

# Analysis.<sup>1</sup>

A general definition of the term as implied in common parlance might be: that part of the study of music that takes as its starting-point the music itself, rather than external factors. More formally, analysis may be said to include the interpretation of structures in music, together with their resolution into relatively simpler constituent elements, and the investigation of the relevant functions of those elements. In such a process the musical 'structure' may stand for part of a work, a work in its entirety, a group or even a repertory of works, in a written or oral tradition. The relationship between the structures and elements proposed by analysis, and experiential, generative and documentary perspectives on music, has circumscribed analysis differently from time to time and from place to place, and has aroused debate. Less controversially, a practical distinction is often drawn between formal analysis and stylistic analysis; but this is unnecessary insofar as on the one hand any musical complex, no matter how small or large, may be deemed a 'style'; and on the other hand, all the comparative processes that characterize stylistic analysis are inherent in the basic analytical activity of resolving structures into elements.

[I. General](#)

[II. History](#)

[BIBLIOGRAPHY](#)

IAN D. BENT/ANTHONY POPLÉ

I. General

## 1. The place of analysis in the study of music.

The phrase 'musical analysis', taken in a general sense, embraces a large number of diverse activities. Some of these are mutually exclusive: they represent fundamentally different views of the nature of music, music's role in human life, and the role of the human intellect with regard to music. These differences of view render the field of analysis difficult to define within its own boundaries. (Such a definition will be the concern of §§2 and 3 below.) Underlying all aspects of analysis as an activity is the fundamental point of contact between mind and musical sound, namely musical perception (*see* [Psychology of music, §III](#)).

More difficult, in some ways, is to define where precisely analysis lies within the study of music. The concerns of analysis as a whole can be said to have much in common on the one hand with those of musical aesthetics and on the other with those of compositional theory. The three regions of study might be thought of as occupying positions along an axis that has at one extreme the placing of music within philosophical schemes and at the other the giving of technical instruction in the craft of composition. There are complicating factors, however, concerning theory and criticism. Music theories have been developed that find their practical expression not in composition but in analysis; from the obverse point of view one might say that such theories derive stable concepts by abstraction from the data that analysis provides. The relationship is thus one of mutual dependency. A similarly mutual though less dependent relationship might be thought to exist in principle between analysis and criticism. Many writings that are intended primarily as criticism and lie within

---

<sup>1</sup> BENT, Ian D & POPLÉ, Anthony. Analysis. *Grove Music Online*. Ed. L. Macy (Accessed 14 August 2005), <http://www.grovemusic.com> . Trata-se do Grove 2001.

its traditions are recognizably analytical in their concern with the direct description and investigation of musical detail. Conversely, analytical writing expresses a critical position, albeit sometimes merely by implication, but often in a sophisticated manner through the multiple connotations of the theories it applies and the comparisons it draws. Even a wordless analysis – which would seem the least capable of doing so – passes a value judgment in asserting that its musical subject is worthy of study and explication.

The analyst and the theorist of musical composition (*Satztechnik*; *Kompositionslehre*) have a common interest in the laws of musical construction. Many would deny a separation of any kind and would argue that analysis is a subgroup of musical theory. But that is an attitude that springs from particular social and educational conditions. While important contributions have been made to analysis by teachers of composition, others have been made by performers, instrumental teachers, critics and historians. Analysis may serve as a tool for teaching, though it may in that case instruct the performer or the listener at least as often as the composer; but it may equally well be a private activity – a procedure for discovering. Musical analysis is no more implicitly a part of pedagogical theory than is chemical analysis; nor is it implicitly a part of the acquisition of compositional techniques. On the contrary, statements by theorists of compositional technique can form primary material for the analyst's investigations by providing criteria against which relevant music may be examined.

Of greater significance is the fact that analytical procedures can be applied to styles of performance and interpretation as well as to those of composition. But the point at which composition ceases and interpretation begins is rarely incisive. Most Western analysis takes a score as its subject matter and implicitly assumes it to be a finalized presentation of musical ideas. If it is true that the notated form in which a medieval, Renaissance or Baroque work survives is an incomplete record, it is even more to the point that for the analyst of ethnomusicological material, jazz improvisation or popular music recorded on tape, vinyl or CD, a score is only an intermediary artefact which in no way marks off 'composer' from 'performer'. It provides a coarse communication of a recorded performance, much of which will have to be analysed by ear or with electronic measuring equipment. Similar considerations apply to the analysis of performing practice in Western music, though here the written score may be used as a constant point of reference in measuring and comparing different realizations of it in performance.

Briefly, then, analysis is concerned with musical structures, however they arise and are recorded, not merely with composition. Moreover, within the subject matter that analysis and compositional theory have in common, the former is by definition concerned with resolution and explanation, so that its reverse procedure – synthesis – is no more than a means of verification; the latter is concerned directly with the generation of music, and analytical method is only a means of discovery. The fields overlap but with essential differences of subject, of aim and of method.

Similarly, the analyst, like the aesthetician, is in part concerned with the nature of the musical work: with what it is, or embodies, or signifies; with how it has come to be; with its effects or implications; with its relevance to, or value for, its recipients. Where they differ is in the centres of gravity of their studies: the analyst focusses his attention on a musical structure (whether a chord, a phrase, a work, the output of a composer or court etc.), and seeks to define its constituent elements and explain how they operate; but the aesthetician focusses on the nature of music *per se* and its place among the arts, in life and reality. That the two supply information to each other is undoubted: the analyst provides a fund of material which the aesthetician may adduce as evidence in forming his conclusions, and the analyst's definition of the specific furnishes a continual monitoring service for the aesthetician's definition of the general; conversely, the aesthetician's insights provide

problems for the analyst to solve, condition his approach and method, and ultimately furnish the means of exposing his hidden assumptions. Their activities may overlap so that they often find themselves doing similar things. Nonetheless, they have two essential differences, which may be characterized in terms of the relative importance of empiricism and reflection: analysis tends to supply evidence in answer to the empirical questions of aesthetics, and may be content to explore the place of a musical structure within the totality of musical structures, whereas the aesthetician's concern is with the place of musical structures within the system of reality. (For further discussion, see [Philosophy of music](#).)

Criticism is inseparable on the one hand from aesthetics and on the other from analysis. Within criticism there has been constant debate as to the extent to which it is a descriptive or a judicial activity. The 'descriptive' critic tries to do either or both of two things: to portray in words his own inner response – to depict his responding feelings – to a piece of music or a performance, or to think his way into the composer's or performer's mind and expound the vision that he then perceives. The 'judicial' critic evaluates what he experiences by certain standards. These standards may at one extreme be dogmatic canons of beauty, of truth or of taste – pre-set values against which everything is tested; or, at the other extreme, values that form during the experience, governed by an underlying belief that a composer or performer must do whatever he is attempting to do in the clearest and most effective way. In none of the above does criticism differ categorically from analysis: there is also a latent debate within analysis as to whether the analyst's function is descriptive or judicial.

There is perhaps a difference of degree. In general, analysis is more concerned with describing than with judging. In this sense, analysis goes less far than criticism, and it does so essentially because it aspires to objectivity and considers judgment to be subjective. But this in turn suggests the other difference between analysis and criticism, namely that the latter stresses the intuitive response of the critic, relies upon his wealth of experience, uses his ability to relate present response to prior experience, and takes these two things as data and method, whereas analysis tends to use as its data definable elements: phrase-units, harmonies, dynamic levels, measured time, bowings and tonguings, and other technical phenomena. Again this is a difference only of degree: a critic's response is often highly informed and made in the light of technical knowledge; and the analyst's definable elements (a phrase, a motif etc.) are often defined by subjective conditions. Where subjectivities are acknowledged to be inevitable, the analytical mind will tend not to work with them directly, but to investigate their nature in relation to definable musical phenomena, thus drawing closer to aesthetics in general and to semiology in particular. To say that analysis consists of technical operations and criticism of human responses is thus an oversimplification, though it helps to contrast the general characters of the two. (See also [Criticism, §I](#).)

A rather different relationship exists between musical analysis and music history. To the historian, analysis may appear as a tool for historical inquiry. He uses it to detect relationships between 'styles', and thus to establish chains of causality that operate along the dimension of time and are anchored in time by verifiable factual information. He may, for example, observe features in common between the styles of two composers (or groups of composers) and inquire by internal analytical methods and external factual ones whether this represents an influence of one upon the other; or, in reverse order, seek common features of style when he knows of factual links. Conversely, he may detect features out of common between pieces normally associated for one reason or another, and proceed to distinguish by comparative analysis distinct traditions or categories. Again, he may use an analytical classification of features as a means of establishing a chronology of events.

In turn, the analyst may view historical method as a tool for analytical inquiry. His subject matter is rather like sections cut through history. When under analysis they are timeless, or 'synchronic'; they embody internal relationships that the analyst seeks to uncover. But factual information, concerning events in time, may, for example, determine which of several possible structures is the most likely, or explain causally the presence of some element that is incongruous in analytical terms.

Comparative analysis of two or more separate phenomena (whether separated chronologically, geographically, socially or intellectually) only really activates the dimension of time – becoming 'diachronic' – when historical information relating the phenomena is correlated with the analytical findings. Historical and analytical inquiry are thus mutually dependent, with common subject matter and complementary methods of working. (For further discussion see [Historiography](#) and [Musicology, §§I and II, 8.](#))

## **2. The nature of musical analysis.**

The primary impulse of analysis is an empirical one: to get to grips with something on its own terms rather than in terms of other things. Its starting-point is a phenomenon itself rather than external factors (such as biographical facts, political events, social conditions, educational methods and all the other factors that make up the environment of that phenomenon). But like all artistic media, music presents a problem, inherent in the nature of its material. Music is not tangible and measurable as is a liquid or a solid for chemical analysis. The subject of a musical analysis has to be determined; whether it is the score itself, or at least the sound-image that the score projects; or the sound-image in the composer's mind at the moment of composition; or an interpretative performance; or the listener's temporal experience of a performance. All these categories are possible subjects for analysis. There is no agreement among analysts that one is more 'correct' than others, only that the score (when available) provides a reference point from which the analyst reaches out towards one sound-image or another.

Analysis is the means of answering directly the question 'How does it work?'. Its central activity is comparison. By comparison it determines the structural elements and discovers the functions of those elements. Comparison is common to all kinds of musical analysis – feature analysis, formal analysis, functional analysis, Schenkerian analysis, pitch-class set analysis, style analysis and so on: comparison of unit with unit, whether within a single work, or between two works, or between the work and an abstract 'model' such as sonata form or arch form. The central analytical act is thus the test for identity. And out of this arises the measurement of amount of difference, or degree of similarity. These two operations serve together to illuminate the three fundamental form-building processes: recurrence, contrast and variation.

This is a highly 'purified' portrayal of analysis, impartial, objective, yielding the answer 'It works this way ...' rather than 'It works well' or 'It works badly'. In reality the analyst works with the preconceptions of his culture, age and personality. Thus the preoccupation which the 19th century had with the nature of 'genius' led to the phrasing of the initial question not as 'How does it work?' but as 'What makes this great?', and this remained the initial question for some analytical traditions in the 20th century. Since the 'scientific', comparative method was predominant over evaluation in such traditions, and since only works of genius possessed the quality of structural coherence, it followed that comparison of a work with an idealized model of structure or process produced a measure of its greatness.

This is only one example of many. The history of musical analysis in §II below inevitably recounts the application of intellectual outlooks from successive ages to musical material: the principles of rhetoric, the concepts of organism and evolution, the subconscious mind, monism, probability

theory, structuralism, post-structuralism and so forth. Ultimately, the very existence of an observer – the analyst – pre-empts the possibility of total objectivity. No single method or approach reveals the truth about music above all others.

### 3. The role of method in musical analysis.

Many of the classifications that have been formulated for musical analysis have distinguished between types of analytic practice according to the methods used, which can then be grouped together into broader categories. For example, there is the widely accepted division into ‘stylistic analysis’ and ‘analysis of the individual work’ which was described above as pragmatic but theoretically unnecessary. There is the threefold classification into ‘constructional analysis’, ‘psychological analysis’ and ‘analysis of expression’ put forward by Erpf in *MGGI* (1949–51). This classification does not correspond exactly with, but is roughly equivalent to, Meyer’s distinction (1967, pp.42ff) between ‘formal’, ‘kinetic-syntactic’ and ‘referential’ views of musical signification. Dahlhaus (*RiemannLI2*, 1967) made a fourfold distinction: ‘formal analysis’, which explains the structure of a work ‘in terms of functions and relationships between sections and elements’; “energetic” interpretation’, which deals in phases of movement or tension spans; and Gestalt analysis, which treats works as wholes; these three make up among them the field of analysis proper, which he distinguished from his fourth category, ‘hermeneutics’, the interpretation of music in terms of emotional states or external meanings. The first, second and fourth of these correspond broadly with the three categories of Erpf and Meyer, while the third deals with analyses based on the idea of organism.

The principal difficulty with these classifications is that their categories are not mutually exclusive. Thus, for example, Riemann is generally cited as the prime example of a formal and constructional analyst, and yet his work rests on a fundamental idea of ‘life force’ (*Lebenskraft*, *lebendige Kraft*, *energisches Anstreben*) that flows through music in phases and is actualized in phrase contours, dynamic gradings, fluctuations of tempo and agogic stress. This idea is closer to the kinetic view of music; it suggests that Riemann’s work belongs to two of Meyer’s three categories.

A different way of identifying analytical methods is partly historical in nature. For example, Schenkerian analysis, so called, has its origins in the work of Heinrich Schenker (1868–1935); but, as a label that identifies a type of analytical practice today, ‘Schenkerian analysis’ includes a number of developments that have accrued since Schenker’s death and are due to his pupils, his pupils’ pupils and others (see §II, 5–6). This ‘method’ is circumscribable because, seen as a tradition communicated orally by teaching and also through a modest number of written sources, it remains reasonably concise. The status of motivic analysis as an identifiable complex of methods is less easy to describe: naturally, it has a history (see §II, 3–5), but the accumulation of developments has been such that some filtering out has also taken place; significantly different synoptic descriptions of motivic analysis as practised today are thus possible. In the case of harmonic analysis, the range of meanings is such that no contemporary synoptic description of it as a ‘method’ can properly be offered: only its history retains a degree of integrity.

A good example of the emergence of a method by accumulation and selective filtering is seen in the analysis of form, which Cook (*Guide*, 1987) explicitly included in a category of ‘traditional’ methods. Broadly speaking, one may describe formal analysis historically, identifying principles and refinements as they were newly introduced; and one may present an overview of what is meant by formal analysis today. Neither of these approaches alone, however, can fully reflect the fact that formal analysis has a two-dimensional history of changing accumulations: that the difference between formal analysis around 2000 and formal analysis around 1900, for example, cannot be

measured solely in terms of the new ideas that have been added in the intervening century. But it can be traced in the differences between attempts by responsible authors to provide synoptic definitions at various times and places.

The history of formal analysis tells us that during the late 18th century and the 19th, music theorists defined certain structural patterns – not genres or species such as concerto or minuet, but more widely applicable processes of formal construction common to many genres and species – that were reducible to two fundamental patterns: *AB* and *ABA*. These were subsumed in German terminology under the single term *Liedform* (first proposed by A.B. Marx, 1837–47) in its ‘two-part’ (*zweiteiliges*) and ‘three-part’ (*dreiteiliges*) form, and distinguished in English terminology as [Binary form](#) and [Ternary form](#). Broadly speaking, these terms referred to small-scale forms; they applied most directly to instrumental dance movements of the 17th and 18th centuries, and relied on the concept of regular phrase structure with the eight-bar period as the principal unit of construction. Later in the history of formal analysis, large-scale formal models came to be regarded as extensions to one or other of the two fundamental patterns: thus [Sonata form](#) was the extension of the binary pattern, and [Rondo](#) of the ternary.

An overview of what is meant by formal analysis might begin with the three basic form-building processes proposed in §2 above: ‘recurrence’, ‘contrast’ and ‘variation’, expressible as *AA*, *AB* and *AA'*. It might further identify a distinction between two basic processes of extension: that of a succession of formal units, and that of development. The former (in German, *Reihungsform* or *plastische Form*) relies on proportion and symmetry, and is architectural in nature; the latter (*Entwicklungsform* or *logische Form*) relies on continuity and growth. The rondo, *ABACADA*, extends ternary form by succession; sonata form extends binary form by development. And the two processes are both brought into operation in the so-called sonata rondo: *ABACAB'A*. There is a further process by which larger forms may be created out of one of the two basic patterns: by the operation of one or both patterns at more than one level of structure (*Potenzierung*, ‘exponentiating’). By this means, such structures as *A (aba)B (cdc)A (aba)* are produced. Related to this is the concept of [Cyclic form](#), whereby movements in recognizable forms are grouped together to form larger units such as the suite and the sonata.

Many manuals of form have separate descriptions of ‘the contrapuntal forms’ and allow a category of ‘free forms’. Nonetheless, the underlying idea of formal analysis is that of the ‘model’, against which all compositions are set and compared and measured in terms of their conformity to or ‘deviation’ from the norm. But if formal analysis may be distinguished from other kinds of analysis by its concern with the recognition of these processes and the description of works in terms of them, manuals of formal analysis vary in the ways in which they see the totality of musical formations, from the Middle Ages onwards and for all vocal and instrumental media, as governed by these fundamental patterns. Quite apart from the universality of the basic models, there are many difficulties in determining criteria for their recognition. For some analysts, identity or non-identity is determined by thematic character; for others, by key scheme; for others, by length of units. Thus, for Dahlhaus (*Riemann LI2*, 1967), the prime conditions of the two-part *Liedform* |:A:|:B:| are, first, that the first part ends on a half-close in the tonic or a full-close in a related key, and, second, that the parts are melodically different (or related |:AX:|:AY:| or |:AX:|:BX:|). For Scholes (*Oxford Companion to Music*, ‘Form’) binary form rests on the same key scheme |:tonic–dominant (or relative major):|:dominant (or relative major)–tonic:|, and the absence of ‘strong contrast’ in thematic material. For Prout (1893–7, 1895), key scheme is not really a determinant at all for binary form, for he allowed |:tonic–tonic:|:remote key–tonic:|; nor is thematic relationship, for he allowed *AA'BA''* as well as *ABCB*. The basic determinant for Prout was that the form should constitute ‘two

complete sentences'. Thus the form |:A:||BA:|, which for Dahlhaus was three-part *Liedform*, was for Prout binary form unless the first part is itself a complete binary form, self-contained and rounded.

The question might be asked whether analysis as a whole can be described by listing and describing its methods – using this word in the sense explored above. Handbooks of analysis written largely for pedagogical purposes (e.g. Cook, 1987; Dunsby and Whittall, 1988) have adopted this approach virtually out of necessity. Such texts appeared at a time when analysis had emerged for the first time in the English-speaking world as a complex academic discipline in its own right, rather than as an adjunct, however valuable or essential, to other forms of musical activity or training. This moment in the history of analysis was brief, however – perhaps inevitably so, as the high profile of analysis encouraged the questioning of its assumptions and practices (see §II, 6). Arguably, those related disciplines from which this questioning emerged – notably criticism – have in the aftermath taken on many of the lasting priorities and occupations of analysis, themselves becoming significantly changed in the process. Conversely, analysis remains strong, but has revitalized its concerns through closer contact with disciplines that always left more room for debate about the nature and function of music than analysis had come to do.

It follows from all this that a thorough-going typology of musical analysis, widely applicable across times and places, would probably have to encompass several axes of classification. The analyst's view of the nature and function of music would certainly be one of these. But his approach to the actual substance of music would be a second; his method of operating on the music would be a third; and the medium for presentation of his findings would be a fourth. Other axes might be concerned with, for example, the purpose for which the analysis was carried out, the context in which it was presented, the type of recipient for which it was designed.

Under approaches to the substance of music would be categories such as that a piece of music is (a) a 'structure', a closed network of relationships, more than the sum of its parts; (b) a concatenation of structural units; (c) a field of data in which patterns may be sought; (d) a linear process; and (e) a string of symbols or emotional values. These five categories embrace the approaches of formal analysts such as Leichtentritt and Tovey, structuralists and semiologists, Schenker, Kurth and Westphal, Riemann, hermeneutics, stylistic analysis and computational analysis, information theory analysis, proportion theory, R  ti and functional analysis, and much else. The categories are still not exclusive. For example, (a) and (c) are not wholly incompatible in that approach (c) may lead to approach (a). Then again, two approaches may co-exist at two different levels of construction: perhaps (a) or (b) for large-scale form and (d) for small-scale thematic development.

Under methods of operating would be categories such as (a) reduction technique; (b) comparison, and recognition of identity, similarity, or common property; (c) segmentation into structural units; (d) search for rules of syntax; (e) counting of features; and (f) reading-off and interpretation of expressive elements, imagery, symbolism.

Under media of presentation would be categories such as (a) annotated score or reduction or continuity line (see fig.12); (b) 'exploded' score, bringing related elements together (fig.28); (c) list, or 'lexicon' of musical units, probably accompanied by some kind of 'syntax' describing their deployment (see figs.23); (d) reduction graph, showing up hidden structural relationships (figs.17–20); (e) verbal description, using strict formal terminology, imaginative poetic metaphor, suggested programme or symbolic interpretation; (f) formulaic restatement of structure in terms of letter- and number-symbols; (g) graphic display: contour shapes (fig.22), diagrams (fig.16), graphs (fig.15), visual symbols for specific musical elements (fig.14); (h) statistical tables or graphs; and (i)

sounding score, on tape or disc, or for live performance. Such media can be used together within an analysis, and elements of two or more can be combined.

## II. History

### 1. Early history (to 1750).

Analysis, as a pursuit in its own right, came to be established only in the late 19th century; its emergence as an approach and method can be traced back to the 1750s. However, it existed as a scholarly tool, albeit an auxiliary one, from the Middle Ages onwards. The precursors of modern analysis can be seen within at least two branches of musical theory: the study of modal systems, and the theory of musical rhetoric. Where, in either of these branches, a theorist cited a piece of music as illustrating a point of technique or structure, only a small amount of discussion was necessary before he was using what would now be called the analytical approach.

In a sense, the classificatory work carried out by the Carolingian clergy in compiling tonaries was analytical: it involved determining the mode of every antiphon in a repertory of chant, and then subclassifying the modal groups according to their variable endings ('psalm tone differences': see [Tonary](#)). Such theorists as Wilhelm of Hirsau, Hermannus Contractus and Johannes Cotto in the 11th century cited antiphons with brief modal discussion, as did later theorists such as Marchetto da Padova and Gaffurius. Their discussions were essentially analysis in the service of performance. Renaissance theorists such as Pietro Aaron and Heinrich Glarean discussed the modality of polyphonic compositions by Josquin. (For examples see [Mode, §§II, 2–4; III, 3, 4.](#))

Such citations of individual works were all concerned with matters of technique and substance. It was only with the development of musical rhetoric that the idea of 'form' entered musical theory. The literature of ancient classical Greek and Roman rhetoric was rediscovered with the finding of Quintilian's *Institutio oratoria* in 1416. But the application of the ideas of classical oratory has been traced back as far as the Notre Dame polyphony of the early 13th century, and its direct impact is clear in late 15th-century music. It was with Listenius (*Musica*, 1537; Eng. trans., 1975) that *musica poetica* – musical rhetoric – was introduced into musical theory. Dressler (1563) alluded to a formal organization of music that would adopt the divisions of an oration into *exordium* ('opening'), *medium* and *finis*. Pietro Pontio (1588) discussed the standards for composing motets, masses, madrigals, psalms and other genres, and similar discussions occur in Cerone (1613), Praetorius (1618), Mattheson (1739) and Scheibe (1738–40).

A plan similar to Dressler's appeared in Burmeister (1606). Burmeister had already proposed (1599, 1601) that musical 'figures' could be treated as analogous to rhetorical figures, and it was he who first set out a full formal analysis of a piece of music. It was Burmeister, too, who gave the first definition of analysis (1606, pp.71ff):

Analysis of a composition is the resolution of that composition into a particular mode and a particular species of counterpoint [*antiphonorum genus*], and into its affections or periods. ... Analysis consists of five parts: 1. Determination of mode; 2. of species of tonality; 3. of counterpoint; 4. Consideration of quality; 5. Resolution of the composition into affections or periods.

He then discussed each of the parts of analysis in detail, and followed this by his analysis of Lassus's five-voice motet *In me transierunt*. He defined the mode as authentic Phrygian, and discussed the total range of the piece and the individual vocal ranges. He defined the tonality as

‘diatonic’, the species of counterpoint as ‘broken’ (*fractum*), the quality as *diazeugmenorum*. Burmeister then proceeded to the fifth stage (pp.73ff):

Furthermore, the work can be divided up very comfortably into nine periods, of which Period 1 comprises the *Exordium*, which is elaborated with two kinds of ornament: *fuga realis* [regular imitation] and *hypallage* [imitation by contrary motion]. The seven middle periods are the *Corpus* of the work, just like the *Confirmatio* in oratory (if comparison be allowed with a kindred art). Of these, the first [Period 2] is ornamented with *hypotyposis* [word-painting], *climax* [repetition of a figure one step higher or lower] and *anadiplosis* [homophonic passages in multiple restatements at different pitches]. The second [Period 3] is ornamented in like manner, but has *anaphora* [pseudo-imitation of a figure, but not in all the voices] added to it. The third [Period 4] has *hypotyposis* and *mimesis* [homophonic phrases from different sub-choruses, answering each other at higher or lower pitches]. The fourth [Period 5] divides into two sub-choruses, and has *pathopoeia* [a semitone chromatic step expressive of sadness (on the words ‘dolor meus’ in Tenor I and Bassus)]. The fifth [Period 6] has *fuga realis*, the sixth [Period 7] *anadiplosis* and *noemate* [homophonic passages], the seventh [Period 8] *noemate* and *mimesis*. Period 9, the final one, is like the Epilogue in oratory. The piece ends with a principal cadence [with Tenor I falling to *E* and the Altus ascending to the octave above it].

Passages from this motet are cited elsewhere in Burmeister’s treatise to illustrate rhetorical devices, thus giving a very full exegesis of the work. Fig.1 shows his analysis applied to Period 4.

Lippius (1612) discussed rhetoric as the basis of the *forma*, or structure of a composition. Throughout the Renaissance and Baroque periods the principles of rhetoric were prescriptive: they provided routine techniques for the process of composition rather than descriptive techniques for analysis. But they played an important part in the growing awareness of formal structure during these periods, and in particular of the function of contrast and the links between contrasted sections, out of which the analytical faculty was eventually to develop. Mattheson (1739) enumerated six parts to a well-developed composition such as an aria (p.236):

*Exordium*, the introduction and beginning of a melody, in which its purpose and entire intention must be shown, so that the listener is prepared and his attention is aroused. ...

*Narratio* is a report or a narration in which the meaning and nature of the discourse is [are] suggested. It is found immediately at the entrance of the voice – or the most important concerted [instrumental] part, and is related to the *Exordium* ... by means of a suitable association [with the musical idea found in the *Exordium*].

*Propositio* briefly contains the meaning and purpose of the musical speech, and is simple or compound ... Such propositions have their place immediately after the first phrase of melody, when actually the bass takes the lead and presents the material both briefly and simply. Then the voice begins its *propositio variata*, joins with the bass, and thus creates a compound proposition.

*Confirmatio* is the artistic strengthening of the proposition and is usually found in melodies by imaginative and unexpected repetitions, by which is not to be understood the normal Reprise. What we mean here are agreeable vocal passages repeated several times with all kinds of nice changes of decorated additions.

*Confutatio* is the resolution of objections [i.e. contrasted or opposing musical ideas]. In melody it may be expressed either by tied notes or by the introduction and rejection of passages which appear strange.

*Peroratio*, finally, is the end or conclusion of our musical oration, and must above all else be especially expressive. And this is not found just in the outcome or continuation of the melody itself, but particularly in the postlude, be it either for the bass line or for a strong accompaniment; whether or not one has heard the Ritornello before. It is customary that the aria concludes with the same material as it began; so that our *Exordium* also serves as a *Peroratio*.

Mattheson then went on to apply this sectionalization to an aria by Marcello, complete with discussion and musical examples (pp.237ff), introducing other technical terms as he did so. ([See Rhetoric and music, §II.](#))

So far this discussion has been occupied with principal developments up to 1750 in the analysis of structural organization. However, if a full appreciation is to be gained of the groundwork of analytical theory, then three other traditions of musical theory must be touched upon at this point:

the art of embellishment, the technique of figured bass and the theory of harmony. None of these is itself centred on analysis, but each bears on it.

The tradition of embellishment manuals, stretching from Ganassi (*Fontegara*, 1535) to Virgiliano (*Il dolcimelo*, c1600) and then on to the 17th-century vocal and instrumental tutors, was primarily concerned with teaching graces and *passaggi* to performers. This was done by means of tables of ornaments, extended practical examples and formulated rules. In these manuals is established the fundamental concept of ‘diminution’. This concept has two aspects: (1) the subdivision of a few long note values into many shorter values; and (2) the application to an ‘essential’ melodic line of a layer of less essential linear material. In both aspects a hierarchy is created, and in both the possibility exists of the hierarchy becoming multi-layered as an already embellished line is subjected to further embellishment. On the face of it this was a quest for the purely transient affair of the virtuoso performer. In reality much 16th-century music contained elements of embellishment as it was written down; and the modern style of 17th-century *seconda pratica* subsumed ornamentation within its notated exterior. The compositional notion of inventing (or adopting) a basic structure and then elaborating it, which goes back at least to the 9th century and was developed as *contrapunctus diminutus* by 14th-century theorists, was crystallized in this instructional tradition and was absorbed deep into European musical consciousness. Nowhere was this truer than in the *stile antico* lineage, which led from Diruta (*Il primo libro*, 1580) through Berardi (*Ragionamenti musicali*, 1681; *Miscellanea musicale*, 1689) and Fux (*Gradus ad Parnassum*, 1725) right into the heart of the 19th century. It should not be forgotten that Beethoven was steeped in this tradition and to the end of his life remained profoundly influenced by his lessons from Albrechtsberger. This tradition was to be of incalculable importance to the theories of Heinrich Schenker at the beginning of the 20th century.

The teaching of figured bass was similarly performer-orientated. The line of treatises stretched from Agazzari (*Del sonare sopra'l basso*, 1607) into the 18th century. It tended to foster the concept on which it was founded: that of the chord as an indivisible unit. It evolved a new categorization of consonance and dissonance which, like the concept of diminution, was absorbed profoundly into the mainstream of musical thought. However, it masked the concept of ‘root’ by concentrating on the actual bass line.

Unquestionably the most influential music theorist of the 18th century was Rameau. Rameau was not himself concerned with analysis of form and large-scale structure. His theory of harmony nonetheless had latent significance for future analysts. Rameau ‘conceptualized those principles of tonality which were so thoroughly revolutionizing harmony in the early eighteenth century’ (Gossett, ed. and trans.: Rameau: *Traité*, 1971, p.xxi). He asserted the primacy of harmony over melody. At the heart of his theory are the three ‘primary consonances’, the octave, 5th and major 3rd, and the fact that they are contained within and generated by the single note. (This he saw first through mathematical subdivision of string lengths, as had Zarlino before him, and later through the observed overtone structure of a sounding body, or *corps sonore*.) He saw the octave as the ‘replica’ (*réplique*) of its source (ibid., 8). From these observations he posited the notion of transposing the natural order of sounds in a harmony, thus isolating the principle of ‘inversion’ (*renversement*): ‘inversion is basic to all the diversity possible in harmony’ (ibid., 13). The principle of ‘implication’ (*sous-entendre*) allows that sounds may be heard in a chord while not existing in their own right. Inversion, replication and implication together yield the notion of ‘root’ (a concept which had already been grasped by Lippius, 1612, and Baryphonus, *Pleiades musicae*, 1615, 2/1630) and thus also the series of such roots, some present and some implied, that underlies a harmonic progression containing inverted chords. This series of notes Rameau termed ‘fundamental bass’ (*basse fondamentale*).

What did this theory have to offer to analysis? First, it offered explanations for chordal structures, consonant and dissonant, thereby providing tools for chordal analysis. Second, it presented a highly centralized view of tonality, comprising a very few elements which could occur in a rich variety of ways. Together with the rules for the operation of ‘fundamental bass’, this paved the way for a reductionist approach to musical structure. Finally, by giving acoustical primacy to the major triad it offered the prospect of scientific verifiability to analytical systems.

Rameau’s exact contemporary J.D. Heinichen was almost as prophetic in certain respects. His *Der General-Bass in der Composition* (1728) was written towards the end of the figured-bass tradition and brought that tradition into contact with the theory of composition. Heinichen came close to formulating a theory of chord-progression. Of particular interest to the analyst is his notion of ‘fundamental roles’ (*Fundamentalnoten*), by which he denoted the principal notes in a melody line after inessential notes have been stripped away.

## 2. 1750–1840.

The origins of musical analysis as one now thinks of it lie in early 18th-century philosophy and are linked with the origins of the aesthetic attitude itself. For it was in the 18th century, and particularly with the English philosophers and essayists, that the idea came to the surface of contemplating beauty without self-interest – that is, without motive of personal improvement or utility. This new attitude was termed, by one of its earliest protagonists, Lord Shaftesbury (1671–1713), ‘disinterested attention’. It embodied a mode of interest that went no further than the object being contemplated, and was engrossed in the contemplation itself. Leibniz, at about the same time, evolved a concept of perception as an activity in itself rather than as a processing of sense-impressions. This active concept of perception was important in the work of Alexander Baumgarten (1714–62), who coined the word ‘aesthetics’. It was during this period that the notion of ‘fine art’ as such, divorced from context and social function, arose.

In Shaftesbury’s equation of disinterested attention with ‘love of truth, proportion, order and symmetry in things without’ lies the germ of formal theory as it was developed in Germany during the second half of the 18th century. His declaration that ‘*the Beautiful, the Fair, the Comely*, were never in the *Matter*, but in the *Art and Design*; never in the *Body* itself, but in the *Form* or *forming Power*’ (*Characteristicks of Men, Manners, Opinions, Times*, 1711, ii, 405) drew attention to the outward form as the object of contemplation rather than content. Such an attitude came through in, for example, *Der allezeit fertige Polonoisen- und Menuettencomponist* (1757) by J.P. Kirnberger, one of a number of publications that laid down a fixed chord scheme for dances, and supplied several motifs for each bar from which one was to be selected by throwing a dice.

However, it was not in the field of analysis or of criticism, as one might expect, that these perceptually based ideas were fully articulated in music for the first time. It was in composition teaching: in particular in the writings of the theorist H.C. Koch. The most significant aspects of Koch’s important work *Versuch einer Anleitung zur Composition* (1782–93) were the twin subjects of phrase structure and formal model. Koch’s principle of phrase extension had its forerunner in the *Anfangsgründe zur musicalischen Setzkunst* (1752–68) of Joseph Riepel. In his second chapter (Frankfurt, 1755) Riepel discussed the construction of eight-bar phrases in two four-bar units, designating each according to its type of cadence as *Grundabsatz*, *Aenderungsabsatz* or *Aenderungscadenz* (pp.36ff). He went on (pp.54ff) to discuss repetition and phrase extension (*Ausdähmung*) and interpolation (*Einschiebsel*). Riepel used graphic signs – the square, crosses and letters – to designate constructional devices. In his fourth chapter (Augsburg, 1765) Riepel considered melodic ‘figures’ (*Figuren*) not in the rhetorical Baroque sense but as units of formal

construction. He presented the first five bars of an aria, marking the four musical figures by brackets and numbers ([fig.2a](#)). He then took no.1 and showed how it might be repeated sequentially at the interval of a 3rd (marking the repetition with a double cross; [fig.2b](#)), then at the 2nd and the 5th. He then worked a sequential extension of no.2 which continued with no.4 ([fig.2c](#)), and so on (pp.81ff). The examples were still very much in the style of Baroque melodic construction, but Koch described Riepel's work as 'the first ray of light' (ii, 11).

There is evidence that Kirnberger too was influenced by Riepel in his writings. In *Die Kunst des reinen Satzes in der Musik* (ii/1, 1776), he employed a range of terminology for melodic structures that provides a halfway-point between Riepel and Koch. Each large-scale section of a piece, called *Haupttheil*, was subdivided into several units, each called *Periode* or *Abschnitt*. They were themselves subdivided into several units, each known as *Satz* or *Rhythmus*. They in turn were subdivided into the smallest unit of all, each known as *Cäsur* or *Slied*. The term *Einschnitt* equated sometimes with *Satz*, sometimes with *Cäsur*. Kirnberger offered rules (ii/1, 140–51; also briefly i, 1771, p.96; Eng. trans., 407–16, 114) on the construction of all these units, especially as to their length, rhythmic patterning and cadence-forms. In stating that the number of bars constituting a *Satz* should normally be a multiple of four, or at least of two, he made special allowance for interpolation. A one-bar unit, a repetition of the previous bar, could be inserted (ii/2, 143; Eng. trans., 409) without disturbing the feel of the unit. Moreover, the *Satz* could be extended by the elongation of the value of one or more of its main notes. This might result in five-, seven- or nine-bar *Sätze*. Fig.3 shows his graphing of a succession of three five-bar units by bar number and slur marks.

