significance of motivic shape to musical organization. This seems to be a matter of emphasis; Schenker's primary concerns lay elsewhere. The compositional concepts of Schoenberg, on the other hand, were deeply involved with motive as a prime form-giving force in music. These concepts provide the basis for much of this book.

Although Schoenberg's thinking was oriented almost to an extreme toward motive, the concept had considerably different meaning for him than for earlier writers like A.B. Marx or Hugo Riemann, for whom motive was in the main seen in its local, contiguous note-to-note perspective. (Riemann at times indicates awareness of more general and large-scale formal manifestations of motive, such as the *Hauptthema* in Beethoven.) For Schoenberg, the term "motive" itself was really a subsidiary concept, a subspecies of the much broader concept of *Grundgestalt,* or basic shape, as it has come to be known in English.

The *Grundgestalt* concept was not a simple idea, though it was central to Schoenberg's thinking and lay at the base of his conceptualizing about music. He made it more difficult for his followers by never addressing the idea directly in print, despite his extensive articles on musical subjects. Apparently he only discussed it with his students. It is from their accounts, then, that we must construct his exact meanings, aided by the numerous indirect references to the idea in his articles and his instructional books. These matters are pursued in the following chapter.

The structural views of Schoenberg and Schenker are, if anything, complementary. They share important features in common, though the emphases and viewpoints differ. Both, for example, recognize musical surface as foreground projection of background ideas. Both recognize the "composing-out" or "unfolding" process as the essential inner life of a work, though the conceptions of the process itself are at some variance. Both view musical structure on various levels. Both see harmony, distant tonal regions, and the so-called process of modulation in relation to the primacy of an overall tonality. (Schoenberg's *Harmonielehre* makes this quite clear, as do Josef Rufer's accounts of his teacher's views on harmony.)[14]

Further, both are keenly aware that harmony is a prime motivating force in tonal music. (Rufer's discussion of Schoenberg's *Grundgestalt* shows that harmony played a large role in this concept. See Rufer, pp. 56 ff.) If there are significant differences between the two approaches, they lie in the degree of emphasis upon the formative roles of shape and motive, and of rhythm. In this respect, the reference frame of Schoenberg broadens that provided by Schenker.[15]

The following chapters are in part concerned with Schoenberg's *Grundgestalt* concept and its broader implications for musical structure. Some of these implications are suggested by the serial ordering of pitch to which the *Grundgestalt* gave rise in twelve-tone music, and by the extension of properties related to the *Grundgestalt* found in total serial-

ism. The relevance of shape to rhythmic structure, as well as its further implications for pitch in the domains of localized harmony, and of tonal relations in a larger perspective are studied in subsequent chapters. Nuances of phrase, dynamics, and articulation are also studied in terms of their structural importance.

These studies build upon previous work in this area, including Schoenberg's writings; the efforts of those within his circle to clarify some of his ideas; and studies by Rudolph Reti,[16] Hans Keller,[17] Alan Walker,[18] and Charles Rosen.[19] Rosen's work, unlike that of the others cited, avoids a singular orientation to shape as the fundamental formative influence. He touches upon this viewpoint and its ramifications, however, and with insight.

The studies by Keller and Walker deal primarily with pitch shape, particularly with respect to themes. Rhythmic shape to date has received less attention—though Keller and Walker have touched upon it—and little systematic treatment. The harmonic and tonal implications of shape, as well as nuance, are mentioned in various places but have yet to be extensively developed.

Reti's studies were among the first to appear concerning thematic shape and process. To them must go much of the credit for initially exploring a new terrain; to their failure, unfortunately, must also be attributed some of the skepticism that greets subsequent studies of thematic relevance.