Kirnberger had apparently been a pupil of J.S. Bach, and certainly sought to disseminate Bach's methods; in turn he was the musical adviser to the great Swiss aesthician J.G. Sulzer. He was also the direct heir of the two lines of harmonic theory that descended from Rameau and Heinichen. This may be seen in three harmonic analyses of pieces (two of them entire) that are associated with him. The first is an analysis of his own E minor fugue, which he appended to vol.i (1771) of *Die Kunst des reinen Satzes in der Musik* in order to demonstrate how to 'detect the true harmony as conceived by the composer', distinguishing it from passing notes, in complex situations. 'Once beginners have acquired skill in the accurate analysis of harmony in this piece, we recommend to all of them that they also study the works of great masters in a similarly thorough way' (Eng. trans., 266, 270ff). This analysis is laid out on five staves, the top two presenting the fugue entire. The fifth staff shows the fundamental bass as Kirnberger derived it, the fourth shows the inessential dissonances, and the third presents a figured bass for the composition, so as to show the inversions of chords. *Die wahren Grundsätze zum Gebrauch der Harmonie* (1773), published over Kirnberger's name, was probably written by his pupil J.A.P. Schulz under his supervision. Appended to this work are harmonic analyses of two works from Bach's *Das wohltemperirte Clavier*: the Fugue in B minor from book 1 (selected because of its apparent insolubility) and the first part of the Prelude in A minor from book 2. The latter is rather simpler, but the B minor Fugue ([fig.4](#)) is laid out on two pairs of staves (the top pair presenting the fugue in finished form), with two further individual staves below. The third and fourth staves give a figured bass (using the bass of the fugue where appropriate) with chords over it that simplify by removing all inessential dissonances. The fifth staff gives the fundamental bass, with figures that retain the essential dissonances. Finally, the sixth staff gives the fundamental bass with only the fundamental chords recorded in its figuring – that is only triads and chords of the 7th, in accordance with Rameau's principles.

Koch's exposition of melodic phrase structure in the 1780s and 90s was to be of the profoundest importance for music theory, ultimately also for analysis, and it led directly to Riemann's theory of

dynamic and agogic. The exposition is in Part ii of the *Versuch* (section 2, subsection 3 ‘On the construction of melodic sections’, and subsection 4 ‘On the combining of melodic sections, or the construction of periods’), occupying in all some 500 pages. It follows immediately on a discussion of rhythm and metre, and establishes a hierarchical framework in which two-bar ‘segments’ or ‘incises’ (*vollkommene Einschnitte*) combine in pairs to form four-bar ‘phrases’ (*Sätze*) which in turn combine to make ‘periods’ (*Perioden*). Koch then laid down rules as to how this framework might be modified without loss of balance. Chapter 3 of subsection 4 contains three studies ‘Of the use of melodic extension’. The first is of extension by repetition of all or part of a phrase; here Koch conveyed the idea of function within a phrase rather than melodic material, speaking often of ‘the repetition of a bar’ when the content of that bar is different on second statement. The second study is multiplication of phrases and cadential figures. The third is of the highly significant concept whereby a two-bar or four-bar phrase-unit may be embedded within an existing melody. Koch explained with each extension device (*Verlängerungsmittel*) how it could be used without upsetting the general effect of symmetry. Thus for example he stated that ‘When a phrase contains one-bar units of which the first is repeated, then the second must also be repeated’, because if not ‘the unequal handling of these small units stands out as an unpleasant effect’ (ii, 63ff).

Chapter 3 of subsection 3 describes processes of melodic compression effected by the telescoping of two phrase-units to form a single unit. In this chapter he used a bar-numbering system that shows the bar at the point of telescoping as having two functions. [Fig.5](#) shows the telescoping of two four-bar phrases into a seven-bar period, with the suppressed bar (*Tacterstickung*) marked with a square (ii, 455).

Koch’s processes of extension and compression show his concern with symmetry and proportion on the smaller scale. Subsection 4 also presents the construction of compositions in ascending order of magnitude, from ‘the combining of melodic sections into periods of the smallest size, or the organization of small compositions’ (chap.2, iii, 39–152) involving the combination of four melodic sections ‘of which two have a cadence in the home key’ (p.57), ‘of which one has a cadence in a related key’ (p.81), and ‘in which only a single closing phrase occurs’ (p.111), and the combination of ‘more than four sections in small compositions’ (p.128) to ‘the combination of melodic sections into periods of greater length, or the organization of larger compositions’ (chap.4, iii, 231–430). In this way Koch drew all the musical elements of a composition into mutual relationship – for music is ‘that art which expresses feelings through the relationships between notes’ (i, 4).

It is in these two chapters that the other important aspect of Koch’s work comes to the fore: that of the formal model. In this respect he cited as his authority Sulzer’s *Allgemeine Theorie der schönen Künste* (1771–4), in which the idea of ‘layout’ (*Anlage*) or model is put forward. Such a model sets down a plan for a work and the most salient features. The artist, following this model, is then to proceed to the ‘execution’ (*Ausführung*) or completion of design and finally to the ‘elaboration’ (*Ausarbeitung*) of the work in all its details. Accordingly, within the discussion of smaller forms (iii, 39ff) Koch provided the plan and characteristic details of the gavotte, bourrée, polonaise, anglaise, minuet and march, concluding with the chorale and figured melody. He described, for example, the gavotte as ‘a dance piece of lively and pleasant character’ much used in theatrical dance. Its features are ‘(1) an even time signature which is usually in 2/2 and not too fast; (2) that each phrase begins with a two-crotchet upbeat; (3) that it has even-numbered rhythmic units with a detectable phrase division at each second bar; (4) that it comprises two sections, each of eight bars’.

All these models were offered as generative: from them compositions could be created, almost mechanically – ‘almost’, because Koch held the view that ‘living expression’ (*lebendiger Ausdruck*) was essential to the artist (‘the poet who abandons expression, image, figure, and becomes a

dictionary-user, is in error', i, 6). They form part of an instruction manual that proceeds from harmony to counterpoint and then to melody and form. Yet they are important, too, in the history of analysis, because they separate 'norm' from individuality, implicitly stating what was 'expected' and thereby defining liberty. Moreover, although most of Koch's abundant music examples were specially written for the book (in the contemporary style of Graun, Benda, and early Haydn and Mozart), he appended to his discussion of the combination of four melodic sections a brief analysis (iii, 58ff) of the minuet from Haydn's Divertimento in G (HII:1). The criteria for his analysis are particularly interesting: 'This little minuet', he began, 'has the most complete unity'. He followed the philosophical dictate, transmitted by Sulzer (under *Einheit*), that 'wholeness ... and beauty consist of diversity bound together in unity'. Sulzer described unity with reference to a clock: 'if only one of its mechanical parts is removed then it is no longer whole [*Ganzes*] but only a part of something else'. In his analysis Koch identified the first four bars as the 'sole principal idea', repeated to form a closing phrase. The opening of the second half, also repeated as a closing phrase, 'while different from the preceding sections, is actually no less than the self-same phrase used in another way; for it is stated in contrary motion, and by means of a thorough deviation which results from this becomes bound together through greater diversity'.

Not only is the 'model' an important tool for formal analysis, later to be used by Prout, Riemann and Leichtentritt, but also the Sulzerian process of model–execution–elaboration is itself an important concept of artistic creation, which later acquired its analytical counterpart in the theory of layers (*Schichten*). In addition, Koch equipped the composer and analyst with a terminology, derived from grammar and rhetoric, for the description of structure. For him, melody was 'speech in sound' (*Tonrede*), comprising grammar and punctuation. He sought to establish a 'natural law' of musical utterance (*Tonsprache*) which he called the 'logic of the phrase'. In this logic the smallest sense-unit, called 'incomplete segment' (*unvollkommener Einschnitt*), normally occupied one bar, the 'complete segment' (*vollkommener Einschnitt*, itself divisible into two *Cäsuren* in Sulzer's definition of *Einschnitt*) two bars. Such segments combine to form the 'phrase' (*Satz*), defined as either 'opening phrase' (*Absatz*) or 'closing phrase' (*Schluss-Satz*). Phrases form a 'period' (*Periode*). All three principal words are grammatical constructs: *Einschnitt* as phrase, *Satz* as clause, and *Periode* as sentence, the third of these divisible, according to Koch, into 'subject' (i.e. first four bars, *enger Satz*) and 'predicate' (latter four bars).

At the beginning of the 19th century came a work that gave an unprecedented amount of space and range of thought to analysis. Jérôme-Joseph de Momigny (1762–1842) in his *Cours complet d'harmonie et de composition* (1806) devoted no fewer than 144 pages, including analytical plates, to an analysis of the first movement of Mozart's String Quartet in D minor K421/417b. He provided a double analysis, examining both phrase structure and expressive content. Momigny's phrase-structure analysis is based on the novel rhythmic concept that musical units proceed from upbeat (*levé*) to downbeat (*frappé*) and never vice versa. He termed his smallest sense-unit, made up of two successive notes, upbeat and downbeat, the *cadence* or *proposition musicale*. These two notes are in the relationship of *antécédent* and *conséquent*. In the opening bars of the movement by Mozart ([fig.6](#)), two *cadences mélodiques* pair off in antecedent–consequent relationship to form a *cadence harmonique*, two of these forming a *hémistiche*, two *hémistiches* forming a *vers*, and two *vers* forming a *période*. Momigny's concept does not, however, insist on hierarchy by pairs, and allows for as many as six or eight *vers* to make up a *période* in certain contexts. The *périodes* form further into *reprises* and are designated according to function within their *reprise* as 'de début', 'intermédiaire', 'de verve', 'mélodieuse', or 'complémentaire'. (In other contexts Momigny used other terms from versification also to designate structural units of intermediate size: *distiche*, *strophe* and *stance*.)

In this phrase-structure analysis Momigny laid the basis for a view of music that was to become important at the end of the 19th century: of music as a succession of spans of tension. In his expressive analysis, on the other hand, he was looking back to the *Affektenlehre* of the 18th century. His method was to determine the *caractère* of the work under analysis, to select a verbal text that had the same character, and to set the text to the principal melodic material of the work so that melodic repetition was mirrored by verbal repetition, fluctuations of musical mood by fluctuations of textual meaning. He constructed a poetic parallel with the music, offering through it an interpretation of both form and content.

The plates for the analysis present the music laid out on ten parallel staves; the top four show the quartet in conventional score, the fifth staff presents the melodic line (and notes printed small here reveal the beginnings of melodic reduction technique) with its *cadences* marked, the sixth and seventh staves provide a harmonic reduction of the texture with harmonic *cadences* marked, the eighth and ninth staves present the principal melodic material with poetic text underlaid (in this case a dramatic scene between Dido and Aeneas, with notes from the first violin assigned to Dido and from the cello assigned to Aeneas) and with simple piano accompaniment, and the tenth staff shows the roots of the prevailing harmony as a fundamental bass ([fig.6](#)).

Momigny's other extended analysis is of the first movement of Haydn's 'Drumroll' Symphony no.103 (Eng. trans., 1994). This spans 24 pages of text combined with 47 pages of annotated full score. The text first investigates the substance of the movement, proceeding period by period, examining the thematic material and its deployment, its use of contrasting dynamics and timbres, stressing the achievement of variety in unity; it then builds a poetic analogue to the music in the form of a village community terrorized by a fearful storm and eventually chastened in the eyes of God. This latter 'pictorial and poetic analysis' belongs to an 18th-century tradition of exploring the borderland between words and music – a tradition exemplified by Klopstock and Lessing, of which the most celebrated product was Heinrich Wilhelm von Gerstenberg's double adaptation of C.P.E. Bach's C minor Fantasy, first to the words of Hamlet's monologue 'To be, or not to be' and then to those of Socrates' monologue as he takes hemlock (see Helm, 1972). Indeed, Momigny's writings suggest that there was a veritable school of such activity in Paris at this time. Grétry was a skilled exponent of this group, which Momigny called 'les parodistes'.

Momigny's two analyses from 1806 are monumental achievements. So too was another extended analysis, which occupied 21 columns of the Leipzig *Allgemeine musikalische Zeitung*, published in two instalments in July 1810: E.T.A. Hoffmann's analytical review of the score and parts of Beethoven's Fifth Symphony, complete with copious music examples (Eng. trans., 1994). Together three mighty analyses emerge from the head-waters of the broadening stream of 19th-century analysis. Superficially, Hoffmann's review has much in common with those of Momigny. Both deal in detail with matters of structure, both use highly technical language, both offer rich descriptive imagery. Hoffmann's pictorial language, however, belongs (as one would expect of him) to the world of Romantic literature, speaking of 'nameless, haunted yearning' and a 'magical spirit realm', and of the work being held together 'in a continuous fantastic sequence ... like an inspired rhapsody'. His technical description, which freely uses such terms as *Hauptgedanke*, *Zwischensatz* and *Figur*, sees the music not in fixed format, through a series of periodic frames, but in free format, as a seamless continuity powered by motifs. It adumbrates an organicist view of musical structure, as for example (Eng. trans., p.163):

it is particularly the close relationship of the individual themes to each other which provides the unity that is able to sustain *one* feeling in the listener's heart. ... It becomes clearer to the musician when he discovers the bass pattern that is common to two different passages, or when the similarity between two passages makes it apparent. But often a deeper relationship that is not demonstrable in this way speaks only from the heart to the heart, and it is this relationship that

exists between the subjects of the two allegros and the minuet, and that brilliantly proclaims the composer's rational genius.

At one point Hoffmann's text sets out five forms of the Menuett theme so that the reader can see the transformations.

Schumann's review of Berlioz's *Symphonie fantastique* (1835) also combines objectivity and subjectivity in tackling the work from four distinct points of view: formal construction, style and texture, the poetic 'idea' lying behind the symphony, and the spirit that governs it. The review ranges itself against critics of the work, examining its structure section by section to show that 'despite the apparent formlessness ... as regards its major proportions it possesses a wonderfully symmetrical disposition – to say nothing of its inner coherence' (Eng. trans., 1994, p.174); discussing harmonic and modulatory style, melodic and contrapuntal fabric, acknowledging the contravention of many theoretical rules but justifying them by the work's intensity, its 'wholly distinctive and indomitable spirit' (p.180); recounting the work's programme, and arguing that it spurs the listener's imagination to perceive its own further meaning; and finally affirming that the symphony 'has to be understood not as the work of art of a master, but rather as unlike anything that has gone before it by virtue of its inner strength and originality' (p.194).

The use of analysis to serve an interest in musical objects themselves, rather than to supply models for the study of composition, reflected a new spirit of historical awareness that arose with Romanticism. It was not a dispassionate 'scientific' interest in the past specimens, but a desire to enter into the past, to discover its essence. This spirit, in confluence with the Romantic image of 'genius', resulted in a new type of monograph, biographical and historical. An early example was J.N. Forkel's *Ueber Johann Sebastian Bachs Leben, Kunst und Kunstwerke* (1802), which, while including nothing that could be termed formal analysis as such, contained an extended characterization of Bach's music as a whole – in short, a stylistic analysis. Forkel was much influenced by the concept of 'organism' in contemporary philosophy and education; to seek the depths of 'Bach's transcendent genius' (Eng. trans., 1920, p.xxix) in the totality of his work rather than in individual compositions was consistent with this. He declared Bach's mastery of technique; at the same time he tried to define where 'Bach followed a course of his own, upon which the text books of his day were silent' (p.74). To identify genius he took, in chapters 5 and 6 ('Bach the Composer'), five aspects of music: harmony, modulation, melody, rhythm and counterpoint. His method was to cite a technical context, state the conventional in terms of contemporary theory or practice, and then consider Bach's handling of such a context. He thus had illuminating things to say about Bach's voice-leading, his use of passing notes, of pedal points, of remote modulations, his contrapuntal solo melodic writing, his fugal counterpoint and his use of the voice; for example (p.77):

there is a rule that every note raised by an accidental cannot be doubled in the chord, because the raised note must, from its nature, resolve on the note above. If it is doubled, it must rise doubled in both parts and, consequently, form consecutive octaves. Such is the rule. But Bach frequently doubles not only notes accidentally raised elsewhere in the scale but actually the *semitonium modi* or leading-note itself. Yet he avoids consecutive octaves. His finest works yield examples of this.

For Forkel such transgression on Bach's part always produced a more natural, spontaneous or smooth effect than orthodoxy. The link between genius and nature was axiomatic: 'when [Bach] draws his melody from the living wells of inspiration and cuts himself adrift from convention, all is as fresh and new as if it had been written yesterday' (p.83).

The early decades of the century saw the publication of other comparable monographs, including Baini's study of Palestrina (*Memorie storico-critiche della vita e delle opere di Giovanni Pierluigi da Palestrina*, 1828), Carl Winterfeld's of Palestrina (1832) and Giovanni Gabrieli (1834) and Aleksandr Dmitriyevich Ul'bishev's of Mozart (1843). In these, technical assessment was placed at the service of characterization of style; there was a critical and historical dimension to such writing that set it apart both from the field of composition teaching that had given rise to Koch's terminology and from the critical analysis of individual works exemplified by Hoffmann's review of Beethoven's Fifth and Schumann's of the *Symphonie fantastique*. Other writings pursued a third analytical path that derived from the model of the composition treatise but was focussed on the elucidation of pre-existing works – even where the work in question had been composed by the author, as in the case of the analysis by G.J. Vogler of one of his own preludes (1806; Eng. trans., 1994).

Perhaps the most striking aspect of the *Traité de mélodie* (1814, 2/1832) by the Czech composer and theorist Antoine Reicha is its citation of so many examples from actual music (he listed the composers in his preface). All these examples are submitted to segmentation and discussion. This in itself represents a significant shift from the compositional to the analytical standpoint – Reicha remarked in the preface to the *Traité* that 'It is with music as with geometry: in the former it is necessary to prove everything by music examples, just as it is with the latter by geometric figures'. Such a shift is emphasized by the inclusion of six extended analyses of works by Haydn (pp.40ff and ex.D<sup>4</sup>), Mozart (p.43, E<sup>4</sup>), Cimarosa (pp.43ff, F<sup>4</sup>), Sacchini (pp.45ff, G<sup>4</sup>), Zingarelli (pp.47ff, Q<sup>4</sup>) and Piccinni (pp.49ff, R<sup>4</sup>). Each piece is presented as a continuous melodic line annotated with brackets, labels and comments, and a page or two of discussion in the text.

Reicha established a set of technical terms in the French language comparable to those of Koch, Riepel and Sulzer. He used *dessin* to denote the smallest unit of construction (equivalent to *Einschnitt*), and likened it to an *idée*; two or three *dessins* normally make up a *rythme* (equivalent to *Satz*), repetition or multiplication of which (the second of a pair being called the *compagnon*) produces the *période*. A composition made up of several *périodes* is a *coupe*: that of two or three *périodes* is a *petite coupe binaire* or *ternaire*, and that of two or three *parties*, each comprising several *périodes*, is a *grande coupe binaire* or *ternaire*. The *dessin* is punctuated by a quarter-cadence (*quart de cadence*), the *rythme* by a *demi-cadence*, the *période* by a *trois-quarts de cadence* (if repeated) or by a *cadence parfaite*. Koch's division into grammar and punctuation is mirrored in this view, as is his fundamental concept of hierarchical phrase structure. Thus Reicha took the theme of the last movement of Mozart's String Quartet K458, 'The Hunt', and divided it into two *membres* (i.e. *rythmes*), each comprising two *dessins* of two bars' duration. Three of the four *dessins* are melodically distinct (his nos.1, 2 and 3), and Reicha broke each of these further into two sub-units, numbering five of them (nos.4–8) and still calling them *dessins*. All this is illustrated in his music example B<sup>5</sup>, of which the first section is shown in [fig.7](#).

Such writing could arouse the interest of the musical public. Around 1830 there was an intense debate in the pages of *La revue musicale* and the Leipzig *Allgemeine musikalische Zeitung* about the opening bars of Mozart's 'Dissonance' Quartet K465 (see Vertrees, 1974), in which the protagonists were Fétis and an anonymous writer identified by the pseudonym 'A.C. Leduc'. The response to this by the Mannheim-based composer and theorist Gottfried Weber was widely circulated. Weber acknowledged the 'disturbing effect' of the passage, and stated that its causes may be ascertained by analysis (Eng. trans., 1994, p.163): 'A thorough-going *analysis* of the entire *harmonic and melodic fabric* [*Textur*] of the passage in question will enable us to detect all these causes, to isolate them and see them interacting with one another, and thus to specify *what* it is in these tonal constructs [*Anklängen*] that disturbs us so much'. Weber deployed a number of

approaches. He considered the tonal scheme of the passage through the application of harmonic theory; he identified the proliferation of passing notes as a factor contributing to the effect of the music; he noted cross-relations between the voices, and parallel progressions at the interval of a 2nd; he reviewed 'the grammatical construction of the passage as a whole' and finally assessed its 'rhetorical import'. Weber did not claim that his analysis proved either the 'lawlessness' or the 'law-abiding quality' of the music (p.183): only the 'musically trained ear' could judge whether the tolerable 'limits of harshness' had been overstepped. Content himself to accept the judgment of Mozart, and to disregard 'fools and jealous ones', Weber nonetheless felt that his analytical approach had been able to establish what the effects consisted of and what intentions lay behind them: 'All that technical theory could have done, it has here done' (p.182).

Weber was also among those who in the first decades of the 19th century continued the work previously done in the area of harmonic theory by Rameau, Heinichen, Kirnberger and others. His four-volume theory of tonality (*Versuch einer geordneten Theorie der Tonsetzkunst*, 1817–21) was widely used and acknowledged: the work went through three German editions, and its American-English edition (published under the name of Godfrey Weber), translated by James Warner (1842), went through some six impressions; this edition was revised in 1851 by John Bishop of Cheltenham, the translator of Czerny and editor of Reicha. In §53 of the *Versuch* Weber set out a new method of designating chord types. This uses Gothic letters in upper and lower case, with superscript circle, '7' and crossed-'7', to designate major, minor and diminished triads, dominant 7th, secondary 7th, half-diminished 7th, and major triad with major 7th. Then in §151 there are Roman numerals, large and small (actually small-capital), with the same superscript symbols, to denote chord types as located on degrees of the scale within a given key (fig.8). The two 'modes of designation', as described in §153, can be combined by prefixing an upper- and lower-case italic letter and colon to the Roman numeral as an index of the prevailing key; thus C:IV<sup>7</sup> indicates the dominant 7th on the fourth degree of C major.

Weber claimed originality for these symbol-systems and complained of piracy by contemporary writers. The combined system just outlined provided the basis for Schenker's designation of fundamental harmonic steps (*Stufen*), and became widely used in 20th-century theoretical writings.

By far the most visionary steps in harmonic theory at this time, however, were taken by Momigny. Over a period of 18 years he formulated a theory of long-term tonality which enabled him to imply, for example, that the first movement of the Mozart D minor String Quartet in its entirety modulates (in the modern sense) a mere eight times, and that other extended passages normally regarded as modulating several times never leave the home key. While writing the *Cours complet* (1803–5) he evolved an expanded notion of tonality whereby a key comprised not only its seven diatonic notes but also the five flanking notes on the sharp and flat sides and a further five on the double-sharp and double-flat sides (relatively speaking), to produce a tonal space of 27 notes. Finally, in *La seule vraie théorie de la musique* (1821) that space is divided into diatonic genus, chromatic genus and enharmonic genus. By this formulation (derived from classical Greek music theory), most conventionally accepted modulation is classed as movement within this expanded tonal space – movement between areas called 'octachordes'. Such local movement within the tonal space is termed *modulation* (or *modulation négative*), whereas movement outside that space is termed *transition* (or *modulation positive*).

### 3. 1840–1910.

When Carl Czerny translated Reicha's *Cours de composition* of 1816 and two *Traité*s as *Vollständiges Lehrbuch der musikalischen Komposition* (Vienna, 1834), he contributed by way of

an appendix an analysis of the first movement of Beethoven's 'Waldstein' Sonata, in which he stripped away the surface figuration ('the moving figure'), leaving only the underlying harmonies ('the ground-harmony'), presented in block chords. Czerny also did this later in his own *School of Practical Composition* (?1848) for Chopin's Etude op.10 no.1 (fig.9), for the first prelude of Bach's *Das wohltemperirte Clavier*, i, and for the introduction to a sonata by Clementi; and he reduced a study by Cramer to its basic voice-leading ('the ground-melody').

All the music examples in Czerny's *School* are attributed (they represent the generation of Beethoven, Hummel, Rossini, Méhul etc.), and many analyses of whole compositions are included. The treatise was unique in being the first independent manual of form and instrumentation. It took for granted a grounding in harmony and counterpoint, and concerned itself exclusively with the development of ideas and the formation of compositions 'from the most simple Theme to the Grand Symphony, and from the shortest Song to the Opera and Oratorio' (i, p.iii). It is a veritable compendium of musical forms, including exotic dances (such as the bolero, fandango and tarantella and a section on Russian national dances), vocal forms (such as the *romance*, *preghiera* and ballad), as well as the constituent movements of a sonata, many other forms, and genres such as the quartet, quintet and sextet.

Czerny's attitude towards form was highly determinate: 'the composition must ... belong to a species already in existence; consequently, in *this* respect, no originality is, in general, necessary' (i, 1). His understanding of '*form* and *construction*' is itself quite specific (i, 6):

1st [A work's] extent and proper duration.

2ly The requisite modulations, partly into established keys, and partly also into arbitrary and extraneous ones, as well as the places where they are introduced.

3ly The rhythm (the proportion or symmetry) both of the whole, and also of the individual parts and periods of a piece.

4ly The manner in which a principal or an accessory melody is brought in at the proper place, and where it must alternate with such passages as form either a continuation, a moving figure, or a bridge to the following.

5ly The conduct and development of a principal or accessory idea.

6ly The structure and proper succession of the different component parts of the piece, answerable to the species of composition which the author has had in view, as expressed in the title.

There are ... a tolerable number of different forms in music. These, however, are reducible to a far lesser number of each principal form, as are totally different in their structure from one another.

A.B. Marx, in his *Die Lehre von der musikalischen Komposition* (1837–47; partial Eng. trans., 1997), was less procrustean. 'The number of forms is unlimited', he said, and there are ultimately no laws dictating what form a particular composition should take. For Marx, form was 'the way in which the content of a work – the composer's conception, feeling, idea – outwardly acquires shape'. A better term for it, he suggested, might have been 'the externalization of content'. Nonetheless, the student composer cannot learn composition through inspiration and idea alone. He needs the models of previous composers as an intermediate stage on the road towards free composition. Thus 'it is possible to *derive* certain *principal forms*, and also certain composite or *compound forms* which are made up of these or variations of them; and only by creating these distinctions does it become possible to comprehend and master the immeasurable array of [formal] moulds [*Gestalten*]' (ii, 5). For Marx, 'form' was almost synonymous with 'whole' (*Ganzes*) (ii, 4ff):

Every work of art must have its form. For every work of art has of necessity its beginning and its end, hence its extent. It is made up in different ways of sections of different type and number. The generic term for all these features is the *form* of a work of art. ... There are as many forms as works of art.

Marx acknowledged that there were similarities in form between pieces, but denied strongly that forms were, as a result, 'routines' through which composers worked. Content was not really

separable from form. Even so, the very appearance of similarities suggests that ‘there must be some rationale underlying these moulds, some concept which is of broader significance, greater strength and longer duration’ (ii, 7). Thus Marx denied form as ‘convention’ and proposed for it an epistemological basis. Forms are patterns abstracted from past practice, rather than conscious guidelines; they represent deep-seated principles of organization which analysis uncovers.

This idea is close to the ideas of A.W. Schlegel (1767–1845) concerning the relationship between art and nature: beneath the consciously moulded work of art must lie an unconsciously moulded work of nature. Nature ‘is an intelligence. ... [It should be understood] not as a mass of products but as itself a producing [force]’ (*Vorlesungen über schöne Literatur und Kunst*, i, 1801–2). Very much abreast of the Romantic philosophy of his day, Marx believed in the originality of the artist, in genius as a special endowment, in the developing ‘idea’ as all-important, in rules as existing to be broken. Marx was also influenced by the outlook of the Swiss educationist Heinrich Pestalozzi (1746–1827), who saw the law of man’s development as essentially ‘organic’ – not as a combination of circumstances but as an inner growth process. All processes have a starting-point, they germinate and grow, and at all points are harmonious and whole. At that starting-point Marx placed the *Motiv*, a tiny unit of two or more notes which serves as ‘the seed or sprout of the phrase out of which it grows’ (i, 27). In 1841–2 Marx engaged in public dispute with Fink over methods of teaching composition, showing himself fully aware of the philosophical basis of his position (see *Die alte Musiklehre im Streit mit unserer Zeit*, 1841; see also Eicke, 1966).

Marx’s discussion of sonata form (*Sonatenform* – he was probably the first to use that term for the internal scheme of one movement) differs significantly from that of Czerny. Marx offered (ii, 498ff) a page of formal instruction on sonata form in the major key followed by twice as much indicating ways in which the ‘ground-form’ may be deviated from, stressing always that the spirit (*Geist*) of the composer may lead him in some other direction, and citing specific cases in Mozart and Beethoven. He pointed only to the unique balance of the key scheme, spelling it out in a highly original fashion, and recommended the composer to keep its advantages carefully in mind. The discussion was superseded when Marx issued the third volume of his compositional manual in 1845. There he devoted close on 100 pages to the topic, treating each of the principal sections of sonata form in turn, the design of each subject group (*Hauptsatz*, *Seitensatz*, *Schlussatz*), the linkages between groups, the internal construction into antecedent and consequent, the use of motifs, ideas and cells. Significantly, he used the Beethoven piano sonatas as his exemplification throughout this discussion. Volume iii is itself a manual of musical forms that starts with simple forms, including variations, proceeds to rondo forms, to sonata form and thence to hybrid forms such as sonata-rondo, multi-movement structures and the fantasy, and concludes with vocal genres.

Marx’s most significant analytical writing is contained in his *Ludwig van Beethoven: Leben und Schaffen*, which was first published in 1859 and continued to be reissued into the 1900s. This is a biography of the oeuvre rather than of the man – a sequence of analyses through which the development of Beethoven’s art is traced. It contains extended analyses of all the symphonies, *Fidelio*, the *Missa solemnis* and several of the quartets. Many other works receive briefer analytical treatment. It is in this book that the concept of developing the idea is exploited most fully, especially in the chapter ‘The *Eroica* Symphony and Ideal Music’ (i, 275; Eng. trans., 1997), which expounds the aesthetic basis of ‘idea’. The chapter on the Ninth Symphony (ii, 260) shows Marx’s idealistic analytical technique at its best. His introduction to the performance of Beethoven’s piano sonatas (1863) is alleged to be an outgrowth of this book. As well as giving advice on matters of execution, it supplies brief analyses of most of the sonatas, motivic and descriptive.

The latter part of the 19th century, and the early part of the 20th, saw the production of a growing number of books, pamphlets and other writings on musical subjects to meet the demands of pedagogical expansion. Though harmony texts also became numerous in this period, it was musical form above all that provided the material for such works. Some, perhaps because they were entirely directed at the lay reader, did not make explicit their intellectual sources and influences; but others chose also to contribute to and develop what was by now an established tradition of ideas. Marx's *Die Lehre von der musikalischen Komposition* went through six editions during his lifetime, and an English translation of the fourth edition was issued in 1852. The work eventually underwent revision by Riemann between 1887 and 1890 (i, rev. 9/1887; ii, rev. 7/1890; iv, rev. 5/1888), and was used in theory teaching well into the 20th century, exercising a profound influence on generations of musicians. In 1885 Salomon Jadassohn produced volume iia of his composition treatise, entitled 'Forms in musical works of art analysed and graded as a course of study'. In 1887 the American writer A.J. Goodrich published his *Complete Musical Analysis*, and the American teacher Percy Goetschius produced a succession of books on musical form, of which his *Models of the Principal Musical Forms* (1894) was the first. Riemann's own *Katechismus der Kompositionslehre* (subtitled *Musikalische Formenlehre*) appeared in 1889. In 1908 Stewart Macpherson produced his *Form in Music*, which was the standard manual for English music students for much of the 20th century.

Among those who expressed themselves indebted to Riemann – a prolific and influential writer whose works covered an enormous range of musical subjects – was the British theorist Ebenezer Prout, who between 1893 and 1897 produced his two volumes *Musical Form* and its sequel *Applied Forms*. Prout took from Riemann his fundamental principles of rhythm, and in particular the study of motifs, and admitted that both volumes had involved intensive study of 'large German treatises'. The first volume proceeds from motif to 'phrase' and 'sentence', and then to simple binary and ternary forms, the second from dance forms to sonata form and vocal music, including a chapter on 'cyclic forms' which deals with the symphonic poem. Hugo Leichtentritt completed his *Musikalische Formenlehre* in 1911, later to become the first part of a more extended study (Eng. trans., 1951) including chapters on 'Aesthetic ideas as the basis of musical styles and forms' and 'Logic and coherence in music'. It also had detailed analyses of works, notably a 45-page study of Bruckner's Eighth Symphony and a chapter devoted to Schoenberg's piano pieces opp. 11 and 19. It was with Prout and Leichtentritt that *Formenlehre* became a branch of the discipline of musical analysis rather than a prescriptive training for composers, and hence entered the field of musicology.

Approaches to harmony in the second half of the 19th century showed a tendency to divide into two camps: on the one hand those that took a conservative approach to theory but developed new insights born out of analytical pragmatics, and on the other hand those that brought a new rationalism to theory but had less impact on the practice of analysis. An example of the first kind is to be found in *Die Grundsätze der musikalischen Komposition* (1853–4) by the influential Viennese teacher Simon Sechter. Sechter's harmonic system took over the concept of fundamental bass originated by Rameau and transmitted via Heinichen, Kirnberger and Schulz. He developed a theory of chord progression based on correct succession of 'fundamental notes' and the 'underlying harmonies' (*Grundharmonien*) that they project. Sechter used the notion of harmonic step (*Stufe*), and he defined notes as either *leitereigen* (diatonic) or *leiterfremd* (literally 'alien to the scale'). 'Beneath every chromatic progression lies a diatonic one'; most chromatic harmony can be read as diatonic harmony with chromatic inflection; and most 'apparently modulatory passages in reality retain their allegiance' to the tonic. Fundamental notes must be diatonic to a major or minor scale, whatever goes on over them, but a subordinate *Stufe* of one key may become the tonic of a new key, thereby permitting transition from key to key. Some chords are described as 'representing' a

fundamental that they do not contain (*Stellvertreter*: '[root] representatives'). Other chords are seen as belonging to two key areas (*Zwitterakkorde*: 'hybrid chords'). Although Sechter's approach looked back to Rameau, it also marked a major step in coming to terms with 19th-century developments in harmonic language; it influenced many generations of musicians, of whom Schoenberg is perhaps the most prominent example.

Another link between old and new in mid-century was the *Lehrbuch der musikalischen Komposition* (1850–67) by J.C. Lobe. Lobe used a system of designation similar to that of Gottfried Weber's *Versuch* several decades previously, but rather cruder: thus C:3 denoted the (minor) triad on the third degree of C major; a:5, the dominant 7th on the fifth degree of A minor; h:2°, the chord of the 9th on the second degree of B minor. Like Sechter's discussion of harmony, Lobe's is centred on the notion of *Stufe*. It makes a distinction between the progressions that are diatonic (*leitereigen*) and those that are modulatory (*ausweichend*); the concept of the altered (*alterirt*) chord allows chords with foreign harmony notes to be viewed as diatonic in certain contexts, thus increasing the power of the harmonic step greatly (i, 242ff). Lobe, it should be said, claimed credit for only part of this thinking – thinking that looks forward to the harmonic approaches of Schenker and Schoenberg.

Sechter's third volume (1854) speaks of 'rhythmic sketches' and makes use of two noteworthy graphic devices. The first sets out the harmonic structure of an entire piece in terms of fundamentals whose durations are undifferentiated but which are marked off into phrases (*Abschnitte*) by commas (shades of Mattheson). The second presents a fully rhythmicized succession of fundamentals with two rows of numerals immediately beneath the staff. These numerals denote for each fundamental in turn the *Stufe* which it forms of either or both of two prevailing key areas. This graphic technique was adopted and elaborated by several analysts, notably in the quest for a theoretical formulation of the harmony of Wagner: fig.10, from an analysis by Karl Mayrberger, is a good example.

Although Mayrberger acknowledged his debt to Sechter, he also claimed to have built on the thinking of Moritz Hauptmann, whose *Die Natur der Harmonik und der Metrik: zur Theorie der Musik* (1853) was conditioned by Hegelian philosophy, and who did much to introduce the idea that music theory should be systematic and founded on logical principles. He formulated (1853) a theory of harmony and rhythm based on what he claimed to be universals. His theory of rhythm, like that of Momigny, took a two-element pattern as its basic unit and explained all units comprising more than two elements as intersections of two-element units. In Hauptmann's Hegelian terms, a two-element unit was the 'thesis', a three-element unit the 'antithesis' and a four-element unit the 'synthesis' in the metrical system. But Hauptmann's basic unit, unlike Momigny's, was made up of downbeat followed by upbeat, and it was Mathis Lussy who in his study of the anacrusis (1874) took up Momigny's *levé-frappé* pattern and developed the theory further. From this Riemann proceeded to develop a full theory based on the indivisible unit of the *Motiv*. The bulk of it appeared in his *Musikalische Dynamik und Agogik* (1884) and *System der musikalischen Rhythmik und Metrik* (1903); the theory was summarized in the *Vademecum der Phrasierung* (1900; 8/1912 as *Handbuch der Phrasierung*).

Underlying Riemann's theory is the postulate that the pattern weak–strong is the 'sole basis for all musical construction' (1895–1901, i, p.132). This fundamental unit is termed the *Motiv*: it represents a single unit of energy (*Lebenskraft*) passing through phases of growth, peak and decay. It is thus a dynamic trace, a flux, and is far removed from the traditional notion of 'beats' in a 'bar', each beat being separate and having its own 'weight'. Musical form is constructed of many such units overlapping and interacting to produce extended and compressed spans of energy. These interactions occur against a 'background' of absolutely regular hierarchically built-up patterns:

where two *Motiv* units occur in succession they form the two elements of a *Motiv* at the next level of structure, the first forming the growth phase, the second the stress point and decay phase. In turn, two such larger *Motiv* units form a still higher-level *Motiv*, and so on in a hierarchy. The result is a kind of conceptual grid, made up of equal units of energy and bearing an intrinsic relationship to the topography of the music. Given this theory, the process of analysis is one of locating the lines of the grid behind the articulated surface of a piece or passage.

A piece that was slavishly aligned to its grid would be made of regular modules, each comprising eight bars of 2/4 or 3/4 and pairing off into 16-bar, 32-bar, 64-bar and so forth units at higher levels. The eight-bar module is shown for 2/4 in [fig.11](#) (*Zweitaktgruppe* is Riemann's term for a pair of *Motiv* units in weak–strong relationship: *Halbsatz* for a four-bar unit – either antecedent or consequent; *Periode* for an eight-bar module: 1895–1901, i, p.163). But in practice music adopts certain 'symmetry-disturbing processes', some of which stretch or compress the grid, others of which temporarily upset the internal relationships without affecting the regularity of the grid itself. Chief among these are: (a) elision (*Auslassung*) – the suppression of the growth phase of a unit, thus yielding a strong–weak–strong pattern; (b) cadential repetition – restatement of the stress point and decay phase of a unit at any level of structure (a classic example is the introduction to Schubert's Symphony no.9; [fig.12](#)); (c) dovetailing – a transfer of function whereby a final stressed unit is converted into an initial unstressed one; (d) general upbeat (*Generalauftakt*) – a large-scale upbeat, often occupying only the space of the upbeat to a *Motiv* but functioning as the upbeat to a larger formal unit; and (e) appended *Motiv* (*Anschlussmotiv*) – a subsidiary phrase unit placed immediately after the strong beat of a main phrase unit, serving to generate a second strong beat where a weak beat would normally occur. The first three of these processes alter the temporal distance between points on the grid; the last two may alter the impression of such distance but do not necessarily alter the number of intervening beats.

Riemann's own analyses take one of two forms: books of analyses (those of Bach's '48', 1890, and Beethoven's string quartets, 1903, and piano sonatas, 1918–19), or 'phrase-structure editions' (of sonatas of Mozart, Beethoven and Haydn). The latter are editions that use special phrase-marks and signs, and number the bar-functions beneath the staff. The former adopt as their method of presentation the 'continuity line' – a single staff that shows all the main thematic material, accompanied by the special signs and numbering used in the editions, and employing also Riemann's system of harmonic symbols (fully explained in his *Handbuch des Generalbass-Spiels*, 4/1917, pp.12ff). These books also use conventional terminology when dealing with thematic material and aim at fully rounded 'technical and aesthetic analyses of pieces of music'.

In 1887 a writer who rejected both the formal analytical approach and that of naturalistic description, and was at the same time mistrustful of historical information, began publication of a guide to the concert repertory, *Führer durch den Konzertsaal*. This was the musicologist and conductor Hermann Kretzschmar. The first edition of his guide contained a very large number of analyses that Kretzschmar had written during earlier years for the benefit of his concert patrons. The analyses were classified into 'Symphony and Suite', 'Sacred Works' and 'Oratorios and Secular Choral Works', each category arranged in order by date of composition. The *Führer* was extremely popular: it went through many editions and, though already a vast undertaking, was constantly enlarged as it did so. By 1919 it was over 2000 pages long and its historical scope spanned nearly 300 years – from Monteverdi to Mahler.

Kretzschmar forged an approach to musical appreciation that saw music as a language, universal in character, with meanings recognizable by those with the necessary aesthetic training (*Satzästhetik*). Such training brought with it an instinctive sense of how a phrase should be performed, a perception

of the inner character of the phrase. At the end of this training stood a method of interpretation that Kretzschmar called ‘musical [Hermeneutics](#)’, and which he saw as a revitalization of the Baroque theory of affects. In the first of two articles promoting this method (*JbMP* 1902, 1905) Kretzschmar defined hermeneutics as follows (see Bent, 1994, ii, 22–5, 106–7):

In every field its aim is the same – to penetrate to the meaning and conceptual content [*Sinn und Ideenhalt*] enclosed within the forms concerned, to seek everywhere for the soul beneath the corporeal covering, to identify the irreducible core of thought [*reinen Gedankenkern*] in every sentence of a writer and in every detail of an artist’s work; to explicate and interpret [*zu erklären und auszulegen*] the whole by obtaining the clearest possible understanding of every smallest detail – and all this by employing every aid that technical knowledge, general culture and personal talent can supply.

Kretzschmar sought to attack the free poetic description of music which many writers of the time indulged in, and to show how his own method was both firmly based on technical criteria and also capable of illuminating whole compositions rather than merely individual passages. At the heart of the method was ‘thematic character’ as defined by interval and contour. In these terms, the subject of the C major fugue of Bach’s *Das wohltemperirte Clavier*, i, has an ‘energetic disposition’ which ‘rests on the motif of the 4th as the principal element of the melodic structure’; but ‘with the descending final phrase and the cautious approach to the main motif, the flow of the unmistakable energy which forms the middle section is framed on either side with expressions of melancholy’ (*JbMP* 1905, p.282).

Hermeneutics as a critical method – as distinct from its etymological roots in a more general ‘interpretation’ – is generally acknowledged to have first been formulated in the work of Friedrich Schleiermacher and later developed by Wilhelm Dilthey. It was most likely the latter who influenced Kretzschmar in his use of the term to describe his own analytical writing, and in his identification of Hoffmann and Schumann (see §2, above, for discussion of their analytical reviews of Beethoven and Berlioz) as being among his earlier precursors.

One may also find earlier examples of hermeneutic critical analysis in two renowned composer biographies: Otto Jahn’s *W.A. Mozart* (1856–9) and Philipp Spitta’s *Johann Sebastian Bach* (1873–80). Jahn’s *Mozart* contained many analyses of individual works, often very detailed, sometimes occupying whole chapters. The more technical analyses tended to approach their subject from three points of view: external form, thematic character and use of instruments or voices. Even when Jahn drew certain groups of works together for consideration as genres – the early instrumental works, the piano music, the symphonies and so on – he generalized only on matters of form before dealing with works individually; but in these chapters there were also valuable comparative analyses of two or more works. In Spitta’s *Bach* there was rather less formal analysis and much more on musical character. Spitta aimed, by description, ‘to call up the spirit which alone can give [music] life and soul’ (Eng. trans., i, p.viii). Spitta went further and attempted a symbolic interpretation, notably for the B minor Mass: for example (iii, 51):

to represent the essential Unity as clearly as possible, Bach treats the parts in canon on the unison at the beginning of the principal subject each time, not using the canon on the fourth below till the second bar; thus both the Unity and the separate existence of the two Persons are brought out.

Wagner’s music dramas were fertile ground for the production of analyses that aimed at ‘elucidation’ (*Erläuterung*). This was the word used by Hans von Wolzogen to describe his work. Encouraged by Wagner himself and also by Liszt, von Wolzogen published a ‘thematic guide’ (*thematischer Leitfaden*) to the *Ring* cycle (1876), followed by similar guides to *Tristan und Isolde* (1880) and *Parsifal* (1882). Von Wolzogen’s writings combine synopsis of the plot and stage action with the identification of motifs and descriptive paraphrase of their musical treatment. He was not

the first writer to identify motifs in Wagner's works by name, but his writings achieved wide currency and authority, and his method was taken up over the following decades by others, both in connection with Wagner (as late as Newman, 1949) and with the works of other composers. To the extent that his work spawned popular imitations, von Wolzogen's caution in identifying motifs with specific words and images, and his restricted use of the term 'leitmotif' to describe 'a cluster of definable separate motifs ... linked by organic mutation' (Bent, 1994, ii, p.91) have been obscured. It may be noted in passing that von Wolzogen's analysis of *Tristan* was a direct influence on Mayrberger's, though their methods and purposes were quite different.

Towards the end of the century, writing that moved in a hermeneutical way across a number of modes of interpretation had come to be influenced by the development of musical text criticism, which brought with it the first of the massive collected editions (see [Editions, historical](#) and [Musicology, §II, 3](#)). The most notable scholar in this field was Gustav Nottebohm, who worked on the collected editions of Beethoven (1862–5) and Mozart (from 1878). In a long series of studies of sketches and other composition materials, published between 1865 and 1890, he tackled the problems of Beethoven's creative processes: how many pieces Beethoven worked on at a time, how he used sketches, drafts and scores, how he worked from single-line draft to full texture, how he conceived and modified formal structure. What Nottebohm came across on the way, namely Beethoven's painstaking formulation of thematic material, was a living exemplification of the ideas of melodic motif, germ-cell, organic growth, unity – ideas that were rife and which had found their way into the theoretical tradition. Here was a way of getting behind the finished text, of showing the composition student how a masterpiece was put together, errors, false starts and all, and at the same time of verifying one's deductive analyses.

This prospect was bound to be attractive to those seeking to produce elucidatory analysis. One of the first such writers to draw on Nottebohm's findings was George Grove. Each of the analyses in *Beethoven and his Nine Symphonies* (1896) presented a rounded picture of its subject, with a balance of historical and biographical information, text-critical evidence and formal analysis – both plentifully illustrated with music examples – and critical judgment. Each concluded with a survey of the work's critical reception. Grove adopted a narrative approach for his formal analyses which has since become the stock in trade of descriptive writers on music – by animating the orchestra ('This is prolonged by the wind instruments in a humorous passage') or the piece itself ('after a reference back ... a new subject appears ... as harsh and uncompromising as the first subject') or by treating the listeners as visitors ('After this we arrive at a pause'). Grove differed from Kretzschmar, however, in refusing to be influenced by the idea of motivic growth. The tangible evidence of how a theme came about was of interest to him, and he was ready to point out similarities between the themes of different composers, but he interpreted these as a matter of historical influence rather than something around which to create theories of musical structure.

#### 4. 1910–45.

Around the turn of the 20th century experimental research gave a scientific basis to some of the recently emerging attitudes towards musical experience. It was observed above (§3) that A.B. Marx, while using the word *Gestalt* for a formal 'mould', regarded 'form' as virtually synonymous with 'whole' (*Ganzes*). He felt, too, that formal 'moulds' were not merely conventions: they represented deep-seated principles of organization in the human mind. By the time of Prout and Leichtentritt a new branch of psychology was emerging, which laid emphasis on perception rather than on motivation: Gestalt psychology.

In essence Gestalt psychology was concerned with form (in keeping with the views of Hanslick, 1854, and of J.F. Herbart, 1811): it laid stress on the power of the perceiver mentally to organize whatever objects or situations he encounters, and to do so in formal terms rather than terms of individual components and his previous experience of them. Thus visually, objects that are in close proximity to each other, and objects that are similar in shape or colour, tend to be perceived as a group. Moreover, the perceiving mind seeks the simplest available grouping, looking for basic, complete shapes – for ‘continuous wholes’. It looks also for repetition and symmetry, for equal separation in space and time. In short, it tries to place the simplest, most regular, most complete interpretation on the data before it.

Musical sound was used for illustrative purposes by the early Gestalt psychologist Christian von Ehrenfels. He pointed, in 1890, to the fact that a melody does not lose its melodic identity when transposed, despite the change of each note: a melody has a shape that can be heard, recognized and learnt without recognition of its constituent notes, intervals or rhythms. Perception of the shape comes not as a slow process but as a flash of insight; it is like the completion of an electric circuit.

There are three principles that relate to this. ‘Closure’ is the principle whereby the mind, when presented with a shape that is almost but not quite complete, will complete the shape automatically. ‘Phi phenomenon’ is the principle whereby the mind, when confronted with two separate occurrences, may link them together and attribute movement from one to the other. ‘Prägnanz’ is the principle whereby the mind will look for the interpretation of data that yields the most ‘pregnant’ result – the ‘best’ interpretation. All these processes can be seen at work in, for example, perception of a lute transcription of a 16th-century vocal piece, where the original vocal lines are presented only incompletely because of the limitations of lute technique; or in a solo violin or cello work by Bach, where several contrapuntal lines are carried, all of them incompletely yet with a general sense of the polyphony.

One final principle is of fundamental importance to music: figure–ground perception. Very often the mind selects from the data before it only certain salient features; these it organizes as a ‘pregnant’ figure (*Gestalt*), leaving the rest of the data to remain in the field of perception. Ultimately only the figure is passed up from the nervous system (where this organization of sensory experience takes place) to the psychological field where it is ‘understood’. The rest of the data remains as the ‘ground’. This subconscious process is simulated in a procedure the musical analyst calls ‘reduction’, an early example of which is Czerny’s stripping away of surface ornament in Chopin, Bach and Clementi to reveal the underlying essential structure (see §II, 2 above and [fig.9](#)). Significantly, but quite conversely to Gestalt terminology, Czerny called the surface ornament ‘the moving figure’ and the structure ‘the ground-melody’ or ‘the ground-harmony’.

The first full-scale use of Gestalt procedures was probably Arnold Schering’s examination of the 14th-century Italian madrigal (1911–12). In it he introduced the idea of ‘disembellishment’ (*Dekolorieren*). This involved removing groups of short note values from melodic lines and substituting fewer notes of proportionately longer value to occupy the same amount of time: ‘laying bare from within a melismatic passage the simple melodic progression’. [Fig.13a](#) shows an example of this (the reduction technique shows elements of ‘closure’ and ‘Phi phenomenon’, and is a clear example of figure–ground perception). Schering called what he uncovered ‘melodic kernels’ (*Melodiekerne*) or ‘cells’ (*Keime*), both terms being familiar from the organic music theorists of the 19th century. But in fact what he set out to reveal were medieval folksongs, since he believed that the elaborate 14th-century madrigals were really keyboard arrangements of folk tunes. Such a theory is not inconceivable: there were keyboard arrangements in the 14th century, and Schering was simply reversing the procedure known as [Paraphrase](#) whereby a melody, usually a passage of

plainsong, was embellished in one voice of a polyphonic composition in the late Middle Ages and Renaissance. The difficulty lay in verifying the results as folksongs, and Schering adopted the interesting confirmatory device of reducing two different madrigals by different composers to the same underlying melodic progression. The two madrigals had the same poetic text, and Schering's assertion was that they both presented elaborated versions of the original folk melody for these words ([fig.13b](#) and [fig.13c](#)). Schering's work provided in embryonic form the techniques for both the melodic evolutionists (Réti, Keller and Walker) and also the work of Heinrich Schenker in structural harmony.

It was one of the greatest figures of historical musicology, Guido Adler, who attempted through his book *Der Stil in der Musik* (1911) to change the nature of historical writing about music by introducing the notion of style as the central concern of the historian. As early as 1885 Adler had published a programme for the future of musicology, placing strong emphasis on analysis, arguing for its rightful place in historical inquiry. He set out a series of criteria for the examination of structure in a work, under general headings such as rhythmic features, tonality, polyphonic construction, word-setting, treatment of instruments, and performing practice. In *Der Stil in der Musik* Adler criticized his contemporaries for making history out of a string of composers' names. What was necessary, he believed, was the formulation of a terminology adequate for the description of music 'without names to prop it up'. If music could be described in this way then it would become possible to compare work with work, and thus – in the dynamic terms that Adler used – to specify what features 'link works together'.

Music history was to Adler like a self-weaving textile whose threads, of different colours, thicknesses and strengths, were features of style. Threads might discontinue, change colour, change places or merge. Thus he spoke of 'stylistic direction' (*Stilrichtung*), 'stylistic change' (*Stilwandel*), 'stylistic transfer' (*Stilübertragung*), 'stylistic hybridization' (*Stilkreuzung*), 'stylistic mixing' (*Stilmischung*) (pp.19–48). His view of art was as an organism. Everything in it could be accounted for; nothing occurred by chance (p.13):

The style of an epoch, of a school, of a composer, of a work, does not arise accidentally, as the casual outcome and manifestation of artistic will. It is, on the contrary, based on laws of becoming, of the rise and fall of organic development. Music is an organism, a plurality of single organisms which in their changing relationships and interdependencies form a totality.

Adler sharply criticized what he called the 'hero-cult' – that is, history written in terms only of leading composers: 'the edifice of style is built out of minor figures just as much as major, and all need investigation if the true picture is to appear'. (It is significant that Adler had been the prime mover in the Austrian national series of editions, *Denkmäler der Tonkunst in Österreich*, of which he was editor from 1894 to 1938; he must have been particularly conscious of the need to place lesser composers in historical perspective.) The task that he set the historian was to observe and apprehend that edifice of style in an essentially scientific manner; for 'style is the centre of the handling and comprehension of art ... it is the yardstick by which everything in the work of art is measured and judged' (p.5). He placed emphasis on 'apprehension' as the first stage: that is, a recognition of the facts purely as they are, which avoids value judgments and subjective preconceptions on the part of the historian.

Adler offered two methods of approaching this task, and it is here that his work is important for the analyst. One method is that of taking several pieces and examining them to identify what they have in common and how they differ. This is Adler's 'inductive method', by which the historian can perceive the forces that cause an established group of works to hold together; he can discover which works in a random collection are relatively close in style and which more distant; or he can trace

links between works composed in chronological succession. The other, the ‘deductive method’, is to compare a given work with surrounding works, contemporary and preceding, measuring it against them by set criteria and establishing its position within them. Such criteria are the use of motif and theme, rhythm, melody, harmony, notation and so forth. Other criteria concern the function and medium of music: sacred or secular, vocal or instrumental, lyrical or dramatic, courtly, virtuoso and so on. Adler’s book is far from a manual of stylistic analysis. It does not offer method in detail. It was a laying of foundations in which Adler sought to establish a ‘framework of laws’ (*Rahmengesetz*) by which style operates and within which research could proceed.

Adler made a particular study of the Viennese Classical style. Wilhelm Fischer too, his assistant from 1912 to 1928, completed a dissertation on the genesis of that style in 1915. Two other scholars pursued stylistic studies in scholarly fashion at this time, Ernst Bücken and Paul Mies, notably in their joint article on the foundations, methods and tasks of stylistic research into music (1922–3). Both also worked on Beethoven; indeed, Beethoven became a centre of attention for studies of personal style, with Gál’s examination of individual features in the young Beethoven (1916), Becking’s of Beethoven’s personal style (1921), Mies’s of the meaning of the sketches for an understanding of Beethoven’s style (1925), Schieder’s of the young Beethoven (1925), August Halm’s of middle-period works (in *Beethoven*, 1926) and Engelsmann’s of Beethoven’s levels of composition (1931). Other studies of personal style include Danckert’s ‘Personal types in melodic style’ (1931), later enlarged as ‘Primal symbols in melodic formation’ (1932). Becking was particularly interested in rhythm as a determinant of individuality (1928) and devised a set of graphic devices, known as ‘Becking curves’, for representing the rhythmic ‘national constants’ and ‘personal constants’: [fig.14](#) shows the curves for the 18th-century Italian-German mixture of styles represented by Handel, and for Wagner’s early style.

The most distinguished and influential example of stylistic analysis at this time was, however, Knud Jeppesen’s *The Style of Palestrina and the Dissonance*, first prepared as a doctoral dissertation in Danish in 1922, and subsequently translated into German in 1925 and English in 1927. Jeppesen provided in this book the detailed analytical procedure that Adler had left wanting. His choice of ‘inductive’ or ‘deductive’ method was conditioned by his general purpose: he saw the need for a history of dissonance treatment. He felt that modern manuals of counterpoint, based on Fux (*Gradus ad Parnassum*, 1725), lacked precisely that historical account, that ‘genetic’ growth of dissonance treatment, which would illuminate the development of musical style in time and place from the Middle Ages to the late Renaissance and from there to the end of the 18th century (pp.3ff):

Passing from an absorbing study of Gregorian music to primitive polyphonic forms, from the style of Palestrina to the commencement of dramatic music, or from Bach’s polyphony to the classical art of Vienna, would be the best manner of proceeding for recognizing immediately the essential peculiarities of the new style.

In taking Palestrina as his special study Jeppesen was starting with a ‘central’ point, and a stable one, from which he could look backwards (since Palestrina’s work was a ‘vast summary of the musical development of the preceding centuries’) and forwards. At the same time he was starting with the best-known phenomenon in the field, and investigating it against a background which was in his terms virtually uncharted. He was therefore driven to the ‘inductive’ method, with no established criteria and only the possibility of comparing case with case until such criteria began to appear.

Jeppesen himself called this method ‘empiric-descriptive’, and identified it expressly with Adler’s method. He stated it clearly (p.8):

through comparison of variants of homogeneous forms of [the] language [of music] – whether taken from contemporary or from historically separated periods – to indicate and fix common qualities, which with certainty can be supposed to possess the essential accentuations of these forms. The material thus obtained may then serve as a basis upon which to build up the laws of the language, the laws of musical evolution. These, psychologically translated, finally develop into certain regulations and directions of will – the hidden force behind these laws.

Jeppesen in this way extended Adler's inquiry from the surface of music, considered empirically, to the subconscious controls of style, considered psychologically. In so doing he enunciated the motivation for later developments in feature analysis, including computer-assisted analysis. The aspect of Jeppesen's work that makes it scientific is the fact that the analyst is not selecting and summarizing: he is presenting the entire data for each case and adducing laws from it objectively.

Jeppesen presented first an account of Palestrina's melodic style (pp.48–84) with regard to pitch contour, rhythmic flow and the width and direction of intervals. The preliminary work for this analysis must clearly have been an exhaustive search through every vocal part of Palestrina's entire output (in the Leipzig collected edition of 1862–1903) in order to count and note every interval in relation to its metrical placing. Thus he located and listed for the reader (p.55, note 3) the occurrence of major 6ths and descending minor 6ths as 'dead' intervals (i.e. between two phrases rather than during a phrase: 32 cases in all). The investigation of upward leaps in rhythmic context led to the uncovering of a subconscious law: 'on considering the style with regard to crotchets ... we meet with the astonishing fact, not previously observed, that a rule (almost without an exception) forbids the leap upward from an accentuated crotchet' (p.61). By contrast, Jeppesen listed no fewer than 35 melodic patterns in which a downward leap occurs from an accented crotchet, and charted all the places in which these patterns occur. It is in the much larger second discussion, that of dissonance treatment (pp.84–287), where he defined each dissonance in turn and discussed its degree and manner of use by Palestrina, that Jeppesen entered into historical comparison. Thus for example he considered the use of the 'portamento dissonance' (the anticipation of a note on a weak beat), stating: 'by Palestrina it was most frequently employed immediately before a syncope [i.e. syncopation] and in descending movement ... though the syncope is not an invariable condition' (pp.184ff). He then contrasted this limitation with the use by other composers, citing cases in Josquin, Obrecht, Carpentras, Cara and La Rue.

One of Adler's pupils was Ernst Kurth. Kurth's ideas were closely allied to those of the Gestalt psychologists, but also used Schopenhauer's concept of the 'Will' and Freud's of the subconscious mind. The Gestalt theorists saw three levels of aural perception: physical perception by the ear, sensory organization in the nervous system, and understanding at the psychological level. Kurth saw three levels of activity in musical creation, which he expounded as part of his theory of melody in the first part of *Grundlagen des linearen Kontrapunkts* (1917). The first of these levels is the operation of the 'Will' (which in art is unselfish and disinterested) in the form of kinetic energy (*Bewegungsenergie*); this, a continuous flow, is the living power of music; 'the origin of music ... is the will to move'. The second level is the psychological: the submerged stirrings of the unconscious mind draw on this energy to produce a 'play of tensions' (*Spiel von Spannungen*), each tug of tension describing an arc of growth and formation (*Ur-Formung* or *Erformung*). This play of tensions does not become conscious until the moment that it takes form in musical sound – the third level, the acoustic manifestation (*Erscheinungsform*). Because these three levels are activated one after the other to produce melody, the resultant line has unity and wholeness. Its shape is conceived before either notes or harmonic implications are brought into play; it is thus a 'closed progression'. This is the essence of Kurth's concept of the 'linear'. He saw it particularly at work in the music of Bach – a texture made up of lines, each of which is powered by kinetic energy and internally unified, and which make harmonic sense together only as a secondary phenomenon. This is what Kurth called 'linear counterpoint'. He evolved a concept of 'linear phase', a unit of growth and

decay, quite separate from the conventional idea of ‘phrase’ in that it did not depend on rhythmic patterning, only on proportion and contour. The motif was such a phase: unified, distinctive, not losing its identity when its pitches, intervals and durations are modified (pp.21ff, 68ff).

Notes forming a melody contain kinetic energy; notes forming a chord contain ‘potential energy’. Tonal harmony is a system of internal coherence, carrying the possibility of change, brought about by potential energy. The most powerful tension in this system is that of the leading note. In his second book, on Romantic harmony (1920), Kurth first expounded chromatic alteration as a process of placing the leading note where it would not normally occur. He distinguished between two forces at work in Romantic harmony, creating a polarization: ‘constructive’ and ‘destructive’ forces (pp.272ff). It is the cohesive forces of tonality that are constructive, and the dissolving forces of chromaticism that are destructive: alteration, the use of chords of the 7th or 9th in place of triads, and the use of chords for colouristic effects. Kurth took Wagner’s *Tristan*, and in particular the many statements of the famous ‘Tristan chord’, as the central material for this book; it contained little actual analysis, yet it offered a new perspective for handling the large-scale tonal structure of Wagner’s operas, giving insight into long-term tonal relationships despite pervading chromaticism and movement to remote key areas for long periods.

The scholar who grasped the problem of form and tonality in Wagner and exposed its ‘secret’ analytically was Alfred Lorenz. After a doctoral dissertation on form in the *Ring* (1922) and a study of the *Tristan* prelude (1922–3), he published the first of his four volumes of *Das Geheimnis der Form bei Richard Wagner* which were to analyse form in the *Ring* (1924), *Tristan* (1926), *Meistersinger* (1930) and *Parsifal* (1933). Lorenz’s work was a landmark in the history of analysis. It was the largest-scale piece of sustainedly analytical writing so far. It used graphic and tabular techniques of presentation in a thorough-going way: the ‘sine curve’ for harmonic movement, the ‘projectile curve’ for extended formal contour, the graph for modulatory scheme (see [fig.16](#) for the

graph representing the whole *Ring* cycle as a vast unified structure in D major, with lateral spacing marking 40 pages of score and each horizontal line a major and space a minor key area) and type-set diagrams for more detailed tonal movement (see [fig.15](#) for the diagram of *Das Rheingold*, which is complementary to fig.15 and shows the opera as an introduction of 748 bars in the

dominant of the dominant, followed by a massive symmetrical section of 3128 bars in D

pivoting round the relative minor, B minor).

Lorenz’s work was the confluence of all the main developments in analysis before his time. It contained ideas from the Gestalt writers; his notion of periodization and symmetry derived from Riemann; his defining of structure drew on traditional *Formenlehre*; his perception of harmonic movement came from Kurth (to whom he dedicated his *Tristan* volume). It is also built from a large body of existing writings on Wagner’s musical and dramatic structures (especially those by Hostinský, 1877; Grunsky, 1906, 1907; and von Ehrenfels, 1896, 1913) and on his leitmotifs (e.g. Mayrberger, 1881; von Wolzogen, 1876, 1880, 1882), and above all from Wagner’s own prose writings.

Lorenz saw formal construction (*Formbildung*) as created out of three primary things: harmony, rhythm and melody. He segmented the entire *Ring* cycle into periods according to key area (pp.23ff). He also analysed the distribution of leitmotifs into formal groupings: repetition forms, arch forms, refrain forms and bar forms. It is in this last area that his main contribution to music theory lies. Lorenz perceived a hierarchical structure in music, the two extremes of which are his

*kleine Rhythmik* and *grosse Rhythmik*. The second of these arises out of the first by forms being ‘raised to a higher power’ (*potenzierte Formen*). By this process, three consecutive passages of music may each be constructed in arch form (*ABA*); the third of them may be a restatement of the first and so create an arch form at a higher level. The process may be traced at more than two levels. He also described the embedding of small-scale units within forms, extending them and changing the balance, and very large-scale forms that contain small-scale forms of different sorts. By analysing formal units in this way, Lorenz sought to uncover the architectonics (*grosse Architektonik*) of very large musical structures.

In 1906 Heinrich Schenker had published his *Harmonielehre*, the first volume of his highly influential *Neue musikalische Theorien und Phantasien*. Further volumes were *Kontrapunkt* (1910, 1922) and *Der freie Satz* (1935). Schenker’s unique view of a musical composition was that works that are tonal and exhibit mastery are projections in time of a single element: the tonic triad. The projection of this triad comprises two processes: its transformation into a two-part ‘fundamental structure’ called the *Ursatz*, and the ‘composing-out’ (*Auskomponierung*), or elaboration, of the structure by one technique or more of ‘prolongation’. The *Ursatz* is made up of a linear descent to the root of the triad – the ‘fundamental line’ (*Urlinie*) – accompanied by an ‘arpeggiation’ in the bass (*Bassbrechung*), from the tonic to the dominant and back to the tonic. In the simplest form of the *Ursatz* the linear descent begins with the 3rd of the tonic triad, and each note in it is accompanied by one chord in the bass. But this is a highly abstract notion, and in practice the elaboration begins with the structure in an already articulated form, representing the ‘background’ (*Hintergrund*) of the work.

This highly developed complex of ideas emerged over the last 30 years of Schenker’s career. In his early *Harmonielehre* he had argued – citing passages from Fux, Beethoven, Chopin, Liszt and Wagner in support – that arrangements of notes that look on the surface like chords in their own right are not always essential steps (*Stufen*) in a harmonic progression, but are often merely expansions of other essential steps (see especially Eng. trans., pp.141ff, 155, 212). In this way Schenker established a distinction between ‘triads’ and ‘steps’ whereby not all of the former in a given tonal context rise to the rank of the latter. He began to represent harmonic progressions graphically on two levels (e.g. his ex.173/234), using in one instance a ‘formula’ to show short-term triadic movement over longer-term harmonic steps (p.244), in which I–V:I–V is shown as numerator and I as denominator. On the larger scale he saw the key areas to which a composition modulated as either ‘established’, in which case they functioned as ‘steps’ at a higher level of form, or ‘unestablished’, in which case they served only to elaborate other key areas.

Another principle that emerged early in Schenker’s development as a theorist was a view of composition as the elaboration of a basic contrapuntal design. In *Ein Beitrag zur Ornamentik* (1903) he had illustrated by reference to form in a sonata of C.P.E. Bach the idea of ‘group construction’ (*Gruppenbildung*): the diversifying of a single tonal unit of structure by thematic and motivic variety, by interior harmonic movement, by variety of rhythmic placing and patterning, and by contrast of dynamic levels (pp.11ff). Schenker’s scholarly activities – in particular his concern for authenticity in editing and performance, and his respect for the authority of autograph scores and authorized editions – had led him to this study of ornamentation in Bach, Haydn, Mozart, Beethoven and others. Its significance for his development as an analyst was that he was later to develop a technique of stripping away layers of ornamentation in the process of revealing the ultimate structure of a piece. In his ‘Erläuterungsausgabe’ of four of Beethoven’s last five piano sonatas (1913–21 – that of op.106 did not appear because its autograph could not be found) he achieved a balance between the analytical and the textual sides of his work. In the last volume of the set, on op.101, he developed the idea of reduction by carrying it through successive stages.

(Fig.17 shows the stages laid out one above the other.) Schenker intended this example as a tracing of the creative process step by step, not as an analysis; thus he spoke not of ‘reduction’ but of the reverse, *Diminution* (i.e. embellishment). Nonetheless, and although Schenker’s final line (a) here

does not take the form of his eventual *Urlinie*, the way in which the notes *e' g' –a'–b' –a'* *g' –a'* in the right hand of bars 1–4 are reduced to (*e'*)–*g' –a' g' –a'* and ultimately to *g' –a'* shows the technique of his later analyses already formed.

In 1925 Schenker produced the first issue of a yearbook, *Das Meisterwerk in der Musik*, which was to run to only three issues (1925, 1926, 1930). It contained ten analytical studies, of works by J.S. Bach, Domenico Scarlatti, Beethoven and Chopin, accompanied by Schenker’s new type of graphic analyses, together with a long essay on ‘Die Kunst der Improvisation’ (itself containing important analyses of keyboard works by C.P.E. Bach and Handel), a polemic on editorial practice, ‘Weg mit dem Phrasierungsbogen’ (‘Away with the phrasing slur’), and a study-in-progress of the concept of *Urlinie*. This was not the first journal that Schenker had produced: he had published ten issues of *Der Tonwille* between 1921 and 1924. (Both journals contained material exclusively by Schenker.) An important analytical product of *Der Tonwille* was the study of Beethoven’s Symphony no.5, produced in instalments and later issued separately (1925). The first two issues of the journal had contained preliminary studies of the *Urlinie* idea together with analyses using the so-called *Urlinie-Tafeln* – graphic analyses showing the fundamental line.

The *Urlinie-Tafel* as developed at this stage was usually a presentation of a piece in full or partly reduced, with normal use of note values and complete with time signature and the original barring (numbered for reference). This was overlaid with auxiliary analytical symbols: horizontal and sloping square brackets over the staff to show the movement of the fundamental line; note heads printed large to indicate structural importance; curved lines like phrasing or bowing marks to indicate important progressions (often also labelled *Quintzug*, *Quartzug* etc.); dotted curves to indicate the longer-term structural retention of a particular pitch (or transfer to another octave) despite intervening pitches; and the fundamental harmonic steps (*Stufen*), symbolized below the staff by roman numerals, with conventional bass figuring to show the overlying harmonies. In some cases Schenker added a parallel staff above the *Urlinie-Tafel*: this carried his reduction of the piece to bare harmonic essentials – already termed *Ursatz* – and partly abandoned the durational significance of note symbols in favour of a valuation whereby greater duration denoted greater structural importance. Fig.18 illustrates all these features and many others (the *Urlinie-Tafel* showing the Largo from Bach’s Violin Sonata no.3 BWV1005 bar-for-bar but in skeletal form): bar 7, and bar 17 a 5th lower, show how the fundamental line (*f'–e'–d'*) moves from the top line of the texture to the bottom and back, and how the last of its notes is not actually sounded but only implied (hence the parentheses). For this particular piece, Schenker chose also to give a three-layer graph (fig.19) of which the bottom layer is a partly reduced form of the piece, the middle one an intermediate stage of reduction, and the top one a complete reduction corresponding to the upper parallel staff of the *Urlinie-Tafel*. These two graphs are accompanied by 11 pages of closely reasoned text with further music examples.

The main achievements of the yearbook were a long and lucid essay on Mozart’s Symphony no.40 in G minor (vol.ii) and the massive analysis of Beethoven’s ‘Eroica’ Symphony (vol.iii). In these analyses the layers (*Schichten*) are identified as ‘foreground’, ‘middleground’ and ‘background’; horizontal brackets are abandoned in preference to the beaming together of structural notes, and many other graphic devices are adopted.