Reti's studies are characterized by a largely intuitive approach, and by an almost total absence of methodical proof. Thus while he has some valid insights, his presentation often marshals dubious evidence, with the effect of weakening the credibility of his contributions. Terminology is only minimally defined; neither are criteria presented for discerning the structural from the ornamental within themes. Little or no account is taken of structural levels; nor of the roles of stress, accent, syncopation, or rhythm in general; nor of harmony. The scale degrees upon which structural notes may rest are often left undistinguished. Thus two themes in different keys may be seen as congruent, where the same note in one rests on the tonic and in the other on, perhaps, the submediant, with different accompanying harmonic implications. Much of the writing simply asserts, equating conjecture with proof, or stumbles upon the intentional fallacy. This is particularly true of the chapter on thematic key relations in *The Thematic Process in Music,* where the mere existence of two notes relevant to a theme is given as proof that they generate key relations on the same roots, with no further demonstration.

Schenker's *Ursatz* and *Urlinie* and Schoenberg's *Grundgestalt* with all its larger implications, can be viewed from a different and still broader perspective. Both are species of compositional premises, perhaps the most significant and determinative of such premises.[20] They are not, however, the only premises operative in composition. Subsequent chapters in this book examine others, ones more properly viewed as subpremises functioning within the larger confines of the structural concepts outlined above. Ambiguity in the rhythmic and pitch properties of basic musical materials is seen as such a subpremise. Procedure itself in some works constitutes another manner of subpremise. So do some local events—a small pitch motive, for example, which may generate manifold harmonic structures, making of a piece a virtual exploration of these derived harmonic possibilities.

All the foregoing analytical systems can also be classed together, within a still larger perspective, as essentially "static" as opposed to "dynamic." That is, they view a work in its already-composed, fully laid-out structure, shifting the focus of attention among various parts for purposes of comparison, demarcation, quantization. (Schenker's

approach, as will be discussed, is less oriented this way than others. Yet, while it indicates the forward *direction* of a work, it is not fully concerned with its *dynamics* of forward motion.) This observation suggests that the next analytical perspective needed is one which concerns itself with the inner motion of compositional growth—in brief, with the internal mechanisms by which a work unfolds in time.

As suggested earlier, this unfolding is primarily a rhythmic phenomenon. Rhythm itself, though, is not a parameter that is fully defined by its own internal elements. We identify rhythm and its articulation as much (or more) by harmonic progression, linear contour, texture, and weight—criteria from other musical domains—as we do by accent, stress, metrical emphasis, and agogics. The large-scale role of rhythm in formal articulation may perhaps be determined by factors within these other domains. This view and its usefulness as an analytical perspective are explored in Chapter 10.

It would be well to review the limitations imposed upon the studies that follow. First, they are concerned with music written within the era commonly known as classic-romantic, in effect from Haydn and Mozart through the middle nineteenth century, as delimited by Brahms.

Second, these studies are restricted to music written in what might be called the German-Viennese tradition—the most seminal body of music that emerged during this broad period.

Third, they are confined to absolute music. Our understanding of structure is still sufficiently unclear that it seems advisable to avoid the further complications of words and/or dramatic action—implicit or explicit—and their relations to structure, or their effects upon it.

A fourth and final limitation: the matter of "expression" in music is beyond the confines of these studies. Statements like this may offend readers who assume thereby that "expression" (the imprecise term is indicative of the problem itself) either does not exist in music or is considered unimportant. This is not the case. The limitation here is a practical one alone; the question of what music "says" is vast and complex and demands separate study. Nor is the question divorced from interests discussed here. The old dichotomy between form and content has long since been recognized as false, with the consequent awareness that much of what a work has to "say" is intimately intertwined with the manner in which it wields and transforms its materials. For its materials are the means as well as the medium of its communication. Indeed, in attacking this problem it is first of all essential clearly to perceive, to recognize, and to comprehend what it is we hear, free of external or misconstrued meanings. It is this multiple task that is the central focus of this book.

The question for which many listeners seek answers about music and its expression is basically one concerning the personal message communicated by a work. This must remain a separate study, one which in fact has amassed a broad and even ancient literature. Interested readers might pursue work by Suzanne Langer,[21] Leonard Meyer,[22] and Nelson Goodman[23]—among the more perceptive contemporary treatments of this subject.