Such was the sophistication of Schenker's graphs during the last five years of his life that he was able to discard verbal commentary altogether. His *Fünf Urlinie-Tafeln* (1932) are self-sufficient graphings of works by Bach, Haydn and Chopin. By this time the *Ursatz* had taken its final form as a two-part counterpoint that accomplished what Schenker saw as lying at the heart of his theory – a projection of the triad into the dimension of time. Its upper voice, the *Urlinie*, was a melodic progression originating from a note of the triad and descending scalewise to the tonic (3–2–1, extensible to 5–4–3–2–1, or rarely 8–7–6–5–4–3–2–1); its lower voice, the *Bassbrechung*, was an 'arpeggiation' from the tonic note to the dominant and back again. This meant that the basic structure of any tonal piece of music was diatonic, and all modulations were considered as 'prolongations' of diatonic harmonic steps.

[Fig.20](#) shows the background and middleground (the *Ursatz* and three further layers) of Schenker's analysis of Chopin's Etude in C minor op.10 no.12, as published in *Fünf Urlinie-Tafeln*. Each of these layers is set out on a single staff and makes use of notational symbols (though with unconventional meanings), together with slurs, brackets and parentheses. The layers are aligned vertically, so that any element of the composition can be traced back to its conceptual origin in the *Ursatz*. Roman numerals are used for harmonic steps (from I to VII), capped arabic numerals for melodic degrees of the scale (1 2 3 etc.), ordinary arabic numerals for bar numbers and bass figuring; words and auxiliary symbols are also used.

The first layer shows an articulation of the *Ursatz* into two parts: the first and second elements are presented before the statement is broken off; it is then recommenced and concluded. This transformation is known as 'interruption' (*Unterbrechung*), and the point of breaking off is marked by the word *Teiler* ('divider' – often indicated by two short vertical lines just above the staff). In layer 2 this interruption is multiplied to three occurrences.

In layers 2 and 3 void noteheads are used to indicate notes of greater structural importance, black noteheads notes of less. The void noteheads are linked together by large beams, pointing up the fundamental two-part form of the composition. Black noteheads are linked together by slur marks, which pick out detailed melodic progressions, and these progressions are often labelled verbally (e.g. *Terzzug abwärts*, '3rd-progression downwards', *Sext-Brechung-aufwärts*, 'arpeggiation through a 6th upwards'). They are also linked by beams to void notes. Dotted slur marks indicate not progression but recurrence of a structural note after the intervention of other notes (thus the recurrence of *d''* in the first half of layer 2). Black notes with tails (quaver symbols) are used to

point up small-scale events of special interest (such as the neighbour-note patterns *g'-f* and *b♭'''-c'''* in layer 3).

The 'foreground' (a term synonymous with *Urlinie-Tafel* in this publication) contains the elements of the contrapuntal design that are immediately perceptible, eliminating only ornamentation and note repetition from the surface of the work. In this analysis it is presented separately, occupying far more lateral space than the other layers and thus not aligned with them ([fig.20b](#), showing only bars 1–18). The harmonic indications at the bottom of [fig.20b](#) show that what is considered as I–IV–V in the foreground becomes entirely I in the middleground. Moreover, Schenker's analytical method completely rejects the conventional idea of modulation: key changes are viewed as harmonic

elaborations of diatonic harmonies. Thus the moves to B minor, D minor, C minor and F minor around bar 30 of the étude are seen ultimately as prolongations of C minor harmony.

The fullest statement of Schenker's approach was his posthumously published *Der freie Satz*, but the scope of his thought cannot be understood from this treatise alone. His analyses were designed primarily for the performer and were always pedagogical in function. They encouraged a new way of hearing music – long-range listening – and, by the time of his final graphic method, attempted to lead the reader stage by stage from the familiar text of a work through to an understanding of it as a complex organic whole.

In 1932 Schoenberg wrote: 'For nearly 20 years I have been collecting material, ideas and sketches, for an all-inclusive textbook of composition'. The project was never completed, and might best be regarded as a work-in-progress that Schoenberg was never likely to relinquish. (His early *Harmonielehre*, 1911, was brought to a conclusion only by dictation with the help of a stenographer.) But such was the importance of Schoenberg's musical thought in the history of 20th-century composition that even in fragmentary form, edited by Severine Neff and others as *Zusammenhang, Kontrapunkt, Instrumentation, Formenlehre* (Eng. trans., 1994) and *Der musikalische Gedanke und die Logik, Technik und Kunst seiner Darstellung* (Eng. trans., 1995), these writings seemed likely to exert a considerable influence on analysis – particularly on analysis of his own music and that of his pupils. The *Harmonielehre* too is of significant interest to analysts as a source of ideas applicable to music composed by Schoenberg, Berg and Webern in their early careers; Schoenberg's essays, a number of them on technical subjects (twice collected under the title *Style and Idea*, 1950, 1975), have also been used in this way.

This is symptomatic of a tendency for analysis of modern music to use approaches 'authenticated' by more or less direct association with the composer in question. Other examples include Hindemith, whose writings are discussed below, Messiaen, Babbitt, Xenakis, Boulez and Stockhausen: the music of all these can be analysed with ready citation of their own technical writings. Three factors that can be identified behind the growth of this phenomenon are: the difficulties of lay comprehension of modern styles, the function of analysis as elucidation that had been established by around 1910, and the propensity of composers to write about their own music in ways that were newly amenable to appropriation by analysts – historians and critics having long used such sources for their own purposes. In some cases composers also wrote more generally conceived theoretical or analytical texts, though no major composer of the 20th century, not even Schoenberg, has approached Rameau in status as a music theorist.

Schoenberg must indeed be reckoned eclectic and somewhat conservative as a theorist; but he wrote from conviction in trying to set out at least some of the impulses that drove him as a composer. It is ironic, then, that he was comparatively reticent about his most notable compositional innovation – 12-note serial technique – and about the particulars of his preceding atonal style. Seeing his own music as a continuation of the Austro-German tradition, he chose instead to write about broader topics in a way that adhered to the 19th-century view of music as organic. Construction thus begins with the motif, the motif must by its nature be repeated, repetition requires variation. But in Schoenberg's view the comprehensibility of musical form implied more than the aspect of subdivision which enables the mind to grasp the whole through units: it also implied logic and coherence, without which such units remain disconnected. It was on these latter questions that he was at his most original. By the mid-1920s his instinct for unity and intellectual synthesis had led him to the principle of the musical Idea (*Gedanke*) as the foundation of all aspects of a work, including form, counterpoint and the presentation of material. This notion of the Idea remained difficult to grasp – it seems intended to give concrete expression to an organic-psychological image of the seed of creative thought, but also not to be identified consistently with a specific type of musical feature – and analysts were likely to conclude that Schoenberg had not helped them to address the question of where, in any particular work, one might look for the Idea itself.

Nonetheless, a number of concepts that emerged in Schoenberg's teaching and writings as he worked towards this position were taken up by others and used fruitfully in analysis. Among these was 'liquidation', whereby a melodic unit gradually loses its characteristic features until only a residue remains. Schoenberg's concept of 'developing variation' (*entwickelnde Variation*) was applied by Walter Frisch (1984) to the music of Brahms – whose innovations in musical language had been a lifelong preoccupation of Schoenberg. Developing variation was the principle whereby the structural ingredients of themes (motifs, phrases) were reiterated only in varied forms, with their internal elements (intervals, rhythms, harmony, contour) undergoing modifications at each restatement. Schoenberg's more rarely used 'basic shape' (*Grundgestalt*) was taken up by David Epstein (1979) in seeking a synthesis of Schenkerian and Schoenbergian ideas (*see also* [Grundgestalt](#)).

Compared with the ambition of his earlier writings, the pedagogical texts dating from Schoenberg's American years are deliberately limited in scope. Of these, only *Models for Beginners in Composition* (1942) was issued in his lifetime; *Structural Functions of Harmony* (1954) appeared shortly after his death. Later, two sets of notes from the late 1930s, designed for teaching purposes, were assembled and published: *Preliminary Exercises in Counterpoint* (1963, dating from c1936) and *Fundamentals of Musical Composition* (1967, dating from between 1937 and 1948). The latter is a small manual of form; though intended for composers, it rests on analytical exemplification and is to some extent a manual of analysis, drawing particularly on examples from Beethoven's piano sonatas. The most influential aspect of the book, as disseminated earlier through his teaching, is his atomic splitting of the motif into 'element' or 'feature'. The 'element' is often a single interval underlying a pattern of notes, and itself undergoes repetition, transposition, inversion, internal multiplication, enlargement, contraction and all the other processes to which the motif is subject. His reduction of the first theme of Brahms's Symphony no.4 to a succession of 3rds is perhaps the most famous example in the book ([fig.21](#)).

In his *Unterweisung im Tonsatz* of 1937, another composer, Hindemith, believed himself to have laid down the basis of a *lingua franca* for modern composition, 'proceeding from the firm foundation of the laws of nature'. Like Schenker, Hindemith believed in the force of tonality and the primacy of the triad; but his theory is far more systematically acoustical. To Hindemith, if any one of the notes of the chromatic octave scale be taken, then the other 11 notes can be ranged in descending order of relationship to it. This order he called 'Series 1'. Adopting the principle of inversion (by which, for example, minor 7th = major 2nd), he determined an order for intervals based on combination-tone curves in increasing complexity. This produced 'Series 2', of intervals in descending order of value with respect to a given note. This series acknowledges no point at which consonance ends and dissonance begins. From this Hindemith developed a system of chordal analysis, which first allocates to any chord a root – always present in the chord, unlike the roots of Rameau's harmonic system – and then measures the intensity of that chord. Hindemith classified chords containing three to six notes into separate groups and subgroups in terms of their harmonic intensity. Using these groups, a composer might put together a succession of chords in whatever 'harmonic crescendo and decrescendo' he wished. Such an increase and decrease of intensity he called a 'harmonic fluctuation' (a concept closely related to Kurth's idea of *Spannung*); and he devised a graphic means of demonstrating this beneath the staff (see [fig.22](#), which shows the group and subgroup of each chord as well as the graphic fluctuation). Hindemith proceeded from there to determine harmonic relationships on a larger scale by measuring the progression of prevailing roots, the 'degree-progression', against Series 1.

Although *Unterweisung im Tonsatz* was intended as a constructional tool for composers, and stressed the realms of harmony that Hindemith felt were not adequately covered by conventional

harmonic theory, its theories were meant to apply equally to the harmony of the past and thus to function as a means of interpreting and analysing the music of any period. (In all this it differed significantly from a treatise such as Messiaen's, 1944, which was concerned solely to explain his own music.) Hindemith supplied, at the end of the first volume, a set of analyses of music ranging from plainchant to music by himself and Schoenberg. As an analytical method his system is like Schenker's in being based on a theory of melody and harmony with no separate theory of rhythm. It is unlike it in that there are no structural levels: all notes at the surface can be related to the tonal centre, and modulation is an accepted tonal procedure which is not reduced out of existence.

Between 1935 and 1939 the programme notes that Donald Francis Tovey had been writing for the Reid Concert Series in Edinburgh since the mid-1910s (though some go back to 1902) were published together in six volumes, reminiscent of Kretzschmar's *Führer durch den Konzertsaal*. The material was arranged by genre, and within that in chronological order, the final volume containing supplementary essays and a glossary. As a whole, the volumes made a substantial analysis book of the 18th- and 19th-century orchestral and choral repertory. To this Tovey added in 1944 a further volume on chamber music (some of whose essays go back to 1900) and a set of analyses of Beethoven's piano sonatas (1948). These books, and his articles for the *Encyclopaedia Britannica* written between 1906 and 1910, were a strong influence on subsequent British analytical and critical writing. They are notable for their pungent prose and avoidance of dogma. They are true examples of English empiricism, rejecting the analyst's formal models as 'nonsensical', and equally rejecting the idea of organic unity as '*a priori* fancies'. All such theories were 'fallacies' (1948, pp.298, 3, 8ff). Even the terms 'first subject' and 'second subject' were discarded: the latter had 'worked ... havoc in our notions of sonata form and sonata themes' (1935, p.2); and 'binary' and 'ternary' 'not only miss the essential grounds of classification, but are thoroughly misleading in all that they imply'. He deprecated any terminology that 'assumes a map-like or space-like view of music instead of a time-like view' (1935, pp.10ff).

Tovey saw himself as dealing only with the 'facts'. It was the successive aspect of description that was most important to him, since he saw analysis as tracing the same process in time that the 'naive listener' experienced. He thus proceeded 'bar-by-bar', 'phrase-by-phrase'; he called this method 'précis-writing', and attributed it to Hubert Parry. It is a judicious mixture of descriptive, naturalistic writing and technical information, illustrated with frequent musical examples and allocating letter-symbols to figures and themes. But here again Tovey was critical of others: 'we shall do well to beware of the exclusively subjective methods of criticism ... which may be but mildly caricatured as consisting in sitting in front of a work of art, feeling our pulses, and noting our symptoms'.

Tovey's method was a blend of the hermeneutic and the formalistic which implicitly stated that there are things in music beyond explanation. At the same time he was always concerned with audibility – perceptibility without recourse to orthodoxy. If a feature was not observable by the innocent ear of the non-expert hearer, then it was not worth observing. The 'naive listener already possesses the right musical sensations. These are as direct as the colours of a sunset or the tastes of a dinner. Connoisseurship comes from experience, not from verbal explanations' (1949, p.271). However, that Tovey dissented from the abstract theory of his age is not to be taken as signifying radically forward-looking thought. His idealized reader is not so very far from the amateur music-lover who was the addressee of much mid-19th-century analysis. It is clear that the 'naive listener' and Tovey's dislike of theorizing are counterparts within a single approach.

Tovey had little impact in continental Europe or the USA, but after 1970 underwent a revaluation among certain American scholars, notably Charles Rosen (1971, 1980) and Joseph Kerman (1975–

6, 1985). For the latter, in his championing of a species of musicology that fuses the objectivity of the historian with the personal experience of the critic, Tovey was to become in some measure prototypical.

## 5. 1945–70.

In the years after World War II two highly influential lines of intellectual thought came to impinge on musical theory. To some extent both were approaches to phenomena – methodologies – rather than fields of study in their own right. The first was linguistics, founded as a modern science by Ferdinand de Saussure about the turn of the 20th century; this began to influence musical theory in the 1930s and 40s before making a great impact in the 50s and 60s in conjunction with the closely related approaches of structuralism and semiology. The second was cybernetics and information theory, which as mechanistic views of the world began life at the end of the 40s with the work of Norbert Wiener (*Cybernetics*, 1948), and Claude Shannon and Warren Weaver (*The Mathematical Theory of Communication*, 1949).

Linguistics examines social communication through natural language, seeking to uncover the rules by which a given language operates, the deeper rules by which language as a general phenomenon operates, and the processes by which individuals intuitively learn the complex rules of their own language. It took important strides forward with the work of three circles of linguistics scholars: that in Prague, including Roman Jakobson and N.S. Trubetzkoy; that in Copenhagen, including Louis Hjelmslev; and that of American scholars including Zellig Harris and Noam Chomsky. The kindred approaches of semiology and structuralism both tend to reduce all kinds of non-linguistic social communication to the state of natural language, semiology by treating all the ways in which human beings signal to each other (by the clothes they wear, the gestures they make, the food they eat and so on) as ‘codes’ containing ‘messages’ which can be encoded and decoded by those familiar with that code, structuralism by seeing all social phenomena as ‘wholes’ (or ‘structures’) whose elements are governed by well-defined laws (See [Semiotics](#) and [Structuralism and post-structuralism](#)).

Cybernetics sees all activities, human, animal and machine, in terms of control systems. Thus the nervous system of a human and the electronic system of a computer and the servo system of a complex machine plant are seen as analogous processes, with inputs and outputs, with information feeding back to modify the operation of the system, and so forth. Information theory measures the capacity of systems to receive, process, store and transmit information. Information is thought of as a choice of one message from a set of possible messages; some messages come more frequently than others, thus setting up different probabilities for the arrival of any one message. Information theory reduces any existing range of choices to a network of two-way or ‘binary’ choices. When a highly probable choice is presented within a message, that choice is said to contain ‘low information’; and conversely when an unlikely choice is presented then that choice contains ‘high information’. In other words, information is generated by non-confirmation of expectation. Information theory spread rapidly in the early 1950s to fields of application as widely differing as genetics, neuro-physiology, sociology and philosophy, and soon to aesthetics, where it came upon certain difficulties. For in the arts what information theory calls ‘redundancy’ (namely, confirmation of expectation, non-information) plays a special role in creating form and structure.

The first musical contribution in either of the new fields of thought was probably an address to the first International Congress of Phonetic Sciences in Amsterdam as early as 1932 by the musicologist, style analyst and ethnomusicologist Gustav Becking (see §4 above). It was phonology (the science of distinguishing between elements in a stream of vocal linguistic sound and the apprehension of the rules by which these sounds are linked together), as developed by Trubetzkoy,

that seemed relevant to music. And in particular it was the scholars of non-Western music, with their rapidly developing scientific approach to their material, who first saw its relevance. Becking, in discussing Serbo-Croat popular epic, pointed to a certain parallel between basic problems in phonology and those in musicology, illustrating this by the different constructions that people of different world cultures place on a given single musical sound. Such people operate within different musical systems, and Becking tried to set up a typology of systems, 'unidimensional', 'bidimensional', 'tridimensional' and 'quadridimensional'. The great linguistics scholar Roman Jakobson took up Becking's point in the same year, stressing that the particular property of music, as of poetry, is that its conventions are wholly phonological in operation, and do not concern etymology or vocabulary. He urged musical analysts to study the model of phonology.

13 years later Milos Weingart explored the analogies between musical and language phrase structure, with reference to Czech, and in 1949 Antonín Sychra examined folksong by means of linguistic method. Further significant developments in the linguistic analysis of music included a brief proposal by Bruno Nettl (1958) and the first contribution by an influential figure in this field, Nicolas Ruwet, in which he sought to define the aural problems of listening to integral serial music by reference to phonology and the need for a 'margin of error' between the phonemes in a phonemic system (1959). Discussions of the application of information theory appeared by such writers as Bean (1961), Meyer-Eppler (1962), Hiller (1964), Winkel (1964) and Brincker (1970).

In 1956, in a volume of essays dedicated to Jakobson, George P. Springer provided a comparison of language and music that surveyed the progress of linguistic analysis in music. Springer discussed the distinction between repetition (i.e. identity) and difference as a binary opposition, and the modification that the idea of variation brings to this, concluding that music (1956, p.510):

is subject to conventional rules of combination and distribution, and *ipso facto*, of probability. ... Moreover, music turns out to be not only a stochastic process (producing a 'sequence of symbols ... according to certain probabilities') but the special kind of stochastic process known as the Markov chain (where 'probabilities depend on previous events').

Springer's description summarizes the basic principle of information-theory analysis, which views music as a linear process (see [Information theory](#)). The process is governed by a syntax, but the syntax is stated in terms of the probability that any one element will occur next in the line rather than in terms of grammatical laws. Music is treated by analogy with the transmission of a message from sender to receiver, but neither that nor the word 'information' should give the impression that meaning and communication are taken in the hermeneutic sense. A message is a chain of discrete sense-units, which in music are taken to be 'events' in a composition: usually isolated notes, chords or simultaneities. Any one event in the chain arouses a prediction of its following event. If the prediction is confirmed then no information is imparted; if it is 'non-confirmed' then information is imparted. But events in music form patterns, and the total amount of information contained in a pattern can be calculated by a formula and expressed as an 'index'.

As early as 1956 R.C. Pinkerton and Abraham Moles produced articles relating information theory, as presented by Shannon and Weaver, to music, and in 1958 and 1959 a spate of material was issued on the subject: two basic presentations by David Kraehenbuehl and Edgar Coons, an article by Joseph Youngblood, a monograph by W. Fucks, and an extended book on the broader application of the theory to aesthetic perception by Moles that devotes a chapter to perception of 'sonic material'. Coons and Kraehenbuehl (1958) offered two indices, one of articulateness, which they described as measuring 'how neatly the conditions of "unity" and "variety" have been arranged so that the force of neither is dulled', and one of hierarchy, which measured 'how successfully a "variety" of events has been arranged to leave an impression of "unit"' (p.150). Their method, in other words, measured the phenomena of unity and variety, which are so important in analysis, in

an objective and tangible way rather than a subjective and vague way. It could do this for a single structure, or for a work with respect to the known terms of reference of that work's style.

In his first important book (1956) the aesthetician Leonard B. Meyer came close to information theory in his view of styles as culturally conditioned systems of expectations, and of musical meaning as deriving from the arousal, frustration and fulfilment of such expectations. Meyer was still working within the Gestalt concepts of *Prägnanz* and closure. In the following year, however, he introduced the fundamentals of information theory into his argument and revised his definition of 'meaning' in music, fashioning three stages of what he called 'embodied meaning': the 'hypothetical meaning' before a sound-pattern has been heard, the 'evident meaning' when the sound-pattern has become a concrete event, which initiates a stage of 'revaluation' comparable with 'feedback' in control systems, and the 'determinate meaning' that arises later in the total experience. Meyer dealt, as Moles had previously done, with the concept of 'noise' whereby information is distorted. The maturity of Meyer's thought is shown in his subsequent essay (1961), which subjected the view of music as information to the actual situation of music frequently reheard.

The use of the computer in musical analysis may be traced from 1949, when Bernard Bronson, editor of the melodies of the Childe ballads, analysed range, metre, modality, phrase structure, refrain pattern, melodic outline, anacrusis, cadence and final of folksongs, using data on punched cards. The measuring of such quantities and the production of sets of statistics was the facility most readily available from early computers. There was no essential difference between a human doing these operations by hand and a computer carrying them out electronically, but the computer had the advantages of speed, accuracy and exact memory. Software systems with biases towards the demands of musical material were created in the early 1960s. An important article by Selleck and Bakeman (1965) explained two strategies for analysing melodic structures: one through probabilities, which derived from information theory, the other through comparing and sorting melodic units, which derived from linguistics. The journal *Computers and the Humanities* (1966–) maintained a director of projects in progress, enabling scholars to be aware of other work in their field and encouraging collaboration. A collection of essays on electronic data processing in music, published under the editorship of Heckmann (1967), presented a cross-section of work, including 'languages' for representing music, strategies of computational analysis, sample analyses and articles raising more general issues.

The most significant study of mathematics and music at this time was Xenakis's treatise *Musiques formelles* (1963). Although his exposition of probabilities, stochastics, Markov chains and the theory of games resorts to analysis mostly in order to trace the compositional means in his own works, the framework that Xenakis set out places the art of music on a more universal plane, opening it up to investigation according to precise laws. Pouring scorn on existing cybernetic and linguistic analyses of music as elementary and pseudo-objective, he proposed 'a world of sound-masses, vast groups of sound-events, clouds, and galaxies governed by new characteristics such as density, degree of order, and rate of change' in place of traditional 'linear' musical thought. Pierre Schaeffer's *Traité des objets musicaux* (1966) was a dissertation on the sonorous material from which music is made: an attempt to present a full typology of that material, and to discover its general laws. Schaeffer's treatise is underpinned with acoustics and with philosophy and is centred on 'l'expérience musicale'; but it is much more tangible in its formulation of a 'solfège des objets musicaux' which is in practice a system of classification by seven criteria: mass, dynamic, harmonic timbre, melodic profile, mass profile, grain and inflection (*allure*).

The postwar years were a period of revival, development and dissemination for the teachings of Schenker. Much of this was undertaken by former pupils of his who had emigrated to the USA. A Schenkerian tradition of teaching was established at the Mannes College of Music in New York, and knowledge of Schenkerian approaches was widened through the publication of important books by Adele Katz (1945) and Felix Salzer (1952). Although Schenker's most active pupils (and their pupils in turn) remained devoted to his insight, many of them had original ideas to contribute to the developing tradition. As Schenker's own writings remained largely unavailable in English translation, however, it was not always evident other than to specialists that Salzer's *Structural Hearing* in particular contained significant departures from Schenker's views on the nature of music and significant developments of his analytical techniques, notably in their application to early music and 20th-century music. In the process of gradual assimilation alongside other contemporary developments in analysis, Schenker's organicist language was to a large extent replaced by words that expressed musical relationships in terms of structure. The result, far from diminishing the impact of Schenker's ideas, served to establish him as a decisive influence. While it was left to later generations to re-examine Schenker's original writings in the context of the history of ideas, there was a new flourishing of practical analyses either along directly post-Schenkerian lines or significantly influenced by Schenkerian thought (e.g. Forte, 1955).

Schenkerian analytical work continued in strength during the 1960s, and an occasional publication under the title *Music Forum* was founded by Salzer and William J. Mitchell in 1967 to present extended analyses of which some in each issue would use Schenkerian techniques. The series had particular value because of the attempts made in it to extend Schenker's techniques to music outside the domain for which it was created: to medieval and Renaissance music (Salzer, 1967 and Bergquist, 1967) and to contemporary music. Among the non-Schenkerian material in *Music Forum* is Lewis Lockwood's masterly study of the autograph of Beethoven's Cello Sonata op.69, a rare blend of rigorous historical musicology and analytical method (1970).

During the first postwar decades a new approach to organic motivic analysis was being forged, which influenced analytical writing in Britain but found little sympathy elsewhere in Europe or in the USA. It was first expounded by Rudolph Réti in two books (1951, 1958), of which the earlier, *The Thematic Process in Music*, is his classic exposition. But before that, Réti, who had lived in Vienna most of his life until emigrating to the USA in the 1930s, had worked intensively on analyses of sonatas by Beethoven between 1944 and 1948 in an attempt to grasp Beethoven's compositional process. These analyses were published in 1967, ten years after his death.

Réti started from the two-dimensional view of formal construction that was implied in Schoenberg's *Fundamentals*: motivic expansion, and division and demarcation. Réti reconciled these two dimensions. His method in itself produces, by reduction of all the thematic material of a work to its abiding common elements, a series of 'cells' underlying the work's motivic material. These are small-scale melodic contours comprising two or three intervals and in origin non-rhythmic. Each cell can undergo transposition and inversion. Réti saw specific sequences of such cells recurring as a 'thematic pattern' in each of the movements of a large-scale work, and creating a symmetry or unity between movements which he considered a conscious act of composition. Such a pattern supplies its own natural thematic grouping which, in Beethoven's work, often takes the place of strict textbook form, becoming 'the skeleton of all themes in all movements; it determines the modulations, the figurations and the bridges, and above all, it provides an outline for the overall architecture' (1967, p.94). Thus the two prime cells of the 'Pathétique' Sonata of Beethoven are as shown in fig.23a; Réti has given them separate functions by designating them 'prime cell' and 'concluding motiv' respectively. Fig.23b shows where the cells are located in the opening bars of the first movement. The motifs (still without rhythm) which can be derived from these cells may be

set out in a table (fig.23c). An entire movement can then be set out, in non-rhythmic form with its melodic shapes grouped to reveal the motif forms, as a 'thematic song' (fig.23d, the slow movement).

*The Thematic Process in Music* extended these ideas, expressing more fully Réti's view of music as a linear compositional process. The composer starts not with a theoretical scheme but with a motif that has arisen in his mind, which he allows to grow by constant transformation – by transposition, inversion, reiteration, paraphrase, variation. Its growth is evolutionary. In time he makes a significant modification to the motif or picks up a detail from his elaborative material, and this becomes the focus. A work is thus seen as 'a musical improvisation ... around a few motifs'. The book also dealt with key relationships, presenting a diversity of examples and attempting a historical survey of the thematic process. His second book, *Tonality, Atonality, Pantonality*, expounded what he saw as a new kind of tonality 'which does not appear on the surface but is created by the ear singling out hidden relationships between various points of a melodic or contrapuntal web' (p.65). At the heart of this idea was the 'moving tonic'. Réti supplied a wide range of contemporary analytical examples in support of his thesis.

Two years before this last book of Réti, Hans Keller presented the first of a succession of short, pithy articles in which he put forward the principles of 'functional analysis'. 'Functional analysis postulates that contrasts are but different aspects of a single basic idea, a background unity' (1956–7, p.15). Keller saw his analytical work as the purely objective isolating of background unities, and strongly refuted charges of subjectivity. Criticizing Toveyan analysis as 'anatomical', and thus concerned with 'dissection', he proposed a method that would attempt 'to elucidate the unifying functions of the living organism that is a musical work of art' (*MR*, xviii, 1957, p.203). Whereas Réti's view of music was as a single process passing from beginning to end, Keller saw music as a double process: a linear development – argument would be a better word, for Keller's view was that music communicates and that the listener 'understands' it – but one that is controlled by a single cell-like 'basic idea'.

The singularity of the basic idea introduces an element of projection into the compositional process. Keller spoke of musical thought as two-dimensional: that is, as having both a 'foreground' and a 'suppressed background', the latter too obvious to be stated by the composer yet vitally important for the analyst to reconstruct in order that the unity of what followed might be demonstrated. The background proceeds by the law of identity, the foreground by the law of contradiction. Thus music has the quality, not open to logical thought, that something may both be and not be something. In context, Keller's view of a piece of music (a piece, as with Schenker, that exhibits mastery) is of unity within diversity: of constant 'latent' presence of a single basic idea, articulated in time as a succession of 'manifest' contrasts on the surface of the music. To identify the pervasive, all-embracing idea is the first task of the analyst. All the principal thematic material must be brought together, and by reduction the highest common factor within that material must be isolated – a small-scale idea, a germ-cell, whose internal elements are reproduced at the surface in close proximity, and which recurs again and again. The second task is to account for the continuity of the foreground. This involves not only explaining how each manifestation of the basic idea is derived from the original but also why that particular derivation occurs at that point. Analysis elucidates the functions of a piece as if it were a living organism. As with Réti, the basic idea is usually a melodic outline, a succession of intervals out of time. Its manifestation is thus a rhythmicization. The foreground derivations may involve transposition, inversion, retrogression or 'interversion' (the reordering of the elements of the idea). Keller, however, was less open than Réti to the criticism of neglecting rhythmic aspects of a structure, for his method recognized fundamental rhythmic patterns, and thus augmentation and diminution are further types of derivation. Also very important

in foreground continuity were the separation of two phrases latently in antecedent–consequent relationship – called ‘postponed complementation’ by Keller – and the reversing of the order of two such phrases.

Early presentation of functional analysis was by verbal text with music examples. Such examples showed thematic material with labelled motifs and derhythmicized reductions. In 1957 Keller took an even bolder step than Schenker had when abandoning the word for the graph: Keller abandoned word and graph for sound, by preparing an analytical score which demonstrated what he saw as the background unities of Mozart’s String Quartet in D minor K421/417*b* entirely in musical sound. Keller’s method involved composing a score, for the same forces as the work under analysis, in which passages of the original are interspersed with aural demonstrations of the links between themes. He claimed for this the advantages that it avoided the transition between musical and verbal thought, that the through-composition of the analytical score led along purely musical lines, and that the subjectiveness of verbal description was eliminated. Several such analyses were prepared and broadcast in Britain and on the Continent, but none of Keller’s scores was published until much later (1985, 1995).

The work of Réti and Keller was furthered in the 1960s through two books by Alan Walker. In the first of these (1962) he argued for the validity of mirror forms, and introduced the Freudian elements of repression and preconscious association into the theory of motivic unity. Walker’s second book, on musical criticism (1966), offers much analytical material, demonstrating the ‘all-pervading background forces’ that operate in musical creation, and furthering the Freudian theory. The book contains a useful exposition of ‘historical background’, a concept fundamental to Keller’s work. A different association of motivic analysis and psychology lay behind Robert Donington’s Jungian interpretation of Wagner’s *Ring* (1963).

There was a revival of hermeneutic theory in *The Language of Music* by Deryck Cooke (1959), which argued for the materials of music as a quite specific vocabulary of intervallic contours with the connotations of emotional states. Cooke argued that these connotations arise not by convention but from the inherent forces of the intervals that make up the contours: forces of tension and direction. His analyses were thus apparently based on natural phenomena, translating a musical expression of psychological states and events (presumably those of the composer) into a verbal expression. Cooke’s presentation of tonal intervallic patterns as underlying formulae that were deployed across a wide range of musical styles was independent of Albert B. Lord’s study (1960) of Yugoslav epic, which proceeded from the concept of oral composition originated by the classical scholar Milman Parry (1902–35; see *The Making of Homeric Verse*, 1971). Lord investigated the mechanism by which a singer spontaneously creates or recreates a song through the ‘theme’ and the ‘formula’, and in particular through the capacity of formulae to group into ‘systems’ which provide the singer with alternatives to match different metrical situations in the poetry that he is creating. This idea, though scarcely applied to music by Lord, was taken up by Leo Treitler (1974) for the analysis of plainchant.

Towards the end of the period there was much interest in style analysis, as shown in Richard Crocker’s *A History of Musical Style* (1966), Alan Lomax’s discussion of ‘cantometrics’ (1968) and Jan LaRue’s *Guidelines for Style Analysis* (1970). The last two studies are examples of category analysis, a method that starts with the recognition that music is too complex a phenomenon to be comprehended without some way of breaking down its material into elements – not so much its temporal elements (phrase, motif etc.), though these may be part of the ‘breaking-down’ process – as those facets that are constantly present: the ‘parameters’. What the analyst requires is, in LaRue’s words, ‘a set of categories that are satisfactorily distinct, yet without undue branching and

proliferation' (1970, p.10). Each category is then given a scale of measurement, and it is this measuring that is the critical operation in the analysis. Construction and cohesion are but two of the terms of reference, along with techniques of instrumentation and vocal writing, usages of consonance and dissonance, of metre and rhythm, of texture and such like, which characterize a style or repertory. LaRue's system was designed with the 18th-century instrumental repertory in mind, and Lomax's for singing style in the folk music of word cultures.

In abstract, category analysis establishes a two-dimensional grid, a 'matrix', one dimension comprising categories, the other the scale of measurement. Lomax's 'behavioral grid' is made up of 37 categories and 13 degrees. It operates on a single level, ultimately locating any singing style somewhere along a spectrum of style whose extremes are 'highly individualized and group-dominating performance' and 'highly cohesive, group-involving performance' (p.16). LaRue's system has only five categories (four 'contributing elements' and a fifth 'combining element') and three degrees (the Aristotelian 'rule of three': two extremes and a mean). In practice, however, the system contains hierarchies and is consequently much more complex to operate. The five categories are: Sound, Harmony, Melody, Rhythm and Growth. But sound is subdivided into 'Timbre', 'Dynamics', 'Texture and Fabric'; harmony into 'Color' and 'Tension'; melody into 'Range', 'Motion', 'Patterns' and so on. Each subcategory has its own set of degrees of measurement: thus melodic patterns are measured as Rising, Falling, Level, Waveform, Sawtooth or Undulating; and the number of degrees varies from subcategory to subcategory. Moreover, each category is considered at each of three levels of magnification (LaRue's 'dimensions': Large, Middle and Small). The resulting analytical grid is really three-dimensional, with categories and subcategories as one dimension, the three levels of structure as the second, and the variable degrees of measurement as the third. However, a finished analysis is displayed as a table, with categories as rows and dimensions as columns: each box in the table contains (if relevant) a verbal description that does not limit itself to quantification but also supplies information about context and function. LaRue stressed the need for large sampling of any given repertory as a frame of reference for judging distinctiveness, and appended to his analytical system a method of extracting the essential and relevant information from analyses of individual works so that comparative analysis may be performed without drowning in data.

## 6. Since 1970.

The period after 1970 saw analysis emerge as a recognized discipline within musical studies, comprising a number of approaches and methods. This was reflected in a spate of new journals, some of them edited by graduate students in America, and in the formation of new societies of music theory. *Theory and Practice*, the organ of two student societies in New York State, began in 1975; so too did *In Theory Only*, journal of the Michigan Music Theory Society; and *Indiana Theory Review* followed them in 1978. All three contained analytical articles. Most important among the new organizations was the Society for Music Theory, founded in 1977, and its journal, *Music Theory Spectrum*, launched in 1979. *Music Analysis*, founded from King's College, London, in 1982 by Jonathan Dunsby, was the first periodical (at least since the days of Schenker) to be devoted specifically to analytical matters, representing a wide range of theories and approaches; and early issues of *Contemporary Music Review*, launched from Nottingham in 1984, featured largely analysis of contemporary music. A series of monographs, *Studies in Musical Genesis and Structure*, connecting source- and sketch-studies with analysis, was launched in 1985 with Lewis Lockwood as editor. In Germany the periodical *Musiktheorie* was inaugurated in 1986. A regular series of British conferences on analysis began in London in 1984 and was taken over by the newly formed Society for Music Analysis in the early 1990s.

Initially, the circumscription of analysis through its methods brought new levels of theoretical rigour and operational refinement in the wake of virtually autonomous development. By the mid-1980s, two methods had achieved the widest currency and were seen respectively as core systems for the analysis of tonal and atonal music. These were (1) codified Schenkerian techniques, and (2) techniques using pitch-class set theory. (A sharp distinction was thus drawn between tonal and atonal analysis.) A little later, as those engaged in analysis sought to define their discipline in relation to broader currents in contemporary thought, and those outside analysis correspondingly sought to understand its purposes and outputs, the perceived self-sufficiency of method-driven analysis diminished dramatically. Analysis in the late 1990s was seen as a critical activity, drawing on established ways of writing that came in part from its historical accumulation of methods, but with a significant shift from the model of forensic examination towards the construction of interpretations.