Ultimately these concerns about musical expression may never be answered in the verbal manner that some would hope for. For the question itself is framed at variance with the realities of musical communication. Whatever "expression," values, or personal interior world is communicated by music, however compellingly, it is communicated through a medium—sound and time—that is unique, intrinsic unto itself, and incapable of translation. Were this not so, we should long ago have seen more success in the many at-

tempts to relate musical essence through metaphor, poetic description, analogy, and image. The medium tempts translation: it is in some respects a language itself, in many ways parallel to spoken language, possessing grammar, syntax, inflected meaning, levels of structure, styles of usage. Yet within its property of nontransmutability lies much of the compelling quality of music.

To summarize: analysis can be viewed as a species of model building, by nature selective and thereby (deliberately) misrepresentative of the whole, by means of which certain properties can be studied in isolation from their context. No one analytical perspective or approach can be expected to explain or reveal all the significant properties of a work, as such results would be incompatible with the analytical process itself.

To date analysis seems to have unsatisfactory answers to questions such as what factors in music make for coherence, unity, uniqueness; or how to comprehend musical events seemingly beyond the norms of convention.

Four analytical perspectives are prevalent: the historical-stylistic, formal-descriptive, Schenkerian, and that of basic shape as intuited by Schoenberg. The Schenkerian and Schoenbergian have much in common and, in their differences of viewpoint and emphasis, are complementary. Other more recent approaches, often cross-fertilized by scientific disciplines, have been mentioned: approaches associated with mathematics (set theory in particular) and information theory, as well as with linguistics and physics.

This study begins with an examination and clarification of Schoenberg's *Grundgestalt* concept, an idea which lay at the base of his serial thinking but about which he did not write directly, though he discussed it with his students. Its ramifications for structure with respect to rhythm, harmony, tonal relations, and possibly nuance and dynamics, are subsequently examined—their relevance suggested by the explicit recognition of these implications in total serialism.

The foregoing perspectives can be seen in another light as musical premises, that is, as bases, either stated or assumed, upon which musical reasoning proceeds. While they may in fact be the most pervasive of musical premises, they are not exclusive. Others will be examined in this book, such as ambiguity, the generative properties of local events, and procedure itself.

Finally, within a still larger perspective, all these approaches can be seen as essentially static. They view a work in its laid-out dimensions for purposes of localized study, comparison, and demarcation, free of the active influence of time. A dynamic perspective, as a complement to these others, may be valuable as an insight into the mechanisms by which music unfolds its properties in the dimension of time.

NOTES

1. Charles Rosen, *The Classical Style* (London: Faber & Faber, 1971), p. 445.

2. Rudolph Reti, *The Thematic Process in Music* (London: Faber & Faber, 1961), ch. 1 (first edition released in 1950). Alan Walker has also studied this question in his book, *An Anatomy of Musical Criticism* (London: Barrie & Rockliff, 1966), to the extent of an experimental "rewriting" (really, a reordering) of the sequence of themes in Mozart's Piano Sonata in F Major, K. 332, first movement. See pp. 60-64.

3. See Edward T. Cone, "Beyond Analysis," *Perspectives of New Music* 6, no. 1 (Fall-Winter 1967): 33-51.

4. This concern with the past is continually evident in the thinking, talking, and writing of contemporary musicians. Two examples:

> . . . contemporary music of each new period gives that period a new point of view about the musical past . . . . Important new compositions not only affect how older ones are heard by the public, performers, composers, even critics, but also affect their interpretation and performance . . . . When the focus of 20th-century composition changed from neoclassicism to a great concern for structure—the Webern fragmentation of the Bach ricercare into tiny motives illustrates this clearly—the inner organization of Bach, Mozart, Beethoven and many others became a matter of greater concern than it had been and affected performers and, through them, listeners. For the musical works of the past cannot fail to be reheard and re-experienced in the light of present musical experience . . . .
>
> —Elliott Carter, from a letter to the *New York Times*, music page, Sunday, 20 October 1968.

> . . . It is a lack of seriousness to think of tradition as something that merely conserves. The first thing that happens is that performances become dusty and unimaginative. After our orchestra has been working on something very different and very new and very difficult—like Stockhausen, Ligeti, Kagel, Berio or my own music—then, we suddenly approach Beethoven's Fifth as though the ink were not yet dry . . . a quality suddenly comes into the Beethoven which, in a sense, shows up our own work . . . it [Beethoven's music] somehow turns out to be more modern than what any of us do today . . . .
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> Tradition is one of those misunderstood words. People keep thinking that it means the past. Tradition is actually a dynamic concept which moves from past to future. Without a preoccupation with the laboratory of the contemporary artist, you could not possibly get a real peek into the laboratory of a Beethoven, a Brahms, a Mozart, or a Bach . . . .
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> —Lukas Foss, excerpts from remarks on a panel discussion, reported in the *Newsletter* of the American Symphony Orchestra League, August-October 1968, p. 11.

5. Igor Stravinsky, *The Poetics of Music* (Cambridge, Mass.: Harvard University Press, 1947), ch. 3.

6. Contemporary writings on musical theory, whether dealing with new or with tonal music, show an increasing awareness both of the need for disciplined theoretical construction and the great problems of developing strict modes of examination in a field that has lacked such discipline in the past. Increasing attention is being devoted to the examination of theory itself, its properties, modes of construction, usefulness, and limitations. Understandably, scientific disciplines are being turned to for whatever assistance they may offer. The interested reader may find it worthwhile to pursue some of this literature.

Thomas Clifton, "Training in Music Theory: Process and Product," *Journal of Music Theory*, Spring 1969, pp. 38-63, examines many of the above points, drawing upon the philosophy of science and upon linguistics for models. Clifton's comments regarding the elementary stages of theory construction, the accompanying roles of feeling and perception, and the matter of detachment from observed phenomena (pp. 62-63) are relevant to the foregoing discussion of speculation.

Arthur Berger, "New Linguistic Modes and the New Theory," *Perspectives* 3, no. 1 (Fall-Winter 1964), especially pp. 6-9, draws upon linguistic concepts to make important distinctions in musical inquiry between theory and analysis, analysis and description, technique and structure, structure and form, form and conventional formula, form and style, concept and percept. Leonard Meyer is also concerned with these questions. In *Music, the Arts and Ideas* (Chicago: University of Chicago Press, 1967), ch. 11, he distinguishes between "perception" (the physiological reception of data through the senses) and "cognition" (the mental act of discerning patterns and relationships among perceived data). He notes that these two processes also interact.

See also Benjamin Boretz, "A Note on Discourse," *Perspectives* 4, no. 2 (1966): 76-80.

Boulez's comments on analytical method are also apposite:

> . . . let us define what may be considered the indispensable constituents of an 'active' analytical method: it must begin with the most minute and exact observation possible of the musical facts confronting us; it is then a question of finding a plan, a law of internal organization which takes account of these facts with the maximum coherence; finally comes the interpretation of the compositional laws deduced from this special application. All these stages are necessary; one's studies are of merely technical interest if they are not followed through to the highest point—the *interpretation* of the structure; only at this stage can one be sure that the work has been assimilated and understood.
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> —Pierre Boulez, *Boulez on Music Today* (London: Faber & Faber, 1971), p. 18.

7. Hugo Leichtentritt, *Musical Form* (Cambridge, Mass.: Harvard University Press, 1951).

8. Wallace Berry, *Form in Music* (Englewood Cliffs, N.J.: Prentice-Hall, 1966).

9. The introductory pages of Felix Salzer, "Tonality in Medieval Polyphony," *Music*

Forum 1 (1967): 35 ff., contain cogent comments on stylistic, historical, and purely "formal" (in the present sense) analysis, in particular on their value and shortcomings.