Many developments in the period can be understood against the context of three broad lines of inquiry that were followed in relation to Schenkerian analysis. One, reflecting a widespread belief in the potential of methodical analysis to offer insight into music of virtually any kind, involved the application of extended kinds of Schenkerian analysis to musical repertoires that had not been Schenker's own concern, including music composed around the turn of the 20th century, early music, popular music and non-Western music. Another, reflecting a school of thought that valued formalism in both theory and method (and which considered analysis as the practical application of theory), saw a number of scholars seeking to rationalize and codify Schenker's approach into a rigorous combination of music theory and analytical method. A third line of development, mainly occurring towards the end of the period and reflecting the growth of a new musical criticism, saw studies that treated Schenker's work as a body of critical writing situated in the cultural and philosophical network of its time, and examined the reinterpretation of its language and ideas in the decades following World War II.

Pitch-class set theory arose from the desire of composers and theorists to find a way of identifying any combination of evenly tempered pitches without invoking the bias towards local pitch centres implied by tonal terminology (see [Set](#)). In mathematical set theory, which had its origin in the work of Georg Cantor between 1874 and 1897, the fundamental concept is that of membership. A 'set' is made up of the 'elements' that are members of that set. The set may contain 'subsets' all of whose elements are members of the set itself. Where several sets exist, certain relationships can apply among them: relationships of equivalence (in which one set can be reduced to another by some simple procedure), intersection (in which sets have certain elements in common), union (in which sets are joined together), complementation (in which sets have no elements in common and together make up all the elements of some larger order, often called the 'universal set') and so forth.

Aspects of set theory entered the theory of musical composition with J.M. Hauer's theory of tropes (1925), and are evident in the writings of René Leibowitz, Josef Rufer, George Perle, George Rochberg (1955, 1959) and Pierre Boulez (1964, chap.2; 1966, part ii). The proper formulation of a set theory of music was the work of Milton Babbitt (1955, 1960, 1961, 1972), Donald Martino, David Lewin and John Rothgeb (*JMT*, iii–v, x, xi). But while Babbitt's work, using particularly the mathematical concept of the group, dealt with harmony and with the functions of melodic and rhythmic configurations in 12-note music, and also with the interaction of components over longer spans of time, it belonged to the realm of compositional theory rather than analysis.

The most significant analytical contribution was made by Allen Forte (1964, 1965, 1972–3, 1973). Forte established a numerical notation for musical pitches by disregarding the octave in which they were sounded and treating enharmonically equivalent pitches as identical. All Cs (together with all

B $\sharp$ s and D $\flat$ s) were assigned to pitch class 0, all C $\sharp$ s and D $\flat$ s to pitch class 1, and so on to pitch class 11 (all B $\flat$ s and C $\flat$ s). He reduced the number of possible collections of pitch classes to manageable proportions by classifying sets as identical if they could be reduced to the same 'prime form' by transposition and/or inversion, and established a system of labelling by which any prime form, and thus by extension any set, could be identified. These labels had two main elements, the first of which (the cardinal number) was simply the number of pitch classes in the set. The second element (the ordinal number) was, strictly speaking, arbitrary – it simply referred the user of the system to a list of prime forms published by Forte (1973) – but was also to some extent based on an assessment of the intervals that arose within the set (i.e. among its constituent elements). In a few cases, distinct types of set could by such assessment be observed to possess an identical 'interval-class content'; such sets were said to be 'Z-related', and 'Z' was incorporated into the names of both set classes. Examples of set class names include 3–1, 4–Z15, 4–Z29 and 9–1: of these, 4–Z15 and 4–Z29 are Z-related, and 3–1 and 9–1 are complementary, which is to say that for each set of type 3–1 there is a set of type 9–1 which includes exactly the pitch classes that the 3–1 set omits from the 12 available.

Analysis using set classes had to reckon with the fact that the theory of pitch class sets deals almost exclusively with sets of from two to 12 elements, so that a musical work containing perhaps many hundreds or thousands of notes had to be divided up into small units amenable to the categorization and comparison that the theory allowed. This 'segmentation' process remained dependent on informal musical judgment, despite receiving some attention from theorists such as William Benjamin (1979) and Christopher Hasty (1981). By contrast, the abstract relations among sets and set classes were the subject of considerable theoretical examination, for example by Robert Morris (1979–80, 1987), John Rahn (1980), Charles Lord (1981) and Eric Isaacson (1990). It is impossible, however, to observe a water-tight distinction between the processes of musical segmentation and the assessment of pitch class set relations, nor can it be maintained that one is firmly the province of analysis and the other of theory.

Forte extended basic pitch class set theory to include the association of sets within 'set-complexes' (K) and 'subcomplexes' (Kh) – a 'complex' being an array of all the sets that are related by inclusion and/or complementation to any one given central class of sets (the 'nexus set'). This established a type of organization that made possible the elucidation of atonal coherence in large-scale musical structures (Forte, 1978, on Stravinsky's *The Rite of Spring*; Janet Schmalfeldt, 1983, on Berg's *Wozzeck*; James Baker, 1986, on sonatas and orchestral works by Scriabin). A further extension of the theory was made by Forte in 1988 through a theory of pitch class set genera, which was based on a classification of all sets with four or more elements according to their trichordal subsets. 12 genera of varying sizes were thus constituted, with several large set classes being assigned to two or more genera. Each genus was linked informally with descriptions such as 'chromatic', 'diatonic' and 'atonal'. The associated analytical procedure involved making a segmentation of a musical passage and tabulating those set classes to which it could thus be reduced, and then noting the genus (or genera) to which each set class in the analysis belonged and calculating the statistical significance of each genus's representation in the sample. On this basis, weakly represented genera that were superfluous to the overall generic profile of the analysis were omitted. This typically left a generic profile based in quantified proportions on two or three genera, in a way that had been sensitive to the analytical context.

Fig.24 is taken from Forte's analysis (1981) of the first of Schoenberg's Three Piano Pieces op.11. This uses a diagrammatic notation in parallel with a passage in score: the segmentation into pitch class sets is shown by enclosing pitch class letter-names in rectangles, circles and ovals, the result leaving space for set labels, bar numbers and other items. It can be seen that the analysis proposes

three levels of structure in bars 1–8. In level (*a*), six of the hexachords (i.e. six-note sets) which are to be of great importance for the structure of the piece are identified (6–Z10/Z39, 6–16, 6–21, 6–Z42 and 6–Z44) along with several of the pentachords, which together with their seven-note complements are destined to be significant. Level (*b*) shows new ways of segmenting the musical fabric; level (*c*) shows in particular some of the trichords (three-note sets) which play on the surface of the music. The recurrent hexachords and pentachords are seen as the basic harmonic vocabulary of the piece, whereas the trichords are the foreground through which the analysis must penetrate. Among the hexachords, the importance given in the analysis to the Z-related pair 6–Z19/44 illustrates the interdependence of pitch class set theory, segmentation and critical analysis. One pitch class set of type 6–Z44 [10, 11, 0, 3, 4, 7] corresponds to those letters of Schoenberg's surname which may be interpreted as letter-names for musical pitches (SCHBEG, extracted from 'Schönberg'). Although this set class is represented only once in level (*a*) and the segmentation would be no less complete without it, Forte found significance in its appearance in a number of Schoenberg's early works (1978). Elsewhere, the Z-relation allows him to assert the presence of Schoenberg's 'signature' through sets of type 6–Z19 as well.

Other writers identified a number of specific pitch class collections as being of particular importance in early 20th-century music. The most prominent of these was the 'octatonic' collection – comprising, for example, the pitch classes C, D $\flat$ , E $\flat$ , E $\natural$ , F $\sharp$ , G, A and B $\flat$  (two further transpositions of the collection are available) – which had been discussed in analyses of music by Skryabin and Stravinsky by Perle (1962) and Arthur Berger (1963–4). The role of octatonic collections in the music of Debussy, Webern, Bartók and Skryabin was further discussed by Forte (1991, 1994), Richard Cohn (1991) and Wai-Ling Cheong (1993). The fullest investigation was carried out by Pieter van den Toorn (1977, 1983), who showed in exhaustive detail how interactions between this collection and the diatonic collection could be charted in much of Stravinsky's music, taken from all the commonly recognized stylistic periods of the composer's career. In doing so, van den Toorn indicated that the octatonic collection could be articulated into a network of characteristic harmonic and melodic features, including triads, dominant 7th chords and scale fragments (fig.25).

Van den Toorn was not the only writer who developed an analytical method specifically in order to address the work of one 20th-century composer. Ernő Lendvai's use of a theory of 'axis tonality' (1955, 1983) to analyse the mature style of Bartók projected a Reimannian conception of complementary tonic, dominant and subdominant functions on to a fourfold regular division of the octave. This produced three axes corresponding to the three tonal functions, which among them gave functional labels to all 12 pitch classes. Although the same regular division of the octave served also to link triads at intervals of a minor 3rd in the Stravinsky analyses of Berger and van den Toorn, such points of convergence were not central to the work of any of these writers. Of greater importance was a sustainable belief in the authenticity of the analytical method to the composer's stated or unstated priorities. For example, the critical scrutiny that was directed at Lendvai's assertion that the formal proportions of many of Bartók's works were in correspondence with the Golden Section (a mathematical ratio whereby a twofold division of a line is made such that the ratio of the larger part to the whole is the same as the ratio of the smaller part to the larger part: [see Golden number](#)) was concerned not so much with its analytical integrity as with its biographical value. In the absence of unambiguous documentary evidence that Bartók himself acknowledged this principle, speculation was directed at the possibility that a composer might follow it subconsciously. Lendvai's account of the characteristic harmonic and melodic intervals of Bartók's music in terms of the [Fibonacci series](#) (a sequence of numbers in which the ratio between adjacent terms tends towards the Golden Section, and which was famously associated by D'Arcy

Wentworth Thomson with naturally occurring phenomena in plant growth) was clearly intended to play into such speculation.

This renewed concern of analysis with compositional method reflected a general expectation that analysis of 20th-century modernist works would assist in their broader comprehension. Appeals to biographical data and the composers' own writings frequently underpinned analyses of works by Schoenberg, Berg, Webern, Hindemith, Messiaen, Boulez and others who had given clear indications of their own technical procedures. Without necessarily showing greater technical rigour, these analyses achieved greater acceptance in the early part of the period than, for example, Roy Howat's assertion (1983) of Golden Section proportions in Debussy's works. Later in the period analyses that were not dependent on biography for their credibility came to be more widely valued. Among these were studies of Debussy by Richard Parks (1989), Bartók by Paul Wilson (1992) and Berg by Dave Headlam (1996). Other notable analytical studies of individual 20th-century composers included those on Britten by Peter Evans (1979), Berg by Douglas Jarman (1979), Bartók by Elliott Antokoletz (1984), Hindemith by David Neumeyer (1986), Varèse by Jonathan Bernard (1987) and Webern by Kathryn Bailey (1991). Bernard's graphic notation (see also 1981, 1983, 1987) was a notable individual innovation in presentation whose similarity to display formats routinely available in MIDI sequencing software by the mid-1990s suggested one possible route to future computer-assisted analysis.

Robert Morgan (1976) and James Baker (1983, 1986) were prominent in developing Schenkerian principles to reflect the changes in harmony and form evident in progressive music composed during the mid-19th century through to the turn of the 20th. These extensions of the technique found wider acceptance than had earlier comparable analyses of Stravinsky, Schoenberg and Bartók by Roy Travis (1959, 1965–6) and of Wagner by William Mitchell (1967). A number of writers including Craig Ayrey (1982), Anthony Pople (1983, 1989), Joseph Straus (1987), James Baker (1990) and Edward Pearsall tackled the question of how Schenkerian chord prolongation might be said to occur in post-tonal or atonal music, but little consensus was reached on this topic. Another approach to music of the early 20th century which seemed to have characteristics of both tonality and atonality (according to the common understanding of those terms) was to present linked analyses based on the application of both Schenkerian and pitch class set methods to the same musical passages. There was generally little attempt at a hybridization of analytical method or of underlying theory: the aim was rather to provide demonstration of the co-existence of tonal and atonal features through established methods. Notable examples of such writing were studies of music by Schoenberg and Berg by Forte (1978, 1985) and Janet Schmalfeldt (1991; see also Schmalfeldt, 1983).

Applications of adapted Schenkerian principles to early music, for example to Lassus by Mitchell and Isaac by Saul Novack (both 1970), and to Monteverdi by Salzer (1983), were no less contentious theoretically than were Schenkerian analyses of post-tonal music; they also failed to achieve ready acceptance among scholars and musicians with a lively historical interest in this repertory (see the discussion by Mark Everist, 1992). A number of later studies responded to this difficulty of assimilation by examining voice-leading in early music less rigidly in line with Schenkerian archetypes and more evenhandedly in juxtaposition with technical matters familiar from the history of theory and composition – such as cadence formation, modality, compositional process and text structure. Examples included work by Daniel Leech-Wilkinson and Sarah Fuller on Machaut (1984, 1987, 1992), and by Cristle Collins Judd on Josquin (1985, 1992). These writers were perhaps more successful in achieving a conceptual synthesis than were many of those engaged concurrently in analysis of the post-tonal repertory, though this was not necessarily recognized at the time.

Before these developments, early-music analysis that was independent in spirit had included studies in ‘proportional analysis’ by Marianne Henze on Ockeghem (1968), Ernest Sanders on Philippe de Vitry (1975) and Brian Trowell on Dunstaple (1978–9). In a more occult vein, proportions in the music of Obrecht (Marcus van Crevel, 1959, 1964) and Bach (Ulrich Siegele, 1978) were said to be related to special ‘cabalistic’ numbers (whereby, for instance, 888 is associated with the Greek name for ‘Jesus’) or to numbers derived from simpler alphabetical summations (e.g. B–A–C–H = 2+1+3+8 = 14), whose presence in a piece was determined by counting metric pulses. The credibility of these types of analysis depended on either or both of two factors: the frequency and consistency with which a composer appeared to apply Golden Sections and other numerological devices over a wide range of his work; and any external circumstances that enabled one to infer a composer’s interest in such matters, such as the composer’s knowledge of and interest in mathematics, and his awareness of other art forms based on numerical principles (*see* [Numbers and music](#)).

A similar pattern of developments may be observed in analysis of popular and non-Western musics during the period. Applications of Schenkerian techniques to popular music, including analyses of Gershwin by Steven Gilbert (1995) and Arthur Maisel (1990), of Beatles songs by Walter Everett (1987) and of American popular ballads by Forte (1995), began in the late 1990s to be absorbed into the broader study of music in popular culture. The close musical readings in Allan F. Moore’s monograph on the Beatles’ *Sgt. Pepper* album (1997) combined Schenker-style graphs of tonal and melodic frameworks with discussion of recorded sonorities, tempo relationships and, above all, the interaction of music with text (*see also* [Popular music](#)). The interpretation of text–music relations, and of music in relation to drama, image and narrative, had by this time become central in studies of opera and film music: it was in this vein that the analysis of music in popular culture seemed likely to develop, rather than through further accommodation with techniques derived from the analysis of Western concert music.

The eurocentrism of Schenkerian analysis did not cause it to be excluded totally from studies of non-Western music (*see* the discussion by Jonathan Stock, 1993), but semiological approaches (*see* below; *see also* [Semiotics](#)) were more prominent in analytical writing on these musics. This was in line both with the origins of musical semiotics and with the anthropological methodologies that underpinned scholarly inquiry into the meaning and practices of music in other cultures. Influential authors in this broad field included Simha Arom (1985; Eng. trans., 1991; *see also* Nattiez, 1993) and Kofi Agawu (*see also* [Ethnomusicology](#)).

Explicit codification of Schenker’s principles went beyond the earlier objective of bringing his work to the fuller attention of English-speaking musicians, something which was largely accomplished by the translation of *Der freie Satz* by the Schenker pupil Ernst Oster as *Free Composition* (1979). Together with subsequent translations, including those of *Kontrapunkt* (1987) and *Das Meisterwerk in der Musik* (1994, 1996, 1997), this largely displaced the need for texts such as Forte’s presentation (1959) of Schenker’s approach as a conception of musical structure, which had been instrumental in drawing the Austrian’s work into the discipline of analysis as practised and understood by professional scholars in the English-speaking world, particularly the USA. The demands of music theory pedagogy, however, led to a need for textbooks in Schenkerian analysis which was initially met by those of Forte and Gilbert (1982) and David Neumeyer and Susan Tepping (1992). Examples of the use of Schenkerian techniques in analysis were too numerous to be usefully cited here. Among recurring concerns of such analysis were large-scale parallels across sonata-form movements made evident at a middleground analytical level, often involving voice-exchanges and/or the enharmonic reinterpretation of chromatic pitches. Examples were to be found

among the writings of Eric Wen (1982), Carl Schachter (1983), David Beach (1993), and Roger Kamien and Naphtali Wagner (1997).

A second kind of codification of Schenker's work may be distinguished, more far-reaching than the first, in which theorists sought explicitly to refine and reinterpret Schenkerian principles along scientific lines into an explicit and rigorous body of theoretical constructs and analytical practices. Two such reinterpretations were undertaken by Gregory Proctor and Herbert Lee Riggins (1988) and Richard Littlefield and David Neumeyer (1992); an earlier, less explicit reformulation was given by Jonathan Dunsby (1980). All of these were apparently independent of the computer-based reformulations of Schenkerian concepts and procedures undertaken in the 1960s and 70s by Michael Kassler (1967) and Stephen Smoliar (1976–7).

Schenkerian thought was also one catalyst for the broad theory, based on analogies between linguistics and analysis, of Fred Lerdahl and Ray Jackendoff (1977, 1981, 1983). Under Noam Chomsky's influence, questions such as 'Does music have a deep structure?' and 'Do universals exist in music?' had fascinated musicians in the 70s. The series of lectures given under the title 'The Unanswered Question' by Leonard Bernstein in 1973, later televised, and published in 1976, raised these in a challenging fashion. In a series of articles beginning in 1977 and culminating in *A Generative Theory of Tonal Music* (1983), Lerdahl and Jackendoff, composer and linguist respectively, evolved a theory whose central purpose was to elucidate the organization that the listener imposes mentally on the physical signals of tonal music. Using principally music by Bach, Haydn, Mozart and Beethoven as their 'idiom', they compiled a grammar that 'models the listener's connection between the presented musical surface of a piece and the structure he attributes to that piece. Such a grammar comprises a system of rules that assigns analyses to pieces'. The system was thus like Chomsky's grammar in that it was 'mentalist', that is, concerned with mental processes rather than with end-products, and in that it was at heart an analytic procedure in which the generative function of the theory was a system for deriving or testing analyses.

The theory of Lerdahl and Jackendoff had an outward resemblance to Chomsky's in that it was a set of rules operating on four components. These four were 'dimensions' of musical structure, and all were hierarchical: 'grouping structure'; 'metrical structure'; 'time-span reduction' (reduction in the Schenkerian sense, but based equally on pitch and rhythmic criteria); and 'prolongational reduction', which took account of the intuitive sense of tension and relaxation in music. Two types of rule governed each category: 'well-formedness rules' which controlled the making of possible structural descriptions of pieces; and 'preference rules' which determined which of a number of possible descriptions corresponded to a listener's preferences.

Three graphic conventions were adopted for demonstrating the operation of these rules. Grouping structure was shown as horizontal braces, and metrical structure as lines of dots, both below the staff and reiterated vertically to express hierarchy; reduction was shown as branching trees above the staff. Fig.26 gives a small-scale example, which is a local time-span reduction. For prolongational reduction, the three diagrams acquire solid and void circles at the nodes to indicate the type of prolongation that the branching represented; reductive levels were displayed on separate staves below, adopting Schenkerian conventions for solid and void noteheads and solid and dotted phrase-marks. Fig.27 shows the *St Anthony Chorale* analysed in this way (the original is already slightly reduced).

Lerdahl and Jackendoff claimed that much of their grammar was 'idiom-independent' (i.e. it held good whatever the musical style), and thus that certain of their rules constituted 'universals' of musical perception and could be taken to represent innate aspects of musical cognition. Their work

was published at a time when points of contact between analysis and the cognitive sciences were gaining significant ground. The journal *Music Perception*, founded in 1983, included in its early issues a number of articles that reflected this, such as a group of investigations into hierarchical structures in music by Eugene Narmour, Allan Keiler, and Lerdahl and Jackendoff (all 1983–4), studies of synaesthesia in Skryabin and Messiaen by Peacock (1985) and Bernard (1986), and of the perceptibility of polytonality and serial organization by Krumhansl and Schmuckler (1986), Sandell and Sergeant (1987).

Many researchers in musical cognition took the results of musical analysis as a point of departure. Their focus was on such questions as whether the structures typically proposed by analysis were perceptible by others. To some extent this was a consequence of the difficulty of finding a proper role, in such empirical enquiry, for one of the characteristic aspects of analysis, namely the analyst's personal reflection on a musical work. For example, the large team of specialists built up in the late 1970s by Boulez at IRCAM in Paris sought to place acoustical and psychoacoustical research at the service of composers: in doing so it encouraged the analysis of the materials of music rather than of musical works themselves. Ironically, this general difficulty may have contributed to the development of an enhanced critical dimension in analysis, both by subjecting typical products of structural analysis to direct scrutiny and by making it seem that if analysis were transformed into a cognitive science it might surrender its capacity to foster new interpretations of pieces of music. This did not prevent the cognitive sciences from making a significant impact on musical theory, however, as was shown, in addition to the theory of Lerdahl and Jackendoff, by Narmour's exceptionally detailed theory of melodic structure (1992), and Robert Gjerdingen's application of schema theory to phrase patterns in classical music (1986, 1988). The impact of these theories on analytical practice, however, was limited, whereas the Lerdahl–Jackendoff theory could be regarded as sufficiently predictive to warrant empirical investigation of the validity of its rules, for example by Irène Deliège (1987).

Empirical analysis of music in performance, by contrast, preserved a role for traditional score-based analysis as an agent of mediation in the interpretation of data concerning tiny nuances of articulation. Analysis of data gathered from performances was typically concerned with details of timing. In the work of Eric Clarke and Bruno Repp there was a strong methodological component deriving from psychology or artificial intelligence (see [Psychology of music, §IV](#), and [Computers and music, §III](#)). Other studies, for example by Nicholas Cook (1987), David Epstein (1995) and John Rink (1995), undertook a comparative assessment of data from different performances of a work in the light of basic musical analyses, which were often themselves developed further through a flexible analytical response to priorities observable in coherent performances. Although there was perhaps inevitably an implication that some performances studied were preferable to others, writing of this kind could be seen as distinct from discussions that gave principal consideration to the practical value analysis might have for performers seeking to develop an interpretation (notably Edward Cone, 1968, 1985, and Wallace Berry, 1989).

The relationship during this period between analysis and musical semiotics reflected the concern with analytical method, and later the suspicion of structural methods and structuralism generally, that characterized the trajectory of analysis as a whole (see also [Semiotics](#); the terms 'semiotics' and 'semiology' draw on different academic traditions but are used interchangeably). The foundations of musical semiotics were laid in a series of articles by the professor of linguistics at the University of Paris at Vincennes, Nicolas Ruwet. Ruwet's principle of 'distributional analysis' (1966, 1972) was predicated on a view of music as a stream of sounding elements governed by rules of 'distribution': that is, of ways in which the elements associate with or complement or mutually exclude each other. Its aim was to state these rules as 'adequately' as possible for any given passage

of music, or work or group of works; to formulate, in other words, a syntax for the music. Its method was to break the stream of music into component units (or ‘unities’ – i.e. units that either could not be further subdivided or did not need to be because their sub-units never occur independently). All possible units were compared with all other possible units; when an identity was found, the contexts of the two occurrences were examined for identity. From this comparative analysis emerged a list of all ‘distinctive units’, an account of the distribution of each, and a grouping into units distributed in identical or related ways; and ultimately a restatement of the stream of music in terms of these units and the laws that govern them. The success of this exercise lay not so much in the quality of the finished analysis as in the fact that it had been produced by an exact and verifiable procedure.

Ruwet’s analysis triggered a dispute among semiologists as to whether in such a mechanized procedure the analysis should begin with musical units of large proportions and work towards a microscopic finished analysis, or begin with a microscopic segmentation and gradually construct the larger formal units by the recognition of equivalence between phrases that were distinguished only by differences of detail. The immediate dispute was won by the second school of thought, and the Montreal-based scholar Jean-Jacques Nattiez (1975) aroused remarkable interest with intensive analyses that proceeded from small-scale segmentation. Despite the variety of Nattiez’s means of presentation (which included the tree-structure diagram, the lexicon of items and the table of distributions), and despite the apparent limitation of distributional analysis to monophonic music, or at any rate to a single melodic line, the distributional principle was for a while adopted as if it were an analytical method to be set alongside Schenkerian and set-based methods. The comparison of uninterpreted ‘unities’ was seen as a productive strategy in the analysis of otherwise intractable modern scores (e.g. Nattiez’s analysis of Varèse’s *Density 21.5*, 1975; Eng. trans., 1982; fig.28) and in music whose interpretation seemed prey to ambiguities. Among the subsequent products of this line of work were a full-scale analytical study of Berio’s *Sinfonia* by David Osmond-Smith (1985) and Nattiez’s study of the 1976 Bayreuth performance and production of Wagner’s *Ring* cycle (1983; see also 1985).

Nattiez’s work followed a branch of semiotics that proposed a partition of the semiological space into three levels: the ‘poietic’ level, which concerned the relations between the score and the composer (or performer, if the object of study was a performance); the ‘esthetic’ level, which concerned the relations between the score (or other musical object) and its interpreters; and between these two the ‘neutral level’ (*niveau neutre*), a supposedly uninterpreted domain within which distributional analysis was to take place (see Molino, 1975; Eng. trans., 1990). The neutral level was soon acknowledged as problematic, however, since even the most basic division of an object into ‘unities’ demanded some rudimentary understanding, and this implied that semiosis had taken place. Once the neutral level had been revealed as a methodological convenience it was clear that the concerns of semiology, properly understood, were not so easily to be brought into conjunction with the practice of analysis. Nattiez’s later writings (e.g. 1985, 1990) addressed this difficult relationship with responsibility; others such as Simha Arom (1969), David Lidov (1975), Raymond Monelle (1992) and Eero Tarasti developed musical semiotics along more secure and conventional semiological lines. But the encounter with the directly analytical semiotics of Ruwet and Nattiez served to encourage analysts including Agawu (1991) and Robert Samuels (1995) to develop wide-ranging arguments that assisted in broadening the perspectives of the discipline: the former presented a rich synthesis of viewpoints on the Viennese Classical style, and the latter an analysis of Mahler’s Sixth Symphony that dealt equally in close motivic analysis and the work’s wider cultural resonances.

The semiological focus of these writings notwithstanding, both Agawu and Samuels readily incorporated Schenkerian analyses in their work, thereby reflecting the dominating impact of Schenker's ideas on professional analysts. Some writers, however, exhibited a concern that these ideas had been transmuted in the course of being assimilated into a mainstream of analytical practice. Returning to Schenker's own writings and re-reading them in the context of his own time, they drew attention to considerable disparities that had thus arisen, although their criticisms were often directed against earlier interpreters of Schenker rather than against their own contemporaries. Prominent among these writers were William Rothstein (1986) and Robert Snarrenberg (1994).

The rise of such criticism reflected the growth of analysis into an academic discipline with sufficient maturity and self-awareness to question its own assumptions and practices. The early part of the period had seen the publication of analysis symposia, notably in the *Journal of Music Theory*, in which musical works were discussed by two or more authors using contrasting analytical approaches. A collection of these symposia, through which Schenkerian analyses of pieces by Mozart, Schubert, Beethoven and Brahms were contrasted (by implication favourably) with analyses that followed a variety of other methods, appeared under the editorship of Maury Yeston in 1977. By around 1980, however, this practice had largely fallen away, leaving Schenkerian analysis and pitch class set methods supremely prominent, with the additional consequence that repertoires central to the development of those methods were taken as points of reference in the discussion of other musics.

It was at this time that an influential attack on the discipline by Joseph Kerman (1980) advised musical scholars 'how to get out' of analysis. Perhaps the most substantive of Kerman's observations were that analysis tended to concentrate on 'masterworks' and, concomitantly, that it took the aesthetic value of its musical objects of study as a given. In his view this discouraged the exercise of a properly critical faculty that was the first duty of a musicologist. The new florescence of critical writing encouraged by Kerman's wider commentary on musicological disciplines (see Kerman, 1985) did not have a great impact on the practice of analysis until it addressed issues of theory. When it did so it brought post-structuralist critical theory to the attention of musical scholars at a time when the influence of semiology was receding. Derridean thought centred on ideas of deconstruction was powerful in undermining the *de facto* definition of analysis as a constellation of methods among which a mere two methods were overwhelmingly prominent.

Deconstruction wilfully evaded linguistic definition, being presented in the writings of its adherents such as Jacques Derrida and Paul de Man as a deliberately method-free and ruthlessly opportunistic approach to literary texts (see [Deconstruction](#)). Its *modus operandi* was to observe internal contradictions in linguistic usage, and other peculiarities within the text, whose consequences could be pursued so as to reveal underlying assumptions or motivations – broadly speaking, ideologies. It also managed to offer a sustained critique of structuralism in all its guises. This allowed the musical scholar Alan Street, who wrote influentially of 'superior myths' and 'dogmatic allegories' (1989), to attack one of the touchstones of structural analysis: the principle of unity. David Montgomery (1992) addressed 'organicism' in similar terms. Perhaps as a result of such criticism, structural analysis in the 1990s was wary of organicism and often spoke of 'coherence' rather than 'unity'. At the same time, writers who sought to apply deconstruction to music still found it easier to deconstruct analytical and critical texts about music than to address musical texts directly.

One line of literary critical practice with immediate potential for application to music was narratology (see [Narratology, narrativity](#)), which sought to interpret individual literary examples of narrative against archetypal qualities and structures of narrative. Anthony Newcomb addressed instrumental works by Schumann and Mahler in this way (1983–4, 1992). His approach was open to

the criticism that it simply revisited structural analysis under a new agenda, mapping narrative characteristics on to musical structures. Seen more positively in this light, however, it could be said to have provided a precedent for such potentially far-reaching analytical insights as the new interpretation of form-building processes in Sibelius's Fifth Symphony put forward by James Hepokoski (1993). A different relationship between structural analysis and literary criticism was pursued influentially by Lawrence Kramer (e.g. 1990, 1992–3). Working frequently with texted music, Kramer proclaimed the value of a hermeneutic approach, seeking 'hermeneutic windows ... through which the discourse of our understanding can pass' (1990, p.6). The range of reference in his interpretations was remarkable, and included psychoanalytical, feminist and other gender-related modes of criticism. Kramer made use of structural analysis, for example Schenker's analysis of Haydn's 'Representation of Chaos' (from *Das Meisterwerk*, ii, in Kramer, 1992–3), together with analyses of his own. It is perhaps revealing that frequently in his writings a 'hermeneutic window' is to be found between structural analysis of the music and literary or cultural analysis of the text (or of another overt representational meaning of the music). In this sense Kramer's work, like Newcomb's, revisits a long-standing concern, in this case about the relationship between music and text, or more broadly between the musical and the extra-musical. Another author whose insights lay at this boundary was Carolyn Abbate, who developed a musical analogue of the concept of a narrative voice (1991). Much of Abbate's work centred on 19th-century opera, which was an important focus for scholars seeking to combine structural analysis with textual interpretation, such as Warren Darcy (1993, 1994) (*see also* [Criticism, §III](#)).

Joseph Straus (1990) and Kevin Korsyn were among analysts who made direct use of the literary critic Harold Bloom's theory of the 'anxiety of influence' in comparing musical works written by composers of different generations. Korsyn (1991) measured Brahms's Romance op.118 no.5 against Chopin's Berceuse op.57 through a close comparison of musical detail and correspondences of design, concluding that 'Brahms incorporates Chopin's text into his own, but ... then breaks with [it], resisting influence, choosing himself rather than the precursor' (p.57). Straus's examination of compositions by Bartók, Berg, Schoenberg, Stravinsky and Webern maintained that tonal allusions observable in them were traces of an inescapable past that these composers had nonetheless mastered, and argued firmly that the musical coherence of such works should be addressed through atonal, serial or other post-tonal analytical techniques.

Another important development during the 1980s and 90s was a reconsideration of the history of analysis, notably by Ian Bent (1984, 1994, 1996). In particular, Bent identified precedents for the critical-analytical hermeneutics of the 90s across a wide variety of 19th-century writings on music, not all of which had previously been considered analytical in nature or intention. A number of other scholars, such as Alastair Williams (1997), found a different impetus towards an analytical criticism that exposed ideologies, while dealing rigorously with musical detail, in the writings of Theodor W. Adorno.

Derridean deconstruction presented an alternative to the linkage of structuralism and phenomenology – identified by Derrida himself in his critique of Husserl – that was proposed as a broad analytical strategy by David Lewin in a series of writings from the mid-1980s on. Phenomenology is a 'science of experience'. It is concerned not with the world as natural object or with mind as a store of knowledge. It deals with the contact between object and mind; it studies consciousness directed towards objects ('intentionality'), and aims to describe the structure of consciousness. An early example of musical phenomenology was the massive two-volume study by the Swiss conductor and mathematician Ernest Ansermet (1961). Ranging across mathematical, acoustical and philosophical issues, it reached a study of musical structures that centred on the idea of the 'melodic path' (*chemin mélodique*). Classifying intervals as 'active extrovert', 'active

introvert', 'passive extrovert' and 'passive introvert', it tried to give a value to the degree of tension in a melody. Other pioneers of musical phenomenology were Philip Batstone (1968–9), Lionel Pike (1970) and Thomas Clifton (1983), though their writings showed little consensus (*see also* [Philosophy of music](#)).

A concern with immediate perception also motivated developments in the analysis of phenomena of timbre, melodic contour and aspects of rhythm and metre. Robert Cogan and Pozzi Escot (1976) took phonological analysis, as performed in the field of linguistics, as a model for investigating what they called 'sonic design' – the way in which sound-spectra are shaped in musical space. Their contention was that compositions are just as much formations of basic sonic stuff as formations of tonal or rhythmic materials, and that composers and eras of music often bear recognizable sonic 'fingerprints'. They made resourceful use of graphs to carry out tone-colour analysis of single instrumental sounds and ensembles and also made use of sound-spectrum analysis, a technique developed by IBM which was capable of photographing the sonic 'content' of a whole composition. Cogan provided an analysis of Stravinsky's *The Rite of Spring* in his journal *Sonus* (1982), and in 1984 presented a series of analyses together with a theory of tone-colour strongly influenced by the linguist Roman Jakobson. Studies of melodic contour were less spectacular in their presentation, frequently being expressed in numerical or symbolic terms reminiscent of pitch class set analysis, though with the important difference that the order of terms was crucial in defining a sequence of directed intervals or of changes of direction. Foundations for future work were laid by Michael Friedmann (1985), Elizabeth West Marvin and Paul Laprade (1987), Larry Polansky and Richard Bassein (1992), Robert Morris (1993) and Ian Quinn (1997).

Like much work in the analysis of contour, Lewin's broad phenomenology (1985–6) was presented in formal terms suggesting the use of Artificial Intelligence as a metaphor:

I propose as a provisional model for 'a musical perception' this basic formula:

$$p = (\text{EV}, \text{CXT}, \text{P-R-LIST}, \text{ST-LIST})$$

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

Similarly, Lewin developed structural analysis through a theory of 'generalized musical intervals and transformations' which was expressed in terms of the formal apparatus of mathematical lemmas and theorems (1987). The underlying principles of his approach were, first, that 'intervals' of some kind are found in many musical domains, including most obviously pitch and rhythm (each of which can be measured in a number of ways), and that their means of measurement can be modelled by simple mathematical operations; and, secondly, that any interval, for example the interval of two semitones between middle C and the D above it, can be expressed equivalently as a particular 'transformation' of the C into the D or vice versa (in this case a transposition upwards or downwards by two semitones). The second principle is harder to grasp than the first, but its potential to refocus musical reflection is correspondingly greater: it allows something that is intuitively thought of as a transformation of one musical object into another, such as a statement of a theme and a statement of a variant of part of it, to be brought within the same mathematical framework as something that is intuitively conceived as a relationship between two musical objects, such as the pitch interval between two notes, or the interval of time between successive statements of a fugue subject.

Lewin's theory of transformations was based on mathematical group theory, a powerful development of set theory which does not merely deal with collections of objects but associates

those collections with specific operations on the objects. In analytical applications, for example by Lewin himself (1993) and by Henry Klumpenhouwer (1992; see also Lewin, 1990, 1994), it resulted in descriptions that reflected musical complexity as networks of transformations (and of transformations of transformations etc.) each of which was defined mathematically and could be labelled in a way that reflected the phenomenological import of the transformation (fig.29). The application of group theory to late 19th-century harmonic practice was also more directly explored by both Lewin himself (1983–4) and later writers including Cohn (1991, 1996).

During this period analysis may be said variously to have come into intimate contact with the cognitive sciences, semiology and critical theory, to have taken on the style if not the substance of applied mathematics, and to have defined itself as an academic discipline before dissolving that definition in favour of a millennial uncertainty. Of all the cognate disciplines, it is criticism that is presently the hardest to differentiate clearly from analysis. Both tend firmly towards the formalist side of what can be identified as a formalist/historicist divide, but if this has focussed ‘formalism’ as a sensitive issue, it must be acknowledged that those engaged in the new musicological criticism of the 1980s and 90s were less happy to be seen as formalists than were those whose primary concern was to develop structural analysis. Indeed, the concern of analysis with structure might still be taken as a defining characteristic – were definition itself not shunned by many of its practitioners today. In these circumstances it seems right to acknowledge that structures are now understood to be asserted rather than discovered, that the analyst is more inclined than ever to see his or her work as the writing down of interpretations from a personal perspective, and that charting the discipline historically has been one catalyst in making the languages of analysis a focus of self-awareness for those who read and write with them.

## BIBLIOGRAPHY

[AdlerHM](#)

[FétisB](#)

[PraetoriusSM, iii](#)

[RiemannL12 \(C. Dahlhaus\)](#)

F. Gaffurius: *Theorica musice* (Milan, 1492/R); Eng. trans. by W.K. Kreyszig (New Haven, CT, 1993)

G. Dressler: *Praecepta musicae poeticae* (MS, D-MAI, 1563); pr. by B. Engelke, *Geschichtsblätter für Stadt und Land Magdeburg*, xlix–l (1914–15), 213–50

P. Pontio: *Ragionamento di musica* (Parma, 1588); ed. S. Clercx (Kassel, 1959)

J. Burmeister: *Hypomnematum musicae poeticae* (Rostock, 1599)

J. Burmeister: *Musica autoschediastike* (Rostock, 1601)

J. Burmeister: *Musica poetica* (Rostock, 1606/R; Eng. trans., 1993)

J. Lippius: *Synopsis musicae novae omnino verae atque methodicae universae* (Strasbourg, 1612); ed. and trans. B.V. Rivera (Colorado Springs, CO, 1977)

P. Cerone: *El melopeo y maestro* (Naples, 1613/R)

J. Mattheson: *Das neu-eröffnete Orchestre* (Hamburg, 1713)

J.-P. Rameau: *Traité de l’harmonie réduite à ses principes naturels* (Paris, 1722; Eng. trans., 1737); ed. and trans. P. Gossett (New York, 1971)

J.J. Fux: *Gradus ad Parnassum* (Vienna, 1725, 2/1742/R; partial Eng. trans., 1943 as *Steps to Parnassus: the Study of Counterpoint*, rev. 2/1965 as *The Study of Counterpoint*)

J.D. Heinichen: *Der General-Bass in der Composition, oder Neue und gründliche Anweisung* (Dresden, 1728/R; partial Eng. trans., 1966)

J. Mattheson: *Kern melodischer Wissenschaft* (Hamburg, 1737/R)

J.-P. Rameau: *Génération harmonique, ou Traité de musique théorique et pratique* (Paris, 1737); ed. and trans. in D. Hayes: *Rameau’s ‘Génération harmonique’* (diss., Stanford U., 1974)

J.A. Scheibe: *Der critische Musikus* (Hamburg, 1738–40, 2/1745/R)

J. Mattheson: *Der vollkommene Capellmeister* (Hamburg, 1739/R; Eng. trans., 1981)

J. le R. D'Alembert: *Elémens de musique théorique et pratique, suivant les principes de M. Rameau* (Paris, 1752/R, enlarged 2/1762, 3/1772)

J. Riepel: *Anfangsgründe zur musikalischen Setzkunst*, i: *De Rhythmopoeia* (Regensburg, 1752, 2/1754); ii: *Grundregeln zur Tonkunst insgemein* (Frankfurt, 1755); iii: *Gründliche Erklärung der Tonordnung* (Frankfurt, 1757); iv: *Erlaeuterung der betruglichen Tonordnung* (Augsburg, 1765); v: *Unentbehrliche Anmerkungen zum Contrapunct* (Regensburg, 1768)

J.P. Kirnberger: *Der allezeit fertige Polonoisen- und Menuettencomponist* (Berlin, 1757)

F.W. Marpurg: *Systematische Einleitung in die musikalische Setzkunst, nach den Lehrsätzen des Herrn Rameau* (Leipzig, 1757) [trans. of D'Alembert, 1752]

J.P. Kirnberger: *Die Kunst des reinen Satzes in der Musik, aus sicheren Grundsätzen hergeleitet* (Berlin, 1771–9/R, 2/1793; Eng. trans., 1982 as *The Art of Strict Musical Composition*)

J.G. Sulzer: *Allgemeine Theorie der schönen Künste* (Leipzig, 1771–4, enlarged 3/1786–7 by F. von Blankenburg, 4/1792–9/R) [musical articles by Sulzer, Kirnberger and Schulz]

J.P. Kirnberger: *Die wahren Grundsätze zum Gebrauch der Harmonie ... als ein Zusatz zu der Kunst des reinen Satzes in der Musik* (Berlin and Königsberg, 1773/R, 2/1793) [written by J.A.P. Schulz under Kirnberger's supervision]

G.J. Vogler: *Tonwissenschaft und Tonsetzkunst* (Mannheim, 1776/R)

H.C. Koch: *Versuch einer Anleitung zur Composition*, i (Rudolstadt, 1782/R; ii–iii (Leipzig, 1787–93/R; partial Eng. trans., 1995)

F. Galeazzi: *Elementi teorico-pratici di musica* (Rome, 1791–6; Eng. trans., i, 1969 by A. Frascarelli)

A.F.C. Kollmann: *An Essay on Musical Harmony* (London, 1796, 2/1817)

A.F.C. Kollmann: *An Essay on Practical Musical Composition* (London, 1799/R, 2/1812)

A. Reicha: *Practische Beispiele: ein Beitrag zur Geistescultur des Tonsetzers* (Vienna, 1803)

A. Kollmann: *A New Theory of Musical Harmony* (London, 1806, 2/1823)

J.-J. de Momigny: *Cours complet d'harmonie et de composition* (Paris, 1806)

E.T.A. Hoffman: [Review of Beethoven's Fifth Symphony], *AMZ*, xii (1809–10), 630ff, 652ff

J.F. Herbart: *Psychologische Bemerkungen zur Tonlehre* (Königsberg, 1811)

G.J. Vogler: *System für den Fugensbau als Einleitung zur harmonischen Gesang-Verbindungs-Lehre* (Offenbach, 1811)

A. Reicha: *Traité de mélodie* (Paris, 1814, 2/1832)

A. Reicha: *Cours de composition musicale, ou Traité complet et raisonné d'harmonie pratique* (Paris, 1816–18; Eng. trans., 1854/R)

G. Weber: *Versuch einer geordneten Theorie der Tonsetzkunst* (Mainz, 1817–21, 3/1830–32; Eng. trans., 1851)

J.-J. de Momigny: *La seule vraie théorie de la musique* (Paris, 1821/R)

A. Reicha: *Traité de haute composition musicale* (Paris, 1824–5)

J.B. Logier: *System der Musik-Wissenschaft und der praktischen Composition* (Berlin, 1827; Eng. trans., 1827/R, rev., enlarged by C. Stein, 1888/Ras Logier's *Comprehensive Course in Music, Harmony, and Practical Composition*)

H.J.B. Birnbach: *Der vollkommene Komponist* (Berlin, 1832–46)

A. Reicha: *Art du compositeur dramatique, ou Cours complet de composition vocale* (Paris, 1833)

C. Czerny, ed.: *Vollständiges Lehrbuch der musikalischen Composition ... von A. Reicha* (Vienna, 1834) [trans. of Reicha, 1814, 1816–18, 1824–5]

H. Berlioz: [reviews of Beethoven's symphonies], *RGMP*, iv (1837), 121 [no.3]; v (1838), 33 [nos.1, 2, 4 and 5], 47 [no.6], 64 [no.7], 75 [no.8], 96 [no.9]; all repr. in *A travers chants* (Paris, 1862; Eng. trans., 1913–18; Eng. trans., 1975), 17–62

A.B. Marx: Die Lehre von der musikalischen Komposition, praktisch-theoretisch, i (Leipzig, 1837, rev. 9/1887, 10/1903; Eng. trans., 1852); ii (Leipzig, 1838, 7/1890); iii (Leipzig, 1845, 5/1879); iv (Leipzig, 1847, 5/1888; Eng. trans., 1910) [revs. of 1887–90 by H. Riemann]

M. Hauptmann: Erläuterungen zu Johann Sebastian Bachs ‘Kunst der Fuge’ (Leipzig, 1841, 4/1929)

A.B. Marx: Die alte Musiklehre im Streit mit unserer Zeit (Leipzig, 1841)

A.D. Ul'ibishev [Oulibicheff]: Nouvelle biographie de Mozart suivie d'un aperçu sur l'histoire générale de la musique et de l'analyse des principales oeuvres de Mozart (Moscow, 1843)

J.C. Lobe: Compositions-Lehre, oder Umfassende Theorie von der thematischen Arbeit (Weimar, 1844)

C. Czerny: School of Practical Composition (London, c1849/R; Ger. orig., c1849–50)

J.C. Lobe: Lehrbuch der musikalischen Komposition, i: Von der ersten Elementen der Harmonielehre an bis zur vollständigen Komposition des Streichquartetts und aller Arten von Klavierwerken; ii: Die Lehre von der Instrumentation; iii: Lehre von der Fuge, dem Kanon und dem doppelten Kontrapunkte; iv: Die Oper (Leipzig, 1850–67, many later edns)

W. von Lenz: Beethoven et ses trois styles: analyses des sonates de piano suivies de l'essai d'un catalogue critique, chronologique et anecdotique de l'oeuvre de Beethoven (St Petersburg, 1852/R); ed. M.D. Calvocoressi (Paris, 1909/R)

E.F.E. Richter: Die Grundzüge der musikalischen Formen und ihre Analyse (Leipzig, 1852)

M. Hauptmann: Die Natur der Harmonik und der Metrik (Leipzig, 1853, 2/1873; Eng. trans., 1888/R)

S. Sechter: Die Grundsätze der musikalischen Komposition (Leipzig, 1853–4)

E. von Elterlein [E. Gottschald]: Beethoven's Symphonien nach ihren idealen Gehalt, mit besonderer Rücksicht auf Haydn, und die neueren Mozart Symphoniker (Dresden, 1854, 3/1870; Eng. trans., 1893)

E. Hanslick: Vom Musikalisch-Schönen (Leipzig, 1854/R, 16/1966; Eng. trans., 1891/R); ed. D. Strauss (Mainz, 1990); ed. and Eng. trans. G. Payzant (Indianapolis, IN, 1986)

A.B. Marx: Die Musik des neunzehnten Jahrhunderts und ihre Pflege (Leipzig, 1855, 2/1873; Eng. trans., 1854)

E. von Elterlein [E. Gottschald]: Beethovens Clavier-Sonaten für Freunde der Tonkunst erläutert (Leipzig, 1856, 4/1875; Eng. trans., 1875, 6/1903)

A.D. Ul'ibishev [Oulibicheff]: Beethoven: ses critiques et ses glossateurs (Leipzig, 1857)

A.B. Marx: Ludwig van Beethoven: Leben und Schaffen (Berlin, 1859/R, 6/1908)

F.L.S. Dörenberg: Die Symphonien Beethovens und anderer berühmter Meister ... analysiert und zum Verständnisse erläutert (Leipzig, 1863)

J.C. Lobe: Katechismus der Compositionslehre (Leipzig, 1863/R, 2/1871, rev. 7/1902; Eng. trans., 1874)

A.B. Marx: Anleitung zum Vortrag Beethovenscher Klavierwerke (Berlin, 1863, 5/1912; Eng. trans., 1895)

G. Nottebohm: Ein Skizzenbuch von Beethoven (Leipzig, 1865, rev. 2/1924/R by P. Mies; Eng. trans., 1979)

M. Hauptmann: Die Lehre von der Harmonik, ed. O Paul (Leipzig, 1868, 2/1873)

G. Nottebohm: Beethoveniana (Leipzig, 1872/R, 2/1925)

H. Riemann: Über das musikalische Hören (diss., U. of Göttingen, 1873); pubd as Musikalische Logik (Leipzig, 1874)

M. Lussy: Traité de l'expression musicale: accents, nuances et mouvements dans la musique vocale et instrumentale (Paris, 1874, 8/1904; Eng. trans., 1885)

H. von Wolzogen: Thematischer Leitfaden durch die Musik zu Richard Wagners Festspiel ‘Der Ring des Nibelungen’ (Leipzig, 1876, 4/1878 as Erläuterungen zu R. Wagners Nibelungendrama; Eng. trans., 1882, 3/1888)

- O. Hostinski: Das Musikalisch-Schöne und das Gesamtkunstwerk vom Standpunkte der formalen Aesthetik (Leipzig, 1877)
- H. Riemann: Musikalische Syntax: Grundriss einer harmonischen Satzbildungslehre (Leipzig, 1877/R)
- H. von Wolzogen: Thematischer Leitfaden durch die Musik von Richard Wagners Tristan (Leipzig, 1880, 4/1911; Eng. trans., 1902)
- C. Mayrberger: 'Die Harmonik Richard Wagners an den Leitmotiven des Vorspiels zu Tristan und Isolde erläutert', Bayreuther Blätter, iv (1881), 169–80
- H. von Wolzogen: Thematischer Leitfaden durch die Musik von Richard Wagners Parsifal (Leipzig, 1882, 21/1914; Eng. trans., 1904)
- E. von Hagen: Beiträge zur Einsicht in das Wesen der Wagnerschen Kunst: gesammelte Aufsätze (Berlin, 1883)
- M. Lussy: Le rythme musicale: son origine, sa fonction et son accentuation (Paris, 1883, 4/1911; Eng. trans., abridged, 1908)
- H. Riemann: Der Ausdruck in der Musik (Leipzig, 1883)
- S. Jadassohn: Musikalische Kompositionslehre (Leipzig, 1883–9)
- H. Riemann: Musikalische Dynamik und Agogik: Lehrbuch der musikalischen Phrasierung (Hamburg, 1884)
- G. Adler: 'Umfang, Methode und Ziel der Musikwissenschaft', VMw, i (1885), 5–20
- T. Helm: Beethovens Streichquartette: Versuch einer technischen Analyse dieser Werke im zusammenhange mit ihren geistigen Gehalt (Leipzig, 1885, 3/1921/R)
- G. Adler: 'Die Wiederholung und Nachahmung in der Mehrstimmigkeit', VMw, ii (1886), 271–346
- H. Kretzschmar: Führer durch den Konzertsaal, i (Leipzig, 1887, rev. 7/1932 by F. Noack and H. Botstiber); ii/1 (Leipzig, 1888, 5/1921); ii/2 (Leipzig, 1890, rev. 5/1939 by H. Schnoor)
- G. Nottebohm: Zweite Beethoveniana, ed. E. Mandyczewski (Leipzig, 1887)
- H. Riemann: Systematische Modulationslehre als Grundlage der musikalischen Formenlehre (Hamburg, 1887)
- J. Schalk: 'Das Gesetz der Tonalität', Bayreuther Blätter, xi (1888), 192–7, 381–7; xii (1889), 191–8; xiii (1890), 65–70
- A.J. Goodrich: Complete Musical Analysis (Cincinnati, 1889)
- H. Riemann: Katechismus der Kompositionslehre (Musikalische Formenlehre) (Leipzig, 1889, 3/1905 as Grundriss der Kompositionslehre, 4/1910)
- H. Riemann: Katechismus des Generalbass-Spiels (Leipzig, 1889)
- H. Riemann: Katechismus der Harmonie- und Modulationslehre (Leipzig, 1890, 9/1923–4 as Handbuch der Harmonielehre)
- H. Riemann and C. Fuchs: Katechismus der Phrasierung (Praktische Anleitung zum Phrasieren) (Leipzig, 1890, 2/1900 as Vademecum der Phrasierung, 8/1912 as Handbuch der Phrasierung; Eng. trans., 1890)
- H. Riemann: Katechismus der Fugen-Komposition, i–ii (Leipzig, 1890–91, 2/1906–7, 3/1914 as Handbuch der Fugen-Komposition; Eng. trans., 1893/R); iii (Leipzig, 1894, 2/1917 as Handbuch der Fugen-Komposition)
- F. Koegel: 'Der Bau des Tristandramas', Bayreuther Blätter, xv (1892), 257–74
- H. Riemann: Vereinfachte Harmonielehre, oder Die Lehre von den tonalen Funktionen der Akkorde (London and New York, 1893, 2/1903; Eng. trans., 1896)
- W.H. Hadow: Studies in Modern Music (London, 1893–5, many later edns incl. 1926/R)
- E. Prout: Musical Form (London, 1893–7/R)
- A. Ernst: 'Die Übereinstimmung der einzelnen Szenen in den Dramen Wagners', Bayreuther Blätter, xvii (1894), 234–39
- P. Goetschius: Models of the Principal Musical Forms (Boston, 1894)
- E. Prout: Applied Forms (London, 1895/R)

- H. Riemann: *Präludien und Studien: gesammelte Aufsätze zur Ästhetik, Theorie und Geschichte der Musik*, i (Frankfurt, 1895/R); ii–iii (Leipzig, 1900–01/R)
- C. von Ehrenfels: ‘Die musikalische Architektonik’, *Bayreuther Blätter*, xix (1896), 257–63
- G. Grove: *Beethoven and his Nine Symphonies* (London, 1896, 3/1898/R)
- W.H. Hadow: *Sonata Form* (London, 1896/R)
- H. Riemann: *Geschichte der Musiktheorie im IX.–XIX. Jahrhundert*, iii: *Die Harmonielehre* (Leipzig, 1898, 2/1921/R; Eng. trans., ed. W.C. Mickelsen, 1977)
- M. Arend: ‘Harmonische Analyse des Tristanvorspiels’, *Bayreuther Blätter*, xxiv (1901), 160–69
- C. Hynais: *Die Harmonik Richard Wagners in Bezug auf die Fundamentaltheorie Sechters* (Vienna, 1901)
- C. Mey: *Musik als tönende Weltidee* (Leipzig, 1901)
- C. Capellen: ‘Harmonik und Melodik bei R. Wagner’, *Bayreuther Blätter*, xxv (1902), 3–23
- H. Kretzschmar: ‘Anregungen zur Förderung musikalischer Hermeneutik’, *JbMP* 1902, 45–66; *JbMP* 1905, 73–86; also in *Gesammelte Aufsätze aus den Jahrbüchen der Musikbibliothek Peters*, i (Leipzig, 1911), 168–92; ii (Leipzig, 1911), 280–93
- H. Riemann: *Grosse Kompositionslehre*, i: *Der homophone Satz* (Berlin, 1902, 2/1912); ii: *Der polyphone Satz* (Berlin, 1903, 2/1912); iii: *Der Orchestersatz und der dramatische Gesangstil* (Berlin, 1913)
- M. Lussy: *L’anacrouse dans la musique moderne* (Paris, 1903)
- H. Riemann: *Beethovens Streichquartette* (Berlin, 1903)
- H. Riemann: *System der musikalischen Rhythmik und Metrik* (Leipzig, 1903/R)
- H. Schenker: *Ein Beitrag zur Ornamentik als Einführung zu Ph. Em. Bachs Klavierwerken* (Vienna, 1903, 2/1908/R); Eng. trans. in *Music Forum*, iv (1976), 1–140
- G. Adler: *Richard Wagner: Vorlesungen* (Leipzig, 1904, 2/1923)
- P. Goetschius: *Lessons in Music Form: a Manual of Analysis* (New York, 1904/R)
- K. Grunsky: ‘Wagner als Sinfoniker’, *Richard Wagner-Jb* 1906, 227–44
- J.-G. Prod’homme: *Les symphonies de Beethoven (1800–1827)* (Paris, 1906/R, 3/1909)
- H. Schenker: *Neue musikalische Theorien und Phantasien*, i: *Harmonielehre* (Stuttgart, 1906/R; Eng. trans., 1954/R as *Harmony*); ii/1: *Kontrapunkt I: Cantus firmus und zweistimmiger Satz* (Vienna, 1910/R); ii/2: *Kontrapunkt II: Drei- und mehrstimmiger Satz* (Vienna, 1922/R; Eng. trans., ed. J. Rothgeb, New York and London, 1987); iii: *Der freie Satz* (Vienna, 1935, 2/1956; Eng. trans., 1979 as *Free Composition*)
- E. Ergo: ‘Über Wagners Melodik und Harmonik’, *Bayreuther Blätter*, xxx (1907), 125–36, 181–94, 270–81; xxxi (1908), 33–47
- K. Grunsky: ‘Vorspiel und I. Akt von “Tristan und Isolde”’, *Richard Wagner-Jb* 1907, 207–84
- R. Mayrhofer: *Psychologie des Klangs: und die daraus hervorgehende, theoretisch-praktische Harmonielehre* (Leipzig, 1907)
- S. Macpherson: *Form in Music: with Special Reference to the Designs of Instrumental Music* (London and New York, 1908, rev. 2/1915/R) [see also *Studies in Phrasing and Form*, ii (London, 1912)]
- R. Mayrhofer: *Die organische Harmonielehre* (Berlin, 1908)
- A. Schering: ‘Die Lehre von der musikalischen Figuren’, *KJb*, xxi (1908), 106–14
- M. Chop: *Ludwig van Beethovens Symphonien: geschichtlich und musikalisch Analysiert* (Leipzig, 1910)
- P. Coindreau: *Analyse des dix-sept quatuors de Beethoven* (Paris, 1910)
- E. Prout: *Analysis of J.S. Bach’s Forty-Eight Fugues (Das Wohltemperirte Clavier)*, ed. L.B. Prout (London, 1910)
- H. Schenker: *Johann Sebastian Bach: Chromatische Fantasia und Fuge: kritische Ausgabe mit Anhang* (Vienna, 1910, rev. 2/1969 by O. Jonas; Eng. trans., 1984)

- G. Adler: *Der Stil in der Musik, i: Prinzipien und Arten des musikalischen Stils* (Leipzig, 1911, 2/1929/R; rev. 1919/Ras *Methode der Musikgeschichte*)
- I. Krohn: 'Über die Methode der musikalischen Analyse', *IMSCR IV*: London 1911, 250–58
- H. Leichtentritt: *Musikalische Formenlehre* (Leipzig, 1911, 3/1927/R; Eng. trans., 1951 as *Musical Form*)
- A. Schering: *Musikalische Bildung und Erziehung zum musikalischen Hören* (Leipzig, 1911, 4/1924)
- A. Schoenberg: *Harmonielehre* (Vienna, 1911, 3/1922; Eng. trans., abridged, 1948)
- A. Schering: 'Das kolorierte Orgelmadrigal des Trecento', *SIMG*, xiii (1911–12), 172–204
- M. Lussy: *La sonate pathétique de L. van Beethoven, op.13, rythmée et annotée*, ed. A. Dechevrens (Paris, 1912)
- H. Schenker: *Beethovens neuente Sinfonie: eine Darstellung des musikalischen Inhaltes unter fortlaufender Berücksichtigung auch des Vortrages und der Literatur* (Vienna, 1912/R; Eng. trans., 1992)
- A.B. Marx: *Musikalische Schriften über Tondichter und Tonkunst*, ed. L. Hirschberg (Hildburghausen, 1912–22)
- C. von Ehrenfels: *Richard Wagner und seine Apostaten* (Vienna, 1913)
- E. Kurth: 'Die Jugendopern Glucks bis "Orfeo"', *SMw*, i (1913), 193–277
- E. Kurth: *Die Voraussetzungen der theoretischen Harmonik und der tonalen Darstellungssysteme* (Berne, 1913/R)
- H. Schenker: *Die letzten fünf Sonaten Beethovens* ['Erläuterungsausgaben'] (Vienna, 1913–21, 2/1971–2 by O. Jonas)
- H. Erpf: *Der Begriff der musikalischen 'Form'* (Stuttgart, 1914)
- A. Halm: *Die Symphonie Anton Bruckners* (Munich, 1914, 2/1923/R)
- A. Schering: 'Zur Grundlegung der musikalischen Hermeneutik', *Zeitschrift für Ästhetik und allgemeine Kunstwissenschaft*, ix (1914), 168–75
- W. Fischer: *Zur Entwicklungsgeschichte des Wiener klassischen Stils* (Habilitationsschrift, U. of Vienna, 1915); extracts in *SMw*, iii (1915), 24–84
- H. Gál: 'Die Stileigentümlichkeiten des jungen Beethoven', *SMw*, iv (1916), 58–115
- E. Kurth: *Grundlagen des linearen Kontrapunkts: Einführung in Stil und Technik von Bachs melodischer Polyphonie* (Berne, 1917, 5/1956/R)
- E. Kurth: 'Zur Motivbildung Bachs', *BJb* 1917, 80–136
- R. Lach: 'Der Inhaltsproblem in der Musikästhetik: ein Beitrag der musikalischen Hermeneutik', *Festschrift Hermann Kretzschmar* (Leipzig, 1918/R), 74–9
- P. Linke: *Grundfragen der Wahrnehmungslehre* (Munich, 1918, 2/1929)
- E. Sapir: 'Representative Music', *MQ*, iv (1918), 161–7
- G. Becking: '"Hören" und "Analysieren" (über Riemanns Beethoven-Analysen)', *ZMw*, i (1918–19), 587–603
- H. Riemann: *Ludwig van Beethovens sämtliche Klavier-Solosonaten: ästhetische und formal-technische Analyse mit historischen Notizen* (Berlin, 1918–19, 4/1920)
- E. Bücken: 'Anton Reicha als Theoretiker', *ZMw*, ii (1919–20), 156–69
- E. Kurth: *Romantische Harmonik und ihre Krise in Wagners 'Tristan'* (Berne, 1920, 2/1923/R)
- R. Schlösser: 'Der Stufenweg rechts und das Umrahmungsmotiv', *Bayreuther Blätter*, xliii (1920), 28–31
- W.R. Spalding: *Music: an Art and a Language* (Boston and New York, 1920)
- S. Anheisser: 'Das Vorspiel zu "Tristan und Isolde" und seine Motivik: ein Beitrag zur Hermeneutik des Musikdramas Wagners', *ZMw*, iii (1920–21), 257–304
- G. Becking: *Studien zu Beethovens Personalstil: das Scherzothema* (Leipzig, 1921)
- H. Schenker, ed.: *Der Tonwille: Flugblätter zum Zeugnis unwandelbarer Gesetze der Tonkunst* (Vienna, 1921–4)

- A.O. Lorenz: Gedanken und Studien zur musikalischen Formgebung in R. Wagners 'Ring des Nibelungen' (diss., U. of Frankfurt, 1922)
- H. Mersmann: Kulturgeschichte der Musik in Einzeldarstellungen, i: Beethoven: die Synthese der Stile (Berlin, 1922)
- W. Werker: Studien über die Symmetrie im Bau der Fugen und die motivische zusammengehörigkeit der Präludien und Fugen des 'Wohltemperierten Klaviers' von Johann Sebastian Bach (Leipzig, 1922/R)
- E. Bücken and P. Mies: 'Grundlagen, Methoden und Aufgaben der musikalischen Stilkunde', ZMw, v (1922–3), 219–25
- A.O. Lorenz: 'Die formale Gestaltung des Vorspiels zu Tristan und Isolde', ZMw, v (1922–3), 546–57
- H. Mersmann: 'Versuch einer Phänomenologie der Musik', ZMw, v (1922–3), 226–69
- H. Grabner: Die Funktionstheorie Hugo Riemanns und ihre Bedeutung für die praktische Analyse (Munich, 1923, 2/1930)
- K. Jeppesen: Palestrinastil med særligt henblik paa dissonansbehandlingen (Copenhagen, 1923; Eng. trans., 1927, 2/1946/R as The Style of Palestrina and the Dissonance)
- A. Schmitz: Beethovens 'Zwei Prinzipie': ihre Bedeutung für Themen- und Satzbau (Berlin, 1923)
- R. Steglich: 'Das c-moll-Präludium aus dem ersten Teil des Wohltemperierten Klaviers J.S. Bachs', BJB 1923, 1–11
- E. Stein: Praktischer Leitfaden zu Schönbergs Harmonielehre (Vienna, 1923)
- W. Werker: Die Matthäus-Passion (Leipzig, 1923)
- G. Becking: 'Über ein dänisches Schul-Liederbuch: über Mitbewegungen und Gestaltanalyse', ZMw, vi (1923–4), 100–19
- E. Bücken: 'Der galante Stil: eine Skizze seiner Entwicklung', ZMw, vi (1923–4), 418–30
- A. Lorenz: 'Betrachtungen über Beethovens Eroica-Skizzen', ZMw, vii (1924–5), 409–22
- A. Lorenz: Das Geheimnis der Form bei Richard Wagner (Berlin, 1924–33)
- H. Bessler: 'Grundfragen des musikalischen Hörens', JbMP 1925, 35–52; repr. in Aufsätze zur Musikästhetik und Musikgeschichte, ed. P. Gulke (Leipzig, 1978), 28–53
- F. Cassirer: Beethoven und die Gestalt: ein Kommentar (Stuttgart, 1925)
- W. Engelsmann: 'Die Sonatenform Beethovens: Probleme in der Klaviersonate As-Dur opus 110', Neue-Musik-Zeitung, xlv (1925), 203–6, 222–5
- E. Kurth: Bruckner (Berlin, 1925/R)
- P. Mies: Die Bedeutung der Skizzen Beethovens zur Erkenntnis seines Stiles (Leipzig, 1925; Eng. trans., 1929/R)
- C. Pieper: Musikalische Analyse: eine musikalische Formenlehre in der Form von Musteranalysen klassischer Tonstücke (Cologne, 1925)
- H. Schenker: Beethoven: Fünfte Sinfonie: eine Darstellung des musikalischen Inhaltes unter fortlaufender Berücks (Vienna, 1925/R) [orig. pubd in Der Tonwille (1921–4)]
- A. Schering: 'Bach und das Symbol', BJB 1925, 40–63; BJB 1928, 119–37
- L. Schiedermaier: Der junge Beethoven (Leipzig, 1925/R)
- H. Schenker: Das Meisterwerk in der Musik: ein Jahrbuch (Munich, 1925–30/R; Eng. trans., 1994–7) [incl. analyses of Mozart: Symphony no.40, ii, 105–59 and Beethoven: Symphony no.3, iii, 25–99]
- H. Grabner: Lehrbuch der musikalischen Analyse (Leipzig, 1926)
- A.O. Lorenz: 'Das Finale in Mozarts Meisteroper', Die Musik, xix (1926–7), 621–32
- G. Becking: Der musikalische Rhythmus als Erkenntnisquelle (Augsburg, 1928)
- A.O. Halm: 'Über den Wert musikalischer Analysen', Die Musik, xxi (1928–9), 481–4
- W. Karthaus: 'Die musikalische Analyse', Die Musik, xxi (1928–9), 264–71
- W. Danckert: 'Stil als Gesinnung', Bärenreiter-Jb, v (1929), 24–32
- R. von Ficker: 'Primäre Klangformen', JbMP 1929, 21–34

- A. Schering: 'Musikalische Analyse und Wertidee', *JbMP* 1929, 9–20
- W. Riezler: 'Die Urlinie', *Die Musik*, xxii (1929–30), 502–10
- R. Steglich: *Die elementare Dynamik des musikalischen Rhythmus* (Leipzig, 1930)
- B.F. Asafyev: *Muzikal'naya forma kak protsess* [Musical form as process] (Moscow, 1930–47, 2/1963 ed. E. Orlova, 3/1971; Ger. trans., 1976; Eng. trans., 1977)
- W. Danckert: *Personale Typen des Melodiestils* (Kassel, 1931, enlarged 2/1932 as *Ursymbole melodischer Gestaltung*)
- W. Engelsmann: *Beethovens Kompositionspläne, dargestellt in den Sonaten für Klavier und Violine* (Augsburg, 1931)
- E. Kurth: *Musikpsychologie* (Berlin, 1931/R, 2/1947)
- E. Schwebsch: *Johann Sebastian Bach und die Kunst der Fuge* (Stuttgart, 1931)
- D.F. Tovey: *A Companion to Beethoven's Pianoforte Sonatas* (London, 1931/R)
- K. Westphal: 'Analyse und Interpretation', *Die Musik*, xxiv (1931–2), 349–55
- G. Becking: 'Der musikalische Bau des Montenegrischen Volksepos', *Proceedings of the International Congress of Phonetic Sciences [I]: Amsterdam 1932* [*Archives néerlandaises de phonétique expérimentale*, viii–ix (1933)], 144–152; pubd separately (Harlem, n.d.)
- F. Gennrich: *Grundriss einer Formenlehre des mittelalterlichen Liedes* (Halle, 1932/R)
- G. de Saint-Foix: *Les symphonies de Mozart* (Paris, 1932; Eng. trans., 1947/R)
- H. Schenker: *Fünf Urlinie-Tafeln* (Vienna, 1932, rev. 2/1969 by F. Salzer as *Five Graphic Music Analyses*)
- J. Yasser: *A Theory of Evolving Tonality* (New York, 1932/R)
- R. Stöhr, H. Gál and A. Orel: *Formenlehre der Musik* (Leipzig, 1933, 2/1954)
- W. Danckert: *Beiträge zur Bachkritik* (Kassel, 1934)
- O. Jonas: *Das Wesen des musikalischen Kunstwerks* (Vienna, 1934, rev. 2/1972 as *Einführung in die Lehre Heinrich Schenkers*; Eng. trans., 1982/Ras *Introduction to the Theory of Heinrich Schenker*)
- K. Westphal: *Der Begriff der musikalischen Form in der Wiener Klassik* (Leipzig, 1934, 2/1971)
- R.O. Morris: *The Structure of Music* (London, 1935)
- F. Salzer: *Sinn und Wesen der abendländischen Mehrstimmigkeit* (Vienna, 1935)
- R. von Tobel: *Die Formenwelt der klassischen Instrumentalmusik* (Berne, 1935)
- W. Twittenhoff: *Die musiktheoretischen Schriften Joseph Riepels (1709–1782): als Beispiel einer anschaulichen Musiklehre* (Halle, 1935/R)
- K. Westphal: 'Barockes und klassisches Formhören', *SMz*, lxxv (1935), 365–71
- D.F. Tovey: *Essays in Musical Analysis*, i: *Symphonies*; ii: *Symphonies (II), Variations and Orchestral Polyphony*; iii: *Concertos*; iv: *Illustrative Music*; v: *Vocal Music*; vi: *Supplementary Essays, Glossary, and Index* (London, 1935–9/R)
- P. Bogatirev: 'La chanson populaire du point de vue fonctionnel', *Travaux du Cercle linguistique de Prague*, vi (1936), 222
- E. Schwarzmaier: *Die Takt- und Tonordnung Josef Riepels* (Wolfenbüttel, 1936/R)
- P. Hindemith: *Unterweisung im Tonsatz* (Mainz, 1937, 2/1940; Eng. trans., 1942 as *The Craft of Musical Composition*, rev. 2/1945)
- O. Jonas: 'Ein Bach Präludium: ein Weg zum organischen Hören', *Der Dreiklang*, no.1 (1937) 13–17; repr. in *Musikerziehung*, xx (1967), 205–9
- O. Jonas: 'Mozarts ewige Melodie, I–II', *Der Dreiklang*, no.1 (1937), 84–92; repr. in *Musikerziehung*, xxx (1977), 118–21, 158–60
- J.-G. Prod'homme: *Les sonates pour piano de Beethoven (1782–1823): histoire et critique* (Paris, 1937)
- H. Mersmann: *Musikhören* (Potsdam, 1938, 2/1952)
- G.W. Cooper: *An Introduction to the Analysis of Certain Contemporary Harmonic Practices* (diss., Harvard U., 1939)