10. David Beach, "A Schenker Bibliography," *Journal of Music Theory* 13 (1969): 2-37, provides an extensive list of Schenker's writings, as well as articles about Schenker. Important among the latter for the reader seeking condensed information about Schenker's concepts is Allen Forte, "Schenker's Conception of Musical Structure," *Journal of Music Theory* 3, no. 1 (April 1959): 1-30. Felix Salzer, *Structural Hearing: Tonal Coherence in Music*, 2 vols. (New York: Charles Boni, 1952; Dover, 1962), is also a valuable organization of Schenker's ideas into textbook form. The book should not be considered, nor was it intended, as an authentic version of Schenker's thinking, for Salzer introduces in it ideas of his own and others adapted from Schenker. A helpful appraisal of this book is found in Milton Babbitt's review, *Journal of the American Musicological Society* 5, no. 3 (Fall 1952): 260-265. Other pertinent articles concerning Schenker are indicated in footnotes 20 and 21 of Beach's article (cited above), p. 35

11. Heinrich Schenker, *Harmony*, ed. and annotated by Oswald Jonas, tr. Elizabeth Mann Borghese (Chicago: University of Chicago Press, 1954), p. ix.

12. Cf. Forte, "Schenker's Conception," p. 26. Schenker's work reflects awareness of rhythm and its function in structure, though he did not develop these thoughts into a coherent theory. For him rhythm did not really exist in the fundamental structure (*Ursatz*), but it did manifest itself on middle- and foreground levels, emanating from counterpoint and making itself most felt in the activity of prolongation on these levels. Forte touches on this problem, pp. 20 ff. Grosvenor Cooper and Leonard Meyer, in their book *The Rhythmic Structure of Music* (Chicago: University of Chicago Press, 1960), somewhat apply Schenker's view of structural levels to the study of rhythm. The question is also discussed later in this book.

13. Jonas, ed., *Harmony* (Schenker).

14. Cf. Josef Rufer, *Composition with Twelve Notes Related Only to One Another*, tr. Humphrey Searle (London: Rockliff, 1954).

15. Although the four approaches to analysis discussed here are perhaps the most widely prevalent with respect to tonal music, it would be misleading to imply that they are the only ones, or even the only ones of value to analysis in general. As indicated in an earlier note (n. 6), contemporary analytical approaches have in part turned to various scientific disciplines, such as linguistics, for assistance in theory construction; some approaches have in fact modeled themselves upon such disciplines. Thus, the mathematical branch of set theory has been of both practical and conceptual significance in regard to aspects of serial thinking, particularly the more recent developments in total serialism. The writings of Milton Babbitt and David Lewin have been most notable contributions in this respect. Likewise physics, particularly the physics of electronics, has been essential to developments in the use of the electronic medium in composition. Numerous articles in *Die Reihe*, *Perspectives*, *The Electronic Music Review*, and other journals are exemplary.

Information theory, originally developed in the 1950s in connection with telecommunication, has also presented an attractive corollary to music. Leonard Meyer's book *Music, the Arts and Ideas* offers an extensive example of its use. Music is viewed here as taking place in a world of stylistic probability: the greater the probability, the greater the certainty of future events, and the less the "information" (in the technical meaning of the theory) communicated. The extreme of certainty, for example—tautology—would communicate no information. Deviations in the course of probable events create resistance to probabilities and thereby increase the amount of information, at the same time lowering the index of probability itself. Resistance is thus a correlative to information.

Deviation, in this system, gives rise to uncertainties both desirable and undesirable. Desirable uncertainty is that which arises as a result of the structured probabilities of a musical style. Information is a function of such uncertainty. Undesirable uncertainty arises when the probabilities are not known, due either to irrelevant habit responses in a listener with respect to a given style ("cultural noise") or to external interference ("acoustical noise") that obscures the structure of a given situation. A distinction is drawn between "art" music and "primitive" music (the latter term has precise referents in Meyer's thinking; it does not refer to the music of so-called primitive societies, but rather to music of low-level organization, such as much "pop" music or the music of Ethelbert Nevin) with respect to their speed of tendency gratification (quicker for primitive music). Such speed of gratification reduces uncertainty, which the (musically) immature primitive cannot tolerate.

After designating three aspects of musical enjoyment—the sensuous, the associative-characterizing, and the syntactical—Meyer establishes a relationship between the stimulus "input" and the actual informational "output" of a work. According to his "principle of psychic economy," we compare the ratio of musical means invested to the informational income yielded. "Good" works yield a high return: they are elegant in their use of information, economical in means.

This is but a partial summary of the fundamental information-theory thinking that forms the opening basis for Meyer's book, which subsequently extends these concepts in several directions.

All theoretical systems used for music and

their analytical counterparts must ultimately face the question of utility and the implied corollary question of paraphrase. The ultimate usefulness of any analytical system is its ability to be related in some precise fashion to musical materials themselves—pitch, rhythm, timbre, pulse, time.

Not all systems can deal with these musical materials directly, that is, within their own musical terminology or even their own musical concepts. Some may require translation into the musical domain. Information theory presents such a case. In these instances the question arises whether such a nonmusical system essentially constitutes paraphrase, or whether it enables one to organize and to view musical materials and relations on a higher level of abstraction. Paraphrase alone is of little value. If anything it adds the burden of translation into a musically indigenous frame. If the theory abstracts, however, its value is considerable, as it provides a more concise grasp of elements and interrelations.

16. Rudolph Reti. *The Thematic Process in Music.* Previously cited.
——. *Thematic Patterns in Sonatas of Beethoven.* Edited by Deryck Cooke. (London: Faber & Faber, 1967).

17. Hans Keller. "Strict Serial Technique in Classical Music." *Tempo,* Autumn 1955, 12-24.
——. "K. 503—The Unity of Contrasting Themes and Movements." Part I, *Music Review* 17 (1956): 48-58; Part II: 120-129.
——. "Functional Analysis: Its Pure Application." *Music Review* 18 (1957): 202-206.
——. "Knowing Things Backwards." *Tempo,* Winter 1958, pp. 14-20.
——. "The Chamber Music." Chapter in *The Mozart Companion.* Edited by H.C. Robbins. Landon and Donald Mitchell (London: Faber & Faber, 1965), pp. 90-137.

Keller in the late 1950s carried his work further, creating what he called "Wordless Functional Analysis." This took the form of broadcast tapes for the BBC in which the analytical examples, organized into hierarchies in a programed presentation, were played in the work's indigenous instrumentation (string quartet, orchestra, etc.), followed by a performance of the piece itself. The structural associations were thereby presented through music's proper medium of sound, avoiding the second-level removal from the work caused by words or even by notational graphs.

18. Alan Walker. A *Study in Musical Analysis.* (London: Barrie & Rockliff, 1962).
——. *An Anatomy of Musical Criticism.* (London: Barrie & Rockliff, 1966).

19. Rosen, *The Classical Style.*

20. "Premise" is used here in the sense of a basis, stated or assumed, upon which reasoning proceeds. This raises the question whether music is a system to which the term "logic" (of which premise is an element) can apply. The question is an entity unto itself, beyond the scope of this study. However, a case could be made that music is a form of logic, if logic is understood as a system of principles of reasoning applicable to any branch of knowledge or study. If this is so, it follows that there are a plurality of logical systems; also, that the components, terminology, procedures of reasoning of each individual system are likely to be *sui generis.*

21. Suzanne Langer, *Philosophy in a New Key* (New York: Mentor Books, 1951).
——. *Feeling and Form.* (New York: Scribner, 1953).

22. Leonard Meyer, *Emotion and Meaning in Music* (Chicago: University of Chicago Press, 1956).

23. Nelson Goodman, *Languages of Art: An Approach to a Theory of Symbols* (Indianapolis: Bobbs-Merrill Co., 1968).