- A. Gabeaud: *Guide pratique d'analyse musicale* (Paris, 1940)
- A. Schering: *Das Symbol in der Musik* (Leipzig, 1941)
- J. Schillinger: *The Schillinger System of Musical Composition*, ed. L. Dowling and A. Shaw (New York, 1941, 3/1946/R)
- D.F. Tovey: *A Musician Talks* (London, 1941/R)
- A. Schoenberg: *Models for Beginners in Composition* (Los Angeles, 1942, enlarged 2/1943, rev. 3/1972 by L. Stein)
- O. Messiaen: *Technique de mon langage musical* (Paris, 1944; Eng. trans., 1956)
- D.F. Tovey: *Essays in Musical Analysis: Chamber Music*, ed. H.J. Foss (London, 1944/R)
- D.F. Tovey: *Musical Articles from the Encyclopaedia Britannica* [14th edn.], ed. H.J. Foss (London, 1944/R as *The Forms of Music*)
- A.T. Katz: *Challenge to Musical Tradition: a New Concept of Tonality* (New York and London, 1945/R)
- M. Weingart: 'Etude du langage parlé suivi du point de vue musical avec considération particulière du Tchèque', *Travaux du Cercle linguistique de Copenhague*, i (1945), 172
- H. Federhofer: 'Die Musiktheorie Heinrich Schenkers', *SMz*, lxxxvii (1947), 265
- W. Koch: 'Inhaltliche oder formale Analyse? (Zur Krise des musikalischen Hörens)', *Musica*, i (1947), 192–5
- M. McMullin: 'The Symbolic Analysis of Music', *MR*, viii (1947), 25–35
- E. Oster: 'The Fantaisie-Improptu: a Tribute to Beethoven', *Musicology*, i (1947), 407–29; repr. in Beach (1983), 189–207
- L.G. Ratner: *Harmonic Aspects of Classic Form* (diss., U. of California, Berkeley, 1947); see also *JAMS*, ii (1949), 159–68
- N. Slonimsky: *Thesaurus of Scales and Melodic Patterns* (New York, 1947)
- K. von Fischer: *Die Beziehungen von Form und Motiv in Beethovens Instrumentalwerken* (Strasbourg, 1948, 2/1972)
- M.E. Brockhoff: 'Zur Methodik der musikwissenschaftlichen Analyse', *IMSCR IV: Basle 1949*, 80–82
- B.H. Bronson: 'Mechanical Help in the Study of Folk Song', *Journal of American Folklore*, lxii (1949), 81–6
- K. Jeppesen: 'Zur Kritik der klassischen Harmonielehre', *IMSCR IV: Basle 1949*, 23–34
- M. Mann: 'Schenker's Contribution to Music Theory', *MR*, x (1949), 3–26
- Newman: *Wagner Nights* (London, 1949/R)
- E. Oster: 'The Dramatic Character of the Egmont Overture', *Musicology*, ii (1949), 269–85; repr. in Beach (1983), 209–22
- A. Sychra: 'Lidová píseň s hlediska semiologického' [Folksong from the semiological angle], *Slovo a slovesnost*, xi (1948–9), 7–23; Fr. trans. in *Musique en jeu*, no.10 (1973), 12–33
- H.B. Buys: 'Gestallensymboliek en diminutietechniek', *Mens en melodie*, v (1950), 321–4
- H. Federhofer: *Beiträge zur musikalischen Gestaltanalyse* (Graz, 1950)
- H. Grabner: *Musikalische Werkbetrachtung* (Stuttgart, 1950)
- A. Schmitz: *Die Bildlichkeit der wortgebundenen Musik Johann Sebastian Bachs* (Mainz, 1950/R)
- A. Schoenberg: *Style and Idea*, ed. D. Newlin (New York, 1950, enlarged 2/1975 by L. Stein)
- F. Smend: *Johann Sebastian Bach bei seinem Namen gerufen* (Kassel, 1950, 3/1966)
- J. Kerman: 'Counsel for the Defense [of Tovey]', *Hudson Review*, iii (1950–51), 438–46
- J. Chailley: *Traité historique d'analyse musicale* (Paris, 1951, rev. 2/1977 as *Traité historique d'analyse harmonique*; Eng. trans., 1986)
- E. Ratz: *Einführung in die musikalische Formenlehre: über Formprinzipien in den Inventionen und Fugen J.S. Bachs und ihre Bedeutung für die Kompositionstechnik Beethovens* (Vienna, 1951, 3/1973)
- R. Réti: *The Thematic Process in Music* (New York, 1951/R)

- W. Braun: Johann Mattheson und die Aufklärung (diss., U. of Halle, 1952)
- S. Levarie: Mozart's *Le nozze di Figaro*: a Critical Analysis (Chicago, 1952/R)
- M. d'Ollone: *Le langage musicale* (Paris, 1952)
- J. Rufer: *Die Komposition mit zwölf Tönen* (Berlin, 1952; Eng. trans., 1954, rev. 2/1969/R)
- F. Salzer: *Structural Hearing: Tonal Coherence in Music* (New York, 1952, 2/1962) [review by M. Babbitt in *JAMS*, v (1952), 260–65]
- J.N. David: *Die Jupiter-Symphonie: eine Studie über die thematisch-melodischen Zusammenhänge* (Göttingen, 1953, 4/1960)
- C.T. Davie: *Musical Structure and Design* (London, 1953/R)
- V.H. Talley: 'A Critique of Musical Analysis', *JAMS*, vi (1953), 87 only
- A. Schoenberg: *Structural Functions of Harmony* (London, 1954, rev. 2/1969 by L. Stein)
- M. Babbitt: 'Some Aspects of Twelve-Tone Composition', *The Score*, no.12 (1955), 53–61
- A. Feil: *Satztechnische Fragen in den Kompositionslehren von F.E. Niedt, J. Riepel und H. Chr. Koch* (Heidelberg, 1955)
- A. Forte: *Contemporary Tone-Structures* (New York, 1955)
- E. Lendvai: *Bartók stilusa [Bartók's style]* (Budapest, 1955; rev. Eng. trans., 1971/R as Béla Bartók: an analysis of his Music)
- E. Ratz: 'Zum Formproblem bei Gustav Mahler: eine Analyse des ersten Satzes der IX. Symphonie', *Mf*, viii (1955), 169–77
- A.A. Reformatzky: 'Rech'i muz'ika v penii' [Musical speech in song], *Voprosi kul'turi rechi*, ed. S.I. Ozegov (Moscow, 1955), i, 172–99
- G. Rochberg: *The Hexachord and its Relation to the Twelve-Tone Row* (Bryn Mawr, PA, 1955)
- M. Ruhnke: *Joachim Burmeister: ein Beitrag zur Musiklehre um 1600* (Kassel, 1955)
- R. Guldenstein: 'Synthetische Analyse', *SMz*, xcvi (1956), 205–7
- H. Keller: 'KV503: the Unity of Contrasting Themes and Movements', *MR*, xvii (1956), 48–58, 120–29
- L.B. Meyer: *Emotion and Meaning in Music* (Chicago, 1956)
- A.A. Moles: 'Informationstheorie der Musik', *Nachrichtentechnische Fachberichte*, iii (1956), 47–55
- R.C. Pinkerton: 'Information Theory and Melody', *Scientific American*, cxciv (1956), 77–8, 80, 82, 84, 86
- L.G. Ratner: 'Eighteenth-Century Theories of Musical Period Structure', *MQ*, xlii (1956), 439–54
- E. Ratz: 'Zum Formproblem bei Gustav Mahler: eine Analyse des Finales der VI. Symphonie', *Mf*, ix (1956), 156–71; repr. in T.W. Adorno and others: *Gustav Mahler* (Tübingen, 1966), 90–141; Eng. trans. in *MR*, xxix (1968), 34–48
- R. Réti: 'The Role of Duothematicism in the Evolution of Sonata Form', *MR*, xvii (1956), 110–19
- G. Springer: 'Language and Music: Parallels and Divergences', For Roman Jakobson, ed. M. Halle and others (*The Hague*, 1956), 504–13
- R. Traimer: 'Zum Problem der musikalischen Werkanalyse', *NZM*, Jg.117 (1956), 621–3
- H. Keller: 'A Slip of Mozart's: its Analytical Significance', *Tempo*, no.42 (1956–7), 12–15
- L.B. Meyer: 'Meaning in Music and Information Theory', *Journal of Aesthetics and Art Criticism*, xv (1956–7), 412–24; repr. as *Music, the Arts and Ideas* (Chicago, 1967), chap.1
- V. Zuckermandl: *Sound and Symbol*, i: *Music and the External World*, ii: *Man the Musician* (Princeton, NJ, 1956–73)
- J.N. David: *Die zweistimmigen Inventionen von Johann Sebastian Bach* (Göttingen, 1957)
- H. Degen: *Handbuch der Formenlehre* (Regensburg, 1957)
- H. Keller: 'Functional Analysis: its Pure Application', *MR*, xviii (1957), 202–6; see also xxi (1960), 73–6, 237–9
- H. Keller: 'The Musical Analysis of Music', *The Listener* (29 Aug 1957)
- H. Keller: 'Wordless Analysis', *London Musical Events*, xii/12 (1957), 26–7

- J. LaRue: 'A System of Symbols for Formal Analysis', JAMS, x (1957), 25–8; see also xix (1966), 403–8
- L.G. Ratner: *Music: the Listener's Art* (New York, 1957, 3/1977)
- H. Keller: 'Knowing Things Backwards', *Tempo*, no.46 (1957–8), 14–20
- E. Coons and D. Kraehenbuehl: 'Information as a Measure of Structure in Music', JMT, ii (1958), 127–61
- H. Federhofer: 'Die Funktionstheorie H. Riemanns und die Schichtenlehre H. Schenkers', IMSCR VII: Cologne 1958, 183–4
- R. Francès: *La perception de la musique* (Paris, 1958, 2/1972; Eng. trans., 1988)
- W. Fucks: *Mathematische Analyse der Formalstruktur von Musik* (Cologne, 1958)
- L.A. Hiller: *On the Use of a High-Speed Electronic Digital Computer for Musical Composition* (diss., U. of Illinois, 1958)
- H. Keller: 'The Home-Coming of Musical Analysis', MT, xcix (1958), 657–8
- H. Keller: 'Wordless Functional Analysis: the First Year', MR, xix (1958), 192–200
- H. Lenneberg: 'Johann Mattheson on Affect and Rhetoric in Music', JMT, ii (1958), 47–84, 193–236
- A.A. Moles: *Théorie de l'information et perception esthétique* (Paris, 1958, 2/1972; Eng. trans., 1966)
- B. Nettl: 'Some Linguistic Approaches to Musical Analysis', JIFMC, x (1958), 37–41
- R. Réti: *Tonality, Atonality, Pantonality: a Study of some Trends in Twentieth Century Music* (London and New York, 1958/R, 2/1960)
- W.H. Reynolds: 'Unity in Music', JMT, ii (1958), 97; see also reply by W. Gettel, 240; iii (1959), 140–47
- Roland-Manuel: 'L'analyse musicale: langage, styles et formes', *Précis de musicologie*, ed. J. Chailley (Paris, 1958), 332–7
- J.E. Youngblood: 'Style as Information', JMT, ii (1958), 24–35
- D. Kraehenbuehl and E. Coons: 'Information as a Measure of Experience of Music', *Journal of Aesthetics and Art Criticism*, xvii (1958–9), 510–22
- J. Chailley: 'Essai sur les structures mélodiques', RdM, xlv (1959), 139–75
- D. Cooke: *The Language of Music* (Oxford, 1959/R)
- M. van Crevel, ed.: Jacob Obrecht: *Opera omnia*, i/6: *Missa 'Sub tuum presidium'* (Amsterdam, 1959); *Opera omnia*, i/7: *Missa 'Maria Zart'* (Amsterdam, 1964)
- J.N. David: *Die dreistimmigen Inventionen von Johann Sebastian Bach* (Göttingen, 1959)
- H. Eimert: 'Debussy's "Jeux"', *Die Reihe*, v (1959), 5–22; Eng. trans. in *Die Reihe*, v (1961), 3–20
- A. Forte: 'Schenker's Conception of Musical Structure', JMT, iii (1959), 1–30; repr. in Yeston (1977), 3–37
- D. Lewin: 'Intervallic Relations between Two Collections of Notes', JMT, iii (1959), 298–301
- F.B. Mâche: 'Connaissance des structures sonores', ReM, no.244 (1959), 17–25
- W. Meyer-Eppler: *Grundlagen und Anwendungen der Informationstheorie* (Berlin, 1959, 2/1969)
- G. Rochberg: 'The Harmonic Tendency of the Hexachord', JMT, iii (1959), 208–30
- N. Ruwet: 'Contradictions du langage sériel', RBM, xiii (1959), 83–97; repr. in *Langage, musique, poésie* (Paris, 1972), 23–40
- R. Travis: 'Towards a New Concept of Tonality', JMT, iii (1959), 257–84; see reply by E. Oster, iv (1960), 85–98
- L. Treitler: 'Harmonic Procedure in the Fourth Quartet of Béla Bartók', JMT, iii (1959), 292–8
- A. Walker: 'Unconscious Motivation in the Composing Process', MR, xx (1959), 277–81
- M. Babbitt: 'Twelve-Tone Invariants as Compositional Determinants', MQ, xlvi (1960), 246–59; repr. in *Problems of Modern Music*, ed. P.H. Lang (New York, 1960), 108–21
- E.T. Cone: 'Analysis Today', MQ, xlvi (1960), 172–88; repr. in *Problems of Modern Music*, ed. P.H. Lang (New York, 1960), 34–50

- G.W. Cooper and L.B. Meyer: *The Rhythmic Structure of Music* (Chicago, 1960)
- C. Dahlhaus: 'Zur Kritik musiktheoretischer Allgemeinprinzipien', *Musikalische Zeitfragen*, ix (1960), 68
- H. Hanson: *Harmonic Materials of Modern Music: Resources of the Tempered Scale* (New York, 1960)
- H. Keller: 'The Principles of Composition (I)', *The Score*, no.26 (1960), 35–45
- H. Keller: 'Wordless Functional Analysis: the Second Year and Beyond', *MR*, xxi (1960), 73–6, 237–9
- D. Lewin: 'The Intervallic Content of a Collection of Notes', *JMT*, iv (1960), 98–101
- A.B. Lord: *The Singer of Tales* (Cambridge, MA, 1960/R)
- Q.R. Nordgren: 'A Measure of Textural Patterns and Strengths', *JMT*, iv (1960), 19–31
- J. Nordmark: 'New Theories of Form and the Problem of Thematic Identities', *JMT*, iv (1960), 210–17
- A. Webern: *Der Weg zur neuen Musik* (Vienna, 1960, 2/1963; Eng. trans., 1963) [lectures]
- E. Ansermet: *Les fondements de la musique dans la conscience humaine* (Neuchâtel, 1961)
- M. Babbitt: 'Set Structure as a Compositional Determinant', *JMT*, v (1961), 72–94
- C. Bean: *Information Theory Applied to the Analysis of a Particular Formal Process in Tonal Music* (diss., U. of Illinois, 1961)
- P. Benary: *Die deutsche Kompositionslehre des 18. Jahrhunderts* (Leipzig, 1961)
- I. Bengtsson: 'On Relationships between Tonal and Rhythmic Structures in Western Multipart Music', *STMf*, xliii (1961), 49–76
- A. Forte: *The Compositional Matrix* (Baldwin, NY, 1961/R)
- H. Goldschmidt: 'Zur Methodologie der musikalischen Analyse', *BMw*, iii/4 (1961), 3–30
- D. Martino: 'The Source Set and its Aggregate Formations', *JMT*, v (1961), 224–79
- E. Oster: 'Register and the Large-Scale Connection', *JMT*, v (1961), 54–71; repr. in Yeston (1977), 54
- G. Rochberg: 'Set Structure as a Compositional Determinant', *JMT*, v (1961), 72–94
- J.E. Cohen: 'Information Theory and Music', *Behavioural Science*, vii (1962), 137–63
- J.N. David: *Das wohltemperierte Klavier: der Versuch einer Synopsis* (Göttingen, 1962)
- H. Federhofer: 'Johann Joseph Fux als Musiktheoretiker', *Hans Albrecht in Memoriam*, ed. W. Brennecke and H. Haase (Kassel, 1962), 109–15
- G. Goewey and J. Kucaba: *Understanding Musical Form* (Dubuque, IA, 1962)
- R. Jakobson: 'Musikwissenschaft und Linguistik (1932)', *Selected Writings*, i (Monton, 1962, 2/1971)
- E. Karkoschka: 'Musik und Semantik', *Melos*, xxxii (1962), 252–9
- W. Kolneder: 'Visuelle und auditive Analyse', *Der Wandel des musikalischen Hörens* (Berlin, 1962, 2/1965), 57–66
- J. LaRue: 'On Style Analysis', *JMT*, vi (1962), 91–107
- H. Lemacher and H. Schröder: *Formenlehre der Musik* (Cologne, 1962, 2/1968/R; Eng. trans., rev. 1967 by R. Kolben)
- G. Madell: 'Thematic Unity and the Language of Music', *MR*, xxiii (1962), 30–33
- W. Meyer-Eppler: 'Informationstheoretische Probleme der musikalischen Kommunikationen', *Die Reihe*, viii (1962), 7–10; Eng. trans. in *Die Reihe*, viii (1968), 7–10
- A. Palm: 'Mozart und Haydn in der Interpretation Momignys', *GfMKB*: Kassel 1962, 187–95
- G. Perle: *Serial Composition and Atonality: an Introduction to the Music of Schoenberg, Berg, and Webern* (Berkeley and London, 1962, 6/1991)
- L.G. Ratner: *Harmony: Structure and Style* (New York, 1962)
- L. Stein: *Structure and Style: the Study and Analysis of Musical Forms* (Evanston, IL, 1962, enlarged 2/1979) [see also companion book *Anthology of Musical Forms* (Evanston, IL, 1962)]
- A. Walker: *A Study in Musical Analysis* (London, 1962)

- A. Forte: 'Context and Continuity in an Atonal Work: a Set-Theoretic Approach', PNM, i/2 (1962–3), 72–82
- M. Kassler: 'A Sketch of the Formalized Use of Languages for the Assertion of Music', PNM, i/2 (1962–3), 83–94
- A. Palm: 'Mozarts Streichquartett d-moll, KV421, in der Interpretation Momignys', MJB 1962–3, 256–79
- P. Westergaard: 'Some Problems in Rhythmic Theory and Analysis', PNM, i/1 (1962–3), 180–91; repr. in *Perspectives on Contemporary Music Theory*, ed. B. Boretz and E.T. Cone (New York, 1972), 226–37
- R. Donington: *Wagner's 'Ring' and its Symbols: the Music and the Myth* (London, 1963, enlarged 3/1974/R)
- P. Rummenhöller: *Moritz Hauptmann als Theoretiker: eine Studie zum erkenntniskritischen Theoriebegriff in der Musik* (Wiesbaden, 1963)
- I. Xenakis: *Musiques formelles: nouveaux principes formels de composition musicale* (Paris, 1963, 2/1981; Eng. trans., enlarged 1971 as *Formalized Music: Thought and Mathematics in Composition*, 2/1992)
- R. Zapirov: *Kibernetika i muzika* (Moscow, 1963); Eng. trans. in PNM, vii/2 (1968–9), 115–54
- M. Babbitt: 'Remarks on Recent Stravinsky', PNM, ii/2 (1963–4), 35–55; repr. in *Perspectives on Schoenberg and Stravinsky*, ed. B. Boretz and E.T. Cone (Princeton, NJ, 1968, 2/1972), 165–85
- A. Berger: 'Problems of Pitch Organization in Stravinsky', PNM, ii/1 (1963–4), 11–42
- K. Stockhausen: *Texte*, i: *Texte zur elektronischen und instrumentalen Musik*; ii: *Texte zu eigenen Werken, zur Kunst anderer, Aktuelles*; iii: *Texte zur Musik*, 1963–70; iv: *Texte zur Musik*, 1970–77, ed. D. Schnebel (Cologne, 1963–78, 2/1975)
- P. Boulez: *Penser la musique aujourd'hui* (Paris, 1964/R; Eng. trans., 1971)
- A. Forte: 'A Theory of Set-Complexes for Music', JMT, viii (1964), 136–83; see also discussion, ix (1965), 163–71
- H. Heckmann: 'Neue Methoden der Verarbeitung musikalischer Daten', Mf, xvii (1964), 381–3
- L.A. Hiller: *Informationstheorie und Computermusik*, DBNM, viii (1964)
- R. Kluge: 'Definition der Begriffe Gestalt und Intonation', BMw, vi (1964), 85–100
- C. Lévi-Strauss: *Le cru et le cuit* (Paris, 1964; Eng. trans., 1969/Ras *The Raw and the Cooked*), esp. 14–32
- G. Saint-Guirons: 'Quelques aspects de la musique considérée d'un point de vue linguistique (recherche d'une analyse musicale distinctive)', *Etudes de linguistique appliquée*, iii (1964), 12
- H.E. Smither: 'The Rhythmic Analysis of 20th-Century Music', JMT, viii (1964), 54–88
- J. Tenney: *Meta (+) Hodos: a Phenomenology of Twentieth Century Musical Materials and an Approach to the Study of Form* (New Orleans, 1964, rev. 2/1986/Red. L. Plansky)
- R.E. Tyndall: *Musical Form* (Boston, 1964/R)
- F. Winckel: 'Die informationstheoretische Analyse musikalischer Strukturen', Mf, xvii (1964), 1–14
- M. Babbitt: 'The Structure and Functions of Music Theory I', *College Music Symposium*, v (1965), 49–60; repr. in *Perspectives on Contemporary Music Theory*, ed. B. Boretz and E.T. Cone (New York, 1972), 10–21
- C. Dahlhaus: 'Über das Analysieren neuer Musik: zu Schoenbergs Klavierstücken op.11, 1 und op.33a: Fortschritt und Rückbildung in der deutschen Musikerziehung', *Vorträge der 6. Bundesschulmusikwoche: Bonn 1965*, 224–36
- C. Deliège: 'La musicologie devant le structuralisme', *L'arc*, no.26 (1965), 45
- A. Forte: 'The Domain and Relations of Set-Complex Theory', JMT, ix (1965), 173–80
- W. Fucks and J. Lauter: *Exaktwissenschaftliche Musikanalyse* (Cologne, 1965)
- H. Kaufmann: 'Fortschritt und Reaktion in der Lehre Heinrich Schenkers', *NZM*, Jg.126 (1965), 5–9; *Das Orchester*, xiii (1965), 44

- Hermann Keller: *Das Wohltemperierte Klavier von J.S. Bach* (Kassel, 1965; Eng. trans., 1976)
- W. Kolneder: 'Zur Geschichte der Analyse musikalischer Kunstwerke', *SMz*, cv (1965), 68–73
- L. Knopoff: 'Some Technological Advances in Musical Analysis', *IFMC Conference: Budapest 1964* [*SMH*, vii (1965)], 301–7
- J. Selleck and R. Bakeman: 'Procedures for the Analysis of Form: two Computer Applications', *JMT*, ix (1965), 281–93
- R. Teitelbaum: 'Intervallic Relations in Atonal Music', *JMT*, ix (1965), 72–127
- R. Travis: 'Directed Motion in Schoenberg and Webern', *PNM*, iv/2 (1965–6), 85–9
- W. Berry: *Form in Music: an Examination of Traditional Techniques of Musical Structure and their Application in Historical and Contemporary Styles* (Englewood Cliffs, NJ, 1966, 2/1986)
- H. Boatwright and E. Oster: 'Analysis Symposium', *JMT*, x (1966), 18–53 [analysis of Mozart, K355]
- P. Boulez: *Relevés d'apprenti*, ed. P. Thévenin (Paris, 1966; Eng. trans., 1968, 1991)
- R.L. Crocker: *A History of Musical Style* (New York, 1966)
- C. Deliège: 'Approche d'une sémantique de la musique', *RBM*, xx (1966), 21–42
- K.-E. Eicke: *Der Streit zwischen Adolf Bernhard Marx und Gottfried Wilhelm Fink um die Kompositionslehre* (Regensburg, 1966)
- A. Forte: 'A Program for the Analytic Reading of Scores', *JMT*, x (1966), 330–64
- A. Forte: 'Computer-Implemented Analysis of Musical Structure', *Computer Applications in Music: Morgantown, WV, 1966*, 29–42
- L.A. Hiller and C. Bean: 'Information Theory Analyses of Four Sonata Expositions', *JMT*, x (1966), 96–137
- W. Keller: 'Heinrich Schenkers Harmonielehre', *Beiträge zur Musiktheorie des 19. Jahrhunderts*, ed. M. Vogel (Regensburg, 1966), 203–32
- R. Kluge: 'Volksliedanalyse und -systematisierung mit Hilfe eines Rechenautomaten', *GfMKB: Leipzig 1966*, 458–66
- M. McLean: 'A New Method of Melodic Interval Analysis as Applied to Maori Chant', *EthM*, x (1966), 174–90
- D. Mensteli Hsu: 'Ernst Kurth and his Concept of Music as Motion', *JMT*, x (1966), 2–17
- J. Rothgeb: 'Some Uses of Mathematical Concepts in Theories of Music', *JMT*, x (1966), 200–215
- P. Rummenhöller: 'Der dialektische Theoriebegriff: zur Verwickelung Hegelschen Denkens in Moritz Hauptmanns Musiktheorie', *GfMKB: Leipzig 1966*, 387–91
- N. Ruwet: 'Méthodes d'analyse en musicologie', *RBM*, xx (1966), 65–90; repr. in *Langage, musique, poésie* (Paris, 1972); Eng. trans. in *MAN*, vi (1987), 3–36
- P. Schaeffer: *Traité des objets musicaux: essai interdisciplinaires* (Paris, 1966)
- E. Seidel: 'Die Harmonielehre Hugo Riemanns', *Beiträge zur Musiktheorie des 19. Jahrhunderts*, ed. M. Vogel (Regensburg, 1966), 39–92
- W. Thomson: 'The Problem of Music Analysis and Universals' *College Music Symposium*, vi (1966), 89–107
- L. Treitler: 'Music Analysis in an Historical Context', *ibid.*, 75–88
- A. Walker: *An Anatomy of Musical Criticism* (London, 1966)
- J. Baur: 'Über Anton Weberns "Bagatellen für Steichquartett"', *Neue Wege der musikalischen Analyse*, ed. R. Stephan (Berlin, 1967), 62–8
- P. Bergquist: 'Mode and Polyphony around 1500: Theory and Practice', *Music Forum*, i (1967), 99–161
- S. Borris: 'Probleme der traditionellen Harmonielehre', *Probleme des musiktheoretischen Unterrichts*, ed. R. Stephan (Berlin, 1967), 23
- H.A. Brockhaus: 'Probleme der musikalischen Analyse', *MG*, xvii (1967), 433–46

- C. Dahlhaus: 'Zur Rhythmik in Beethovens Diabelli-Variationen'; 'Schoenbergs Lied "Streng ist uns das Glück und Spröde"', *Neue Wege der musikalischen Analyse*, ed. R. Stephan (Berlin, 1967), 18, 45–52
- A. Daniélou: *Sémantique musicale (essai de psychologie auditive)* (Paris, 1967, 2/1978)
- K.G. Fellerer: *Klang und Struktur in der abendländischen Musik* (Cologne, 1967)
- R. Harweg: 'Sprache und Musik', *Poetica*, i (1967), 390 [see also *ibid.*, 556 and ii (1968), 433]; Eng. trans. of orig. article in *Foundations of Language*, iv (1968), 270
- M. Kassler: *A Trinity of Essays: toward a Theory that is the Twelve-Note Class System; toward Development of a Constructive Tonality Theory based on Writing by Heinrich Schenker; toward a Simple Programming Language for Musical Information Retrieval* (diss., Princeton U., 1967)
- K. Kropfinger: 'Zur thematischen Funktion der langsamen Einleitung bei Beethoven', *Colloquium amicorum: Joseph Schmidt-Görg*, ed. S. Kross and H. Schmidt (Bonn, 1967), 197–216
- J. LaRue: 'Two Problems in Musical Analysis: the Computer Lends a Hand', *Computers in Humanistic Research*, ed. E.A. Bowles (Englewood Cliffs, NJ, 1967), 194–203
- Z. Lissa: 'Hegel und das Problem der Formintegration in der Musik', *Festschrift für Walter Wiora*, ed. L. Finscher and C.-H. Mahling (Kassel, 1967), 112–19
- L.B. Meyer: *Music, the Arts, and Ideas: Patterns and Predictions in Twentieth-Century Culture* (Chicago, 1967)
- W.J. Mitchell: 'The Tristan Prelude: Techniques and Structure', *Music Forum*, i (1967), 162–203
- D. de la Motte: 'Reform der Formenlehre?', *Probleme des musiktheoretischen Unterrichts*, ed. R. Stephan (Berlin, 1967), 30–39
- R. Réti: *Thematic Patterns in Sonatas of Beethoven*, ed. D. Cooke (London, 1967/R)
- J. Rothgeb: 'Some Ordering Relationships in the Twelve-Tone System', *JMT*, xi (1967), 176–97
- P. Rummenhöller: *Musiktheoretisches Denken im 19. Jahrhundert: Versuch einer Interpretation erkenntnistheoretischer Zeugnisse in der Musiktheorie* (Regensburg, 1967)
- N. Ruwet: 'Musicologie et linguistique', *Revue internationale des sciences sociales*, xix (1967), 85–93
- N. Ruwet: 'Quelques remarques sur le rôle de la répétition dans la syntaxe musicale', *To Honor Roman Jakobson* (The Hague, 1967), 1693–703
- F. Salzer: 'Tonality in Early Medieval Polyphony: towards a History of Tonality', *Music Forum*, i (1967), 35–98
- N. Schiødt and B. Svejgaard: 'Application of Computer Techniques to the Analysis of Byzantine Sticherarion Melodies', *Elektronische Datenverarbeitung in der Musikwissenschaft*, ed. H. Heckmann (Regensburg, 1967), 187–201
- A. Schoenberg: *Fundamentals of Musical Composition*, ed. G. Strang and L. Stein (London, 1967)
- I. Spink: *An Historical Approach to Musical Form* (London, 1967)
- R. Stephan, ed.: *Neue Wege der musikalischen Analyse: acht Betrachtungen von L.U. Abraham, J. Baur, C. Dahlhaus, H. Kaufmann und R. Stephan* (Berlin, 1967)
- R. Stephan, ed.: *Versuche musikalischer Analysen: sieben Beiträge von P. Benary, S. Borris, D. de la Motte, H. Enke, H.-P. Raiss und R. Stephan* (Berlin, 1967)
- W. Stockmeier: *Musikalische Formprinzipien: Formenlehre* (Cologne, 1967, 2/1973)
- P.A. Tove, L. Ejdesjö and A. Svärðström: 'Frequency and Time Anaysis of Polyphonic Music', *JASA*, xli (1967), 1265–71
- V. Tsukkerman: 'Vidī tselostnogo analiza' [Aspects of integrated musical analysis], *SovM* (1967), no.4, pp.100–06
- B. Archibald: 'The Harmony of Berg's "Reigen"', *PNM*, vi/2 (1967–8), 73–91
- E.T. Cone: 'Beyond Analysis', *PNM*, vi/1 (1967–8), 33–51; see responses by D. Lewin, vii/2 (1968–9), 59–69, and Cone, *ibid.*, 70–72
- E. Regener: 'Layered Music-Theoretic Systems', *PNM*, vi/1 (1967–8), 52–62
- A. Whittall: 'Post-Twelve-Note Analysis', *PRMA*, xciv (1967–8), 1–17

- T.W. Adorno: *Berg: der Meister des kleinsten Übergangs* (Vienna, 1968; Eng. trans., 1991)
- P. Barbaud: *La musique, discipline scientifique: introduction élémentaire à l'étude des structures musicales* (Paris, 1968)
- B. Churgin: 'Francesco Galeazzi's Description (1796) of Sonata Form', *JAMS*, xxi (1968), 181–99
- E.T. Cone: *Musical Form and Musical Performance* (New York, 1968) [see also commentary by Cone, *Music Theory Spectrum*, vii (1985), 149–58]
- U. Eco: *La struttura assente* (Milan, 1968; enlarged Eng. trans., 1976 as *A Theory of Semiotics*)
- R.F. Erickson: 'Musical Analysis and the Computer', *JMT*, xii (1968), 240–63
- W. Fucks: 'Über formale Struktureigenschaften musikalischer Partituren', *Experimentelle Musik*: Berlin 1968, 33–58
- M. Henze: *Studien zu den Messenkompositionen Johannes Ockeghems* (Berlin, 1968)
- M. Hughes, L. Moss and C. Schachter: 'Analysis Symposium: Moments Musicaux op.94, Franz Schubert', *JMT*, xii (1968), 184–239; see also xiii (1969), 128–39, 218–29; repr. in Yeston (1977), 141–201
- J. Kerman: 'Verdi's Use of Recurring Themes', *Studies in Music History: Essays for Oliver Strunk*, ed. H.S. Powers (Princeton, NJ, 1968/R), 495–510
- A. Lomax: *Folk Song Style and Culture* (Washington DC, 1968/R)
- D. de la Motte: *Musikalische Analyse* (Kassel, 1968/R) [with critical commentary by C. Dahlhaus]
- E. Ratz: 'Über die Bedeutung der funktionellen Formenlehre für die Erkenntnis des Wohltemperierten Klaviers', *Mf*, xxi (1968), 17–29
- L. Richter: 'Schoenbergs Harmonielehre und die "freie Atonalität"', *DJbM*, xiii (1968), 43–71
- F. Ritzel: *Die Entwicklung der "Sonatenform" im musiktheoretischen Schrifttum des 18. und 19. Jahrhunderts* (Wiesbaden, 1968)
- J. Rohwer: 'Zur Analyse neuer Musik', *Mf*, xxi (1968), 69–73
- C. Seeger: 'Factorial Analysis of the Song as an Approach to the Formation of a Unitary Field Theory', *JIFMC*, xx (1968), 33–9
- F.J. Smith: 'Vers une phénoménologie du son', *Revue de métaphysique et de morale*, iii (1968), 328
- T. Winograd: 'Linguistics and the Computer Analysis of Tonal Harmony', *JMT*, xii (1968), 2–49
- P. Batstone: 'Musical Analysis as Phenomenology', *PNM*, vii/2 (1968–9), 94–110
- J. LaRue: 'Fundamental Considerations in Style Analysis', *Notes*, xxv (1968–9), 447–62
- P. Aldrich: 'An Approach to the Analysis of Renaissance Music', *MR*, xxx (1969), 1–21
- S. Arom: 'Essai d'une notation des monodies à des fins d'analyse', *RdM*, lv (1969), 172–216
- D.W. Beach: 'Analysis Symposium', *JMT*, xiii (1969), 188–203 [analysis of Beethoven, op.53]
- R. Brinkman: *Arnold Schönberg: Drei Klavierstücke Op.11: Studien zur frühen Atonalität bei Schönberg* (Wiesbaden, 1969)
- H.A. Brockhaus: 'Probleme des Kategoriensystems', *BMw*, xi (1969), 245–57
- M. Cole: 'Momigny's Analysis of Haydn's Symphony no.103', *MR*, xxx (1969), 261–84
- M. Cole: 'Sonata-Rondo: the Formulation of a Theoretical Concept in the 18th and 19th Centuries', *MQ*, lv (1969), 180–92
- C. Dahlhaus: 'Wagners dramatisch-musikalischer Formbegriff', *Verdi-Wagner: Rome 1969* [*AnMc*, no.11 (1972)], 290–301
- H. Engel: 'Thematische Satzverbindungen zyklischer Werke bis zur Klassik', *Musa - mens - musici*: in *Gedenken an Walther Vetter*, ed. H. Wegener (Leipzig, 1969), 109–38
- R.F. Erickson: 'A General-Purpose System for Computer Aided Musical Studies', *JMT*, xiii (1969), 276–94
- H. Kaufmann: 'Zur Problematik der Werkgestalt in der Musik des 18. Jahrhunderts', *NZM*, Jg.130 (1969), 290–96
- H.B. Lincoln: 'The Computer and Music Research: Prospects and Problems', *Council for Research in Music Education Bulletin*, no.18 (1969), 1–9

- B. Lindblom and J. Sundberg: 'Towards a Generative Theory of Melody', *Speech Transmission Laboratory: Quarterly Progress and Status Report*, iv (1969), 53–86
- J. Mainka: 'Frühe Analysen zweier Stücke aus dem Wohltemperierten Klavier', *Musa – mens – musici: im Gedenken an Walther Vetter*, ed. H. Wegener (Leipzig, 1969), 177–83 [essays by J.A.P. Schulz, 1773]
- R.M. Mason: 'An Encoding Algorithm and Tables for the Digital Analysis of Harmony', *JRME*, xvii (1969), 286–300, 369–87
- R.P. Morgan: *The Delayed Structural Downbeat and its Effect on the Tonal and Rhythmic Structure of Sonata Form Recapitulation* (diss., Princeton U., 1969)
- F.R. Noske: *Forma formans: een structuuranalytische methode, toegepast op de instrumentale muziek van Jan Pieterszoon Sweelinck* (Amsterdam, 1969) [incl. Eng. summary]; Eng. trans., rev. in *IRASM*, vii (1976), 43–62
- F. Salzer and C. Schachter: *Counterpoint in Composition: the Study of Voice Leading* (New York, 1969)
- K.H. Wörner: *Das Zeitalter der thematischen Prozesse in der Geschichte der Musik* (Regensburg, 1969)
- B. Boretz: 'Meta-Variations: Studies in the Foundations of Musical Thought (I)', *PNM*, viii/1 (1969–70), 1–74; 'II: Sketch of a Musical System', viii/2 (1969–70), 49–111; 'III: Analytic Fallout (I)', xi/1 (1972–3), 146–223; 'IV: Analytic Fallout (II)', xi/2 (1972–3), 156–203
- W. Braun: 'Musiktheorie im 17./18. Jahrhundert als "öffentliche" Angelegenheit', *Über Musiktheorie*, ed. F. Zaminer (Cologne, 1970), 37–47
- J. Brincker: 'Statistical Analysis of Music: an Application of Information Theory', *STMf*, lii (1970), 53–7
- T. Clifton: 'An Application of Goethe's Concept of Steigerung to the Morphology of Diminution', *JMT*, xiv (1970), 166–89
- R.F.P. Erickson: *Rhythmic Problems and Melodic Structure in Organum purum: a Computer-Assisted Study* (diss., Yale U., 1970)
- A. Feil: 'Abmessung (und Art) der Einschnitte: Rhythmus in Beethoven's Satzbau', *GfMKB*: Bonn 1970, 33–7
- G. George: *Tonality and Musical Structure* (London and New York, 1970)
- F.E. Hansen: 'Musikalsk analyse ved hjælp af modeller', *STMf*, lii (1970), 50–53
- J. LaRue: *Guidelines for Style Analysis* (New York, 1970, 2/1992); see also 'The Quadrant Framework for Style Analysis in Music', *College Music Symposium*, xxi (1981), 40–47
- H.B. Lincoln, ed.: *The Computer and Music* (Ithaca, NY, 1970), esp. 115–295 [incl. analyses of works, ethnomusicological analyses, and studies in stylistic analysis]
- B. Lindblom and J. Sundberg: 'Towards a Generative Theory of Melody', *STMf*, lii (1970), 71–81
- L. Lockwood: 'A Stylistic Investigation of the Masses of Josquin Desprez with the Aid of the Computer: a Progress Report', *Musicology and the Computer*, ed. B.S. Brook (New York, 1970), 19–27
- L. Lockwood: 'The Autograph of the First Movement of Beethoven's Sonata for Violoncello and Pianoforte, Opus 69', *Music Forum*, ii (1970), 1–109
- H. Meyer: 'Analytische und/oder hermeneutische Werkbetrachtung?', *Musica* [Kassel], xxiv (1970), 346–8
- W.J. Mitchell: 'The Prologue to Orlando di Lasso's *Prophetiae Sibyllarum*', *Music Forum*, ii (1970), 264–73
- H. de la Motte-Haber: 'Typologien musikalischen Verhaltens: ein Überblick', *ibid.*, 136–9
- Novack: 'Fusion of design and Tonal order in Mass and Motet: Josquin Desprez and Heinrich Isaac', *Music forum*, ii (1970), 187–263
- A. Pike: *A Phenomenological Analysis of Musical Experience and other Related Essays* (New York, 1970)

- H. Pousseur: *Fragments théoriques I sur la musique expérimentale* (Brussels, 1970)
- L.G. Ratner: *Classic Music: Expression, Form, and Style* (New York and London, 1970/R)
- E. Ratz: 'Analyse und Hermeneutik in ihrer Bedeutung für die Interpretation Beethovens', *ÖMz*, xxv (1970), 756–66; Eng. trans. in *MAn*, iii (1984), 243–54
- H.G. Rohrer: *Musikalische Stylanalyse auf der Grundlage eines Modelles für Lernprozesse* (Berlin, 1970)
- J. Rohwer: *Die harmonischen Grundlagen der Musik* (Kassel, 1970)
- H. Rösing: *Probleme und neue Wege der Analyse von Instrumenten- und Orchesterklängen* (Vienna, 1970)
- C. Schachter: 'Landini's Treatment of Consonance and Dissonance: a Study of Fourteenth-Century Counterpoint', *Music Forum*, ii (1970), 130–86
- I. Supićić: 'Matter and Form in Music', *IRASM*, i (1970), 149–58
- W. Thomson: 'Style Analysis: or the Perils of Pigeonholes', *JMT*, xiv (1970), 191–208
- R. Travis: 'Tonal Coherence in the First Movement of Bartók's Fourth String Quartet', *Music Forum*, ii (1970), 298–371
- B. Boretz: 'The Construction of a Musical Syntax', *PNM*, ix/1 (1970–71), 23–42; ix/2–x/1 (1971), 232–70
- B. Vermazen: 'Information Theory and Musical Value', *Journal of Aesthetics and Art Criticism*, xxix (1970–71), 367–70
- J. Blacking: 'Deep and Surface Structures in Venda Music', *YIFMC*, iii (1971), 91–108
- N. Böker-Heil: 'Ein algebraisches Modell des Durmoll tonalen Systems', *Kongress für Musiktheorie I: Stuttgart 1971*, 64–104
- E. Budde: *Anton Weberns Lieder Op.3: Untersuchungen zur frühen Atonalität bei Webern* (Wiesbaden, 1971)
- A. Clarkson and E. Laufer: 'Analysis Symposium: Brahms op.105/1', *JMT*, xv (1971), 2–57
- D. Cohen: 'Palestrina Counterpoint: a Musical Expression of Unexcited Speech', *JMT*, xv (1971), 84–111
- T. Kneif: 'Bedeutung, Struktur, Gegenfigur: zur Theorie des musikalischen "Meinens"', *IRASM*, ii (1971), 213–29
- A.J. Komar: *Theory of Suspensions: a Study of Metrical and Pitch Relations in Tonal Music* (Princeton, NJ, 1971)
- O.E. Laske: 'An Acoulogical Performance Model for Music', *Electronic Music Reports*, no.4 (1971), 31–64
- H. Lefebvre: 'Musique et sémiologie', *Musique en jeu*, no.4 (1971), 52–62
- J. Lester: *A Theory of Atonal Prolongations as Used in an Analysis of the Serenade, op.24, by Arnold Schoenberg* (diss., U. of Michigan, Ann Arbor, 1971)
- H.C. Longuet-Higgins and M. Steedman: 'On Interpreting Bach', *Machine Intelligence*, vi (1971), 221–41
- F.B. Mâche: 'Méthodes linguistiques et musicologie', *Musique en jeu*, no.5 (1971), 75–91
- J.-J. Nattiez: 'Lexique des termes linguistiques', *ibid.*, 93–8 [incl. bibliography of musical semiology]
- J.-J. Nattiez: 'Situation de la sémiologie musicale', *ibid.*, 3–18
- P. Nielsen: *Den musikalske formanalyse: fra A.B. Marx' 'Kompositionslehre' til vore dages strukturanalyse* (Copenhagen, 1971)
- D. Osmond-Smith: 'Music as Communication: Semiology or Morphology?', *IRASM*, ii (1971), 108–11
- L. Rappoport, A. Sokhor and Yu. Kholopov, eds.: *Teoreticheskiye problemī muzīkal'nīkh form i zhanrov* [Theoretical problems of musical form and genre] (Moscow, 1971)
- D. Rexroth: *Arnold Schönberg als Theoretiker der tonalen Harmonik* (Bonn, 1971)

- C. Rosen: *The Classical Style: Haydn, Mozart, Beethoven* (London and New York, 1971, enlarged 3/1997 with sound disc)
- J. Rothgeb: 'Design as a Key to Structure in Tonal Music', *JMT*, xv (1971), 230–53
- A. Salop: *Studies in the History of Musical Style* (Detroit, 1971)
- W. Seidel: 'Moritz Hauptmanns organische Lehre: Tradition, Inhalt und Geltung ihrer Prämisse', *IRASM*, ii (1971), 243–66
- S.W. Smoliar: *A Parallel Processing Model of Music Structures* (diss., MIT, 1971)
- I. Supićić: 'Expression and Meaning in Music', *IRASM*, ii (1971), 193–212
- I. Xenakis: *Musique, architecture* (Paris, 1971, 2/1976)
- A. Pike: 'The Perceptual Aspects of Motivic Structure in Music', *Journal of Aesthetics and Art Criticism*, xxx (1971–2), 79–81
- B. Alphonse: 'The Invariance Matrix as an Analytical Tool', *IMSCR XI: Copenhagen 1972*, i, 228–35
- M. Babbitt: 'Contemporary Music Composition and Music Theory as Contemporary Intellectual History', *Perspectives in Musicology*, ed. B.S. Brook, E.O.D. Downes and S. van Solkema (New York, 1972), 151–84
- I.D. Bent: 'Current Methods in Stylistic Analysis: Summary of Remarks', *IMSCR XI: Copenhagen 1972*, i, 43–5
- N. Böker-Heil: 'Musikalische Stilanalyse und Computer: einige grundsätzliche Erwägungen', 'Der Zustand polyphoner Strukturen: ein Beispiel automatischer Stilbeschreibung', *IMSCR XI: Copenhagen 1972*, i, 45–50, 108–20
- V. Chenoweth: *Melodic Perception and Analysis: a Manual on Ethnic Melody* (Ukarumpa, Papua New Guinea, 1972)
- L. Crickmore: 'The Musical Gestalt', *MR*, xxxiii (1972), 285–91
- F. Delalande: 'L'analyse des musiques électro-acoustiques', *Musique en jeu*, no.8 (1972), 50–56
- H.H. Eggebrecht: 'Zur Methode der musikalischen Analyse', *Erich Doflein Festschrift*, ed. L.U. Abraham (Mainz, 1972), 67–84
- E. Helm: 'The "Hamlet" Fantasy and the Literary Element in C.P.E. Bach's Music', *MQ*, lviii (1972), 277–96
- O.E. Laske: 'On Musical Strategies with a View to a Generative Theory of Music', *Interface*, i (1972), 111–25
- J. Maegaard: *Studien zur Entwicklung des dodekaphonen Satzes bei Arnold Schoenberg* (Copenhagen, 1972)
- J.-J. Nattiez: 'Is a Descriptive Semiotics of Music Possible?', *Language Sciences*, no.23 (1972), 1–7
- J.-J. Nattiez: 'La linguistique: voie nouvelle pour l'analyse musicale?', *Cahiers canadiens de musique/Canada Music Book*, no.4 (1972), 101; Eng. trans. in *IRASM*, iv (1973), 53–67
- P. Petrobelli: 'Per un'esegesi della struttura drammatica del "Trovatore"', *Studi verdiani III: Milan 1972*, 386–400; Eng. trans. in *MAn*, i (1982), 125–67
- H. Pousseur: *Musique, sémantique, société* (Paris, 1972)
- P. Rummenholler: 'Anmerkungen zur musikalischen Analyse', *Zeitschrift für Musiktheorie*, iii/1 (1972), 2–4
- N. Ruwet: *Langage, musique, poésie* (Paris, 1972) [incl. articles on music written 1959–67]
- L. Treitler: 'Methods, Style, Analysis', *IMSCR XI: Copenhagen 1972*, i, 61–70
- C. Wolff: 'Towards a Methodology of Dialectic Style Consideration: Preliminary Terminological and Historical Considerations', *ibid.*, 74–80
- A. Forte: 'Sets and Nonsets in Schoenberg's Atonal Music', *PNM*, xi/1 (1972–3), 43–64
- R. Cooper: 'Propositions pour un modèle transformationnel de description musicale', *Musique en jeu*, no.10 (1973), 70–90
- R. Court: 'Musique, mythe, langage', *Musique en jeu*, no.12 (1973), 45–58
- A. Forte: 'The Basic Interval Patterns', *JMT*, xvii (1973), 234–73

- A. Forte: *The Structure of Atonal Music* (New Haven, CT, 1973)
- G. Hausswald: *Musikalische Stilkunde* (Wilhelmshaven, 1973)
- R. Jackson: 'Music Theory: a Single or Multiple View?', *College Music Symposium*, xiii (1973), 65–9
- E. Karkoschka: 'Über Exaktheit in Musikanalyse', *Zeitschrift für Musiktheorie*, iv/2 (1973), 3–10
- J. Kramer: 'The Fibonacci Series in Twentieth-Century Music', *JMT*, xvii (1973), 110–48
- A. Labussière: *Codage des structures rythmo-mélodiques à partir de créations vocales* (Paris, 1973)
- O.E. Laske: *Introduction to a Generative Theory of Music* (Utrecht, 1973)
- L.B. Meyer: *Explaining Music: Essays and Explorations* (Berkeley, 1973)
- C. Mioreanu: "'Textkomposition": voie zéro de l'écriture musicale', *Musique en jeu*, no.13 (1973), 49–73
- J.-J. Nattiez: 'Analyse musicale et sémiologie: le structuralisme de Lévi-Strauss', *Musique en jeu*, no.12 (1973), 59–79
- J.-J. Nattiez: 'Trois modèles linguistiques pour l'analyse musicale', *Musique en jeu*, no.10 (1973), 3–11
- J.-J. Nattiez and L. Hirbour-Paguet: 'Analyse musicale et sémiologie: à propos du Prélude de "Pelléas"', *Musique en jeu*, no.10 (1973), 42–67
- W.-A. Schultz: 'Anmerkungen zur Stilanalyse', *Mf*, xxvi (1973), 241–3
- E.C. Verba: 'The Development of Rameau's Thoughts on Modulation and Chromatics', *JAMS*, xxvi (1973), 69–91
- A. Goehr: 'The Theoretical Writings of Arnold Schoenberg', *PRMA*, c (1973–4), 85–96
- D.W. Beach: 'The Origins of Harmonic Analysis', *JMT*, xviii (1974), 274–306
- H. Beck: *Methoden der Werkanalyse in Musikgeschichte und Gegenwart* (Wilhelmshaven, 1974)
- E.T. Cone: *The Composer's Voice* (Berkeley, 1974)
- P. Faltin and H.-P. Reinecke: *Musik und Verstehen: Aufsätze zur semiotischen Theorie, Ästhetik und Soziologie der musikalischen Rezeption* (Cologne, 1974)
- T. Fay: 'Context Analysis of Musical Gestures', *JMT*, xviii (1974), 124–51
- S.E. Gilbert: 'An Introduction to Trichordal Analysis', *JMT*, xviii (1974), 338–62
- D. Hayes: 'Rameau's "nouvelle méthode"', *JAMS*, xxvii (1974), 61–74
- G. Henneberg: *Theorien zur Rhythmik und Metrik in der Musik der Wiener Klassik* (Tutzing, 1974); repr. in *Mf*, xxvi (1973), 507–9
- S. Keil: 'Zum Begriff "Struktur" in der Musik', *Musica[Kassel]*, xxviii (1974), 324–8
- M. Porten: *Zum Problem der Form bei Debussy: Untersuchungen am Beispiel der Klavierwerke* (Munich, 1974)
- N. Ruwet: 'Théorie et méthodes dans les études musicales', *Musique en jeu*, no.17 (1974), 11–36
- A. Schering: *Vom Wesen der Musik: ausgewählte Aufsätze*, ed. K.M. Komma (Stuttgart, 1974)
- W.-A. Schultz: *Die freien Formen in der Musik des Expressionismus und Impressionismus* (Hamburg, 1974)
- S.W. Smoliar: 'Process Structuring and Music Theory', *JMT*, xviii (1974), 309–35
- J.R. Stevens: 'Theme, Harmony and Texture in Classic-Romantic Descriptions of Concerto First-Movement Form', *JAMS*, xxvii (1974), 25–60
- R. Travis and A. Forte: 'Analysis Symposium: Webern, *Orchestral Pieces* (1913), Movement I ("Bewegt")', *JMT*, xviii (1974), 2–43; continuation by E. Barkin, *ibid.*, xix (1975), 47–64
- L. Treitler: 'Homer and Gregory: the Transmission of Epic Poetry and Plainchant', *MQ*, lx (1974), 333–72
- J.A. Vertrees: 'Mozart's String Quartet K.465: the History of a Controversy', *CMc*, no.17 (1974), 96–114
- M. Wagner: *Die Harmonielehren der ersten Hälfte des 19. Jahrhunderts* (Regensburg, 1974)
- G.E. Wittlich: 'Interval Set Structure in Schoenberg's op.11, no.1', *PNM*, xiii/1 (1974–5), 41–56

- W. Berry and others: 'Analysis Symposium: Mozart Symphony no.40', In *Theory Only*, i/7 (1975), 8–36
- W. Braun: 'Kretzschmars Hermeneutik', *Beiträge zur musikalischen Hermeneutik*, ed. C. Dahlhaus (Regensburg, 1975), 33–9
- C. Dahlhaus: 'Some Models of Unity in Musical Form', *JMT*, xix (1975), 2–30
- R. Erickson: *Sound Structure in Music* (Berkeley, 1975)
- D. Lidov: *On Musical Phrase* (Montreal, 1975)
- J. Molino: 'Fait musical et sémiologie de la musique', *Musique en jeu*, no.17 (1975), 37–62
- J.A. Moorer: *On the Segmentation and Analysis of Continuous Musical Sound by Digital Computer* (diss., Stanford U., 1975)
- J.-J. Nattiez: 'Densité 21.5' de Varèse: essai d'analyse sémiologique (Montreal, 1975); Eng. trans. in *MAN*, i (1982), 243–340
- E. Sanders: 'The Early Motets of Philippe de Vitry', *JAMS*, xxviii (1975), 24–45
- A. Schoenberg: *Style and Idea: Selected Writings*, ed. L. Stein (London and New York, 1975/R)
- W. Seidel: *Über Rhythmustheorien der Neuzeit* (Berne, 1975)
- U. Siegele: *Kompositionsweise und Bearbeitungstechnik in der Instrumentalmusik Johann Sebastian Bachs* (Stuttgart, 1975)
- J.-M. Vaccaro: 'Proposition d'analyse pour une polyphonie vocale', *RdM*, lxi (1975), 35–8
- A.B. Wenk: *Analyses of Twentieth-Century Music, 1940–1970* (Ann Arbor, 1975; see also suppl. 1976, 2/1984)
- A. Whittall: 'Tonality and the Whole-Tone Scale in the Music of Debussy', *MR*, xxxvi (1975), 261–71
- G.E. Wittlich: 'Sets and Ordering Procedures in Twentieth-Century Music', *Aspects of Twentieth-Century Music*, ed. G.E. Wittlich (Englewood Cliffs, NJ, 1975), 388–476
- M. Yeston: 'Rubato and the Middleground', *JMT*, xix (1975), 286–301
- J. Kerman: 'Tovey's Beethoven', *American Scholar* (1975–6), wint., 795; repubd in *Beethoven Studies* 2, ii, ed. A. Tyson (London, 1977), 172–200
- P. Andraschke: *Gustav Mahlers IX Symphonie: Kompositionsprozess und Analyse* (Wiesbaden, 1976)
- N.K. Baker: 'Heinrich Koch and the Theory of Melody', *JMT*, xx (1976), 1–48
- D.W. Beach: 'Segmental Invariance and the Twelve-Tone System', *JMT*, xx (1976), 157–184
- W.E. Benjamin: 'Interlocking Diatonic Collections as a Source of Chromaticism in Late Nineteenth-Century Music', In *Theory Only*, i/11–12 (1976), 31–51
- L. Bernstein: *The Unanswered Question* (Cambridge, MA, 1976, 2/1992 as 6 video cassettes)
- W. Berry: *Structural Functions in Music* (Englewood Cliffs, NJ, 1976/R)
- R.D. Cogan and P. Escot: *Sonic Design: the Nature of Sound and Music* (Englewood Cliffs, NJ, 1976/R)
- J. Jiránek: 'Observations on the Theory and Historical and Contemporary Practice of Musical Analysis', *HV*, xiii (1976), 106–21
- R. Kamien: 'Aspects of the Recapitulation in Beethoven Piano Sonatas', *Music Forum*, iv (1976), 195–235
- M. Kassler: 'The Decidability of Languages that Assert Music', *PNM*, xiv/2–xv/1 (1976), 249–51 [Babbitt issue]
- E.B. Kohs: *Musical Form: Studies in Analysis and Synthesis* (Boston, 1976)
- J.-H. Lederer: 'Zu Hindemiths Idee einer Rhythmen- und Formenlehre', *Mf*, xxix (1976), 21–36
- D. Loeb: 'An Analytic Study of Japanese Koto Music', *Music Forum*, iv (1976), 335–93
- H.C. Longuet-Higgins: 'Perception of Melodies', *Nature*, cclxiii (1976), 646–53; repr. in *Machine Models of Music*, ed. S.M. Schwanauer and D.A. Levitt (Cambridge, MA, 1993), 471–95
- R.P. Morgan: 'Dissonant Prolongation: Theoretical and Compositional Precedents', *JMT*, xx (1976), 49–91

- J.-J. Nattiez: *Fondements d'une sémiologie de la musique* (Paris, 1976)
- C. Schachter: 'Rhythm and Linear Analysis: a Preliminary Study', *Music Forum*, iv (1976), 281–334
- H. Schenker: 'A Contribution to the Study of Ornamentation', [trans. Hedi Siegel], *Music Forum*, iv (1976), 1–140
- H. Schenker: 'The Largo of J.S. Bach's Sonata No. 3 for Unaccompanied Violin [BWV 1005]', *Music Forum*, iv (1976), 141–59
- W. Seidel: *Rhythmus: ein Begriffsbestimmung* (Darmstadt, 1976)
- G. Stefani: 'Analisi, semiosi, semiotica', *RIM*, xi (1976), 106–25
- M. Yeston: *The Stratification of Musical Rhythm* (New Haven, CT, 1976)
- J. Dunsby: 'Schoenberg's Premonition, op.22, no.4, in Retrospect', *Journal of the Arnold Schoenberg Institute*, i (1976–7), 137–49
- S.W. Smoliar and others: 'A LISP-Based System for the Study of Schenkerian Analysis', *Computers and the Humanities*, x (1976–7), 21–32
- R. Barthes: *Image – Music – Text*, ed. and trans. S. Heath (New York, 1977/R)
- W.E. Benjamin: 'Tonality without Fifths: Remarks on the First Movement of Stravinsky's Concerto for Piano and Wind Instruments', *In Theory Only*, ii/11–12 (1977), 53–70; iii/2 (1977–8), 9–31
- I.D. Bent: 'Analytical Thinking in the First Half of the Nineteenth Century', *Modern Musical Scholarship*: Oxford 1977, 151–66
- N. Böker-Heil: 'Computer-Simulation eines musikalischen Verstehensprozesses', *IMSCR XII*: Berkeley 1977, 324–30
- R. Chrisman: 'Describing Structural Aspects of Pitch-Sets Using Successive-Interval Arrays', *JMT*, xxi (1977), 1–28
- P. Faltin: 'Musikalische Syntax: ein Beitrag zum Problem des musikalischen Sinngehaltes', *AMw*, xxxiv (1977), 1–19
- I. Godt: 'Motivic Integration in Josquin's Motets', *JMT*, xxi (1977), 264–92
- A. Goehr: 'Schoenberg's "Gedanke" Manuscript', *Journal of the Arnold Schoenberg Institute*, ii (1977), 4–25
- M. Guck: 'Symmetrical Structures in op. 19/2', *In Theory Only*, ii/10 (1977), 29–34
- M. Kassler: 'Transferring a Tonality Theory to a Computer', *IMSCR XII*: Berkeley 1977, 339–47
- A. Keiler: 'The Syntax of Prolongation I', *In Theory Only*, iii/5 (1977), 3
- F. Lerdaahl and R. Jackendoff: 'Toward a Formal Theory of Tonal Music', *JMT*, xxi (1977), 111–71
- D. Lewin: 'A Label-Free Development for Pitch-Class Systems', *JMT*, xxi (1977), 29–48
- D. Lewin: 'Forte's Interval Vector, my Interval Function, and Regener's Common-Note Function', *JMT*, xxi (1977), 194–237
- E. Narmour: *Beyond Schenkerism: the Need for Alternatives in Music Analysis* (Chicago, 1977)
- G. Perle: *Twelve-Tone Tonality* (Berkely, 1977, rev. and enlarged 2/1996)
- M.J. Steedman: 'The Perception of Musical Rhythm and Metre', *Perception*, vi (1977), 555–71
- P.C. van den Toorn: 'Some Characteristics of Stravinsky's Diatonic Music, II', *PNM*, xv/2 (1977), 58–95
- M. Yeston, ed.: *Readings in Schenker Analysis and other Approaches* (New Haven, CT, 1977)
- E. Antokoletz: 'Principles of Pitch Organization in Bartók's Fourth String Quartet', *In Theory Only*, iii/6 (1977–8), 3–22
- R. Bailey: 'The Structure of the Ring and its Evolution', *19CM*, i (1977–8), 48–61
- I.D. Bent and J. Morehen: 'Computers in the Analysis of Music', *PRMA*, civ (1977–8), 30–46
- D. Starr and R. Morris: 'A General Theory of Combinatorality and the Aggregate I', *PNM*, xvi/1 (1977–8), 3–35
- R. Swift: '1-XII-99: Tonal Relationships in Schoenberg's *Verklärte Nacht*', *19CM*, i (1977–8), 3–14
- A.B. Wenk: 'The Composer as Poet in "Das Lied von der Erde"', *19CM*, i (1977–8), 33–47

- M. Baroni: *Proposal for a Grammar of Melody: the Bach Chorales* (Montreal, 1978)
- W.E. Benjamin: 'Pour les sixtes: an Analysis', *JMT*, xxii (1978), 253–90
- W. Berry: 'Rhythmic Accelerations in Beethoven', *JMT*, xxii (1978), 177–236
- C. Burkhart: 'Schenker's "Motivic Parallelisms"', *JMT*, xxii (1978), 145–75
- K. Covington: 'A Theory of Dissonance in the Fourteenth Century', *Indiana Theory Review*, ii/1 (1978), 29–40
- C. Dahlhaus: 'Der rhetorische Formbegriff H. Chr. Kochs und die Theorie der Sonatenform', *AMw*, xxxv (1978), 155–77
- C. Dahlhaus: 'Formenlehre und Gattungstheorie bei A.B. Marx', *Heinrich Sievers zum 70. Geburtstag*, ed. R. Jakoby and G. Katzenberger (Tutzing, 1978), 29–35
- C. Dahlhaus: 'Satz und Periode: zur Theorie der musikalischen Syntax', *Zeitschrift für Musiktheorie*, ix/2 (1978), 16–26
- A. Forte: 'Schoenberg's Creative Evolution: the Path to Atonality', *MQ*, lxiv (1978), 133–76
- A. Forte: *The Harmonic Organization of 'The Rite of Spring'* (New Haven, CT, 1978)
- R. Gauldin: 'A Labyrinth of Fifths: the Last Movement of Beethoven's Eighth Symphony', *Indiana Theory Review*, i/3 (1978), 4–11
- M.A. Guck: 'The Functional Relations of Chords: a Theory of Musical Intuitions', *In Theory Only*, iv/6 (1978), 29–42
- A.O. Halm: *Von Form und Sinn der Musik: gesammelte Aufsätze*, ed. S. Schmalzriedt (Wiesbaden, 1978)
- G. Henneberg: 'Heinrich Christoph Kochs Analysen von Instrumentalwerken Joseph Haydns', *Haydn-Studien*, iv/2 (1978), 105–12
- J. Jiránek: 'Dramatické rysy Janáčkovy klavírního stylu' [Dramatic traits in Janáček's writing for the piano], *OM*, x (1978), 139–48; repr. in *Muzikologické etudy* (Prague, 1981), 88–100; Ger. trans. in *AMw*, xxxix (1982), 179–97
- A. Keiler: 'Bernstein's "the Unanswered Question" and the Problem of Musical Competence', *MQ*, lxiv (1978), 195–222
- A. Keiler: 'The Empiricist Illusion: Narmour's Beyond Schenkerism', *PNM*, xvii/1 (1978), 161–95
- L. Laskowski, ed.: *Heinrich Schenker: an Annotated Index to his Analyses of Musical Works* (New York, 1978)
- J. Lester: 'The Recognition of Major and Minor Keys in German Theory: 1680-1730', *JMT*, xxii (1978), 65–103
- D. Linthicum: 'Verdi's "Falstaff" and Classical Sonata Form', *MR*, xxxix (1978), 39–53
- H.C. Longuet-Higgins: 'The Perception of Music', *Interdisciplinary Science Review*, iii (1978), 143
- R.P. Morgan: 'The Theory and Analysis of Tonal Rhythm', *MQ*, lxiv (1978), 435–73
- F. Neumann: *Musikalische Syntax und Form im Liederzyklus 'Die schöne Müllerin' von Franz Schubert: eine morphologische Studie* (Tutzing, 1978)
- F. Schleiermacher: 'The Hermeneutics: Outline of the 1819 Lectures', *New Literary History*, x (1978), 1–17
- U. Siegele: *Bachs theologischer Formbegriff und das Duett F-dur* (Neuhausen, 1978)
- D. Starr and R. Morris: 'A General Theory of Combinatoriality and the Aggregate, II', *PNM*, xvi/2 (1978), 50–84
- E. Tarasti: *Myth and Music: a Semiotic Approach to the Aesthetics of Myth in Music, especially that of Wagner, Sibelius and Stravinsky* (Helsinki, 1978)
- E.C. Verba: 'Rameau's Views on Modulation and their Background in French Theory', *JAMS*, xxxi (1978), 467–79
- G.J. Buelow: 'The Concept of "Melodielehre": a Key to Classic Style', *MJb* 1978–9, 182–95
- P. Johnson: 'Symmetrical Sets in Webern's op.10, no.4', *PNM*, xvii/1 (1978–9), 219–29
- S. Levarie: 'Key Relations in Verdi's *Un ballo in maschera*', *19CM*, ii (1978–9), 143–7

- R.P. Morgan: 'Dissonant Prolongations, Perfect Fifths, and Major Thirds in Stravinsky's Piano Concerto', In *Theory Only*, iv/4 (1978–9), 3–7
- B. Trowell: 'Proportion in the Music of Dunstable', *PRMA*, cv (1978–9), 100–141
- J. Webster: 'Schubert's Sonata Form and Brahms's First Maturity', *19CM*, ii (1978–9), 18–35; iii (1979–80), 52–71
- D. Baumann: *Die dreistimmige italienische Lied-Satztechnik im Trecento* (Baden-Baden, 1979)
- D.W. Beach: 'Pitch Structure and the Analytic Process in Atonal Music: an Interpretation of the Theory of Sets', *Music Theory Spectrum*, i (1979), 7–22
- D.W. Beach and T. Jurgen: 'The True Principles for the Practice of Harmony by Johann Phillip Kirnberger: a Translation', *JMT*, xxiii (1979), 163–225
- W.E. Benjamin 'Ideas of Order in Motivic Music', *Music Theory Spectrum*, i (1979), 23–34
- E. Budde: 'Arnold Schoenbergs Monodrama *Erwartung*: Versuch einer Analyse der ersten Szene', *AMw*, xxxvi (1979), 1–20
- R. Chrisman: 'Anton Webern's Six Bagatelles for String Quartet, op.9: the Unfolding of Intervallic Successions', *JMT*, xxiii (1979), 81–122
- J. Clough: 'Aspects of Diatonic Sets', *JMT*, xxiii (1979), 45–61
- D. Epstein: *Beyond Orpheus: Studies in Musical Structure* (Cambridge, MA, 1979)
- P.A. Evans: *The Music of Benjamin Britten* (London, 1979, 3/1996)
- P. Faltin: *Phänomenologie der musikalischen Form: eine experimental-psychologische Untersuchung zur Wahrnehmung des musikalischen Materials und der musikalischen Syntax* (Wiesbaden, 1979)
- R. Gauldin: 'Wagner's Parody Technique: "Träume" and the "Tristan" Love Duet', *Music Theory Spectrum*, i (1979), 35–42
- F.K. Grave: 'Abbé Vogler and the Study of Fugue', *Music Theory Spectrum*, i (1979), 43–66
- M. Imberty: *Entendre la musique: sémantique psychologique de la musique* (Paris, 1979)
- D. Jarman: *The Music of Alban Berg* (Berkeley and London, 1979)
- J.C. Kassler: *The Science of Music in Britain, 1714–1830* (New York, 1979)
- A. Lessem: *Music and Text in the Works of Arnold Schoenberg* (Ann Arbor, 1979)
- J. Lester: 'Articulation of Tonal Structures as a Criterion for Analytic Choices', *Music Theory Spectrum*, i (1979), 67–79
- E. Morin: *Essai de stylistique comparée: les variations de William Byrd et John Tompkins sur 'John come kiss me now'* (Montreal, 1979)
- D. Neumeyer: 'Liszt's Sonetto 104 del Petrarca: the Romantic Spirit and Voiceleading', *Indiana Theory Review*, ii/2 (1979), 2–22
- K.-O. Plum: *Untersuchungen zu Heinrich Schenkers Stimmführungsanalyse* (Regensburg, 1979)
- J. Rahn: 'Logic, Set Theory, Music Theory', *College Music Symposium*, xix/1 (1979), 114–27
- B.V. Rivera: 'Harmonic Theory in Musical Treatises of the Late Fifteenth and Early Sixteenth Centuries', *Music Theory Spectrum*, i (1979), 80–95
- L. Rowell: 'Aristoxenus on Rhythm', *JMT*, xxiii (1979), 63–79
- M.V. Sandresky: 'The Continuing Concept of the Platonic-Pythagorean System and its Application to the Analysis of Fifteenth-Century Music', *Music Theory Spectrum*, i (1979), 107–20
- W. Schenkman: 'Fixed Ideas and Recurring Patterns in Berlioz's Melody', *MR*, xl (1979), 25–48
- F.J. Smith: *The Experiencing of Musical Sound: Prelude to a Phenomenology of Music* (New York, 1979)
- J. Tenney and L. Polansky: 'Temporal Gestalt Perception in Music', *JMT*, xxiii (1979), 205–41
- P. Tunstall: 'Structuralism and Musicology: an Overview', *CMc*, no.27 (1979), 51–64; repr. in *Ethnomusicological Theory and Method*, ed. K.K. Shelemay (New York, 1990), 279–92
- H. Wilcox and P. Escot: 'A Musical Set Theory', *Theory and Practice*, iv/2 (1979), 17–37
- A. Winold: 'Competence and Performance in Language and Music', *Indiana Theory Review*, ii/3 (1979), 13–30

- H. Brown and D. Butler: 'Diatonic Trichords as Minimal Tonal Cue-Cells.', In *Theory Only*, v/6 (1979–80), 39–55
- R. Browne: 'Tonal Implications of the Diatonic Set.', *ibid.*, 3–21
- D. Lewin: 'Some New Constructs Involving Abstract PC-Sets, and Probabilistic Applications', *PNM*, xviii (1979–80), 433–44
- R. Morris: 'A Similarity Index for Pitch-Class Sets', *ibid.*, 445–60
- J. Rahn: 'Relating Sets', *ibid.*, 483–98
- J.M. Baker: 'Scriabin's Implicit Tonality', *Music Theory Spectrum*, ii (1980), 1–18
- K. Berger: 'Tonality and Atonality in the Prologue to Orlando di Lasso's *Prophetiae Sibyllarum*: some Methodological Problems in Analysis of Sixteenth-Century Music', *MQ*, lxvi (1980), 484–504
- P. Bergquist: 'The First Movement of Mahler's Tenth Symphony: an Analysis and Examination of the Sketches', *Music Forum*, v (1980), 335–94
- W. Berry: 'On Structural Levels in Music', *Music Theory Spectrum*, ii (1980), 19–45
- A.R. Brinkman: 'The Melodic Process in Johann Sebastian Bach's "Orgelbüchlein"', *ibid.*, 46–73
- C. Burkhardt: 'The Symmetrical Source of Webern's Opus 5, No. 4', *Music Forum*, v (1980), 317–34
- W.E. Caplin: 'Harmony and Meter in the Theories of Simon Sechter', *Music Theory Spectrum*, ii (1980), 74–89
- R. Cogan: 'Tone Color: The New Understanding', *Sonus*, i/1 (1980), 3–24
- C. Dahlhaus: 'Cantabile und thematischer Prozess: der Übergang zum Spätwerk in Beethovens Klaviersonaten', *AMw*, xxxvii (1980), 81–98
- J. Dunsby: 'Heinrich Schenker and the Free Counterpoint of Strict Composition', *RMARC*, xvi (1980), 140–48
- J. Dunsby: 'Schoenberg on Cadence', *Journal of the Arnold Schoenberg Institute*, iv (1980), 41–9
- A. Forte: 'Aspects of Rhythm in Webern's Atonal Music', *Music Theory Spectrum*, ii (1980), 90–109
- I. Godt: 'Renaissance Paraphrase Technique: a Descriptive Tool', *ibid.*, 110–18
- F.K. Grave: 'Abbé Vogler's Theory of Reduction', *CMc*, no.29 (1980), 41–69
- R. Hatten: 'An Approach to Ambiguity in the Opening of Beethoven's String Quartet, op.59, no.3', *Indiana Theory Review*, iii/3 (1980), 28–35
- D. Heartz: 'The Great Quartet in Mozart's *Idomeneo*', *Music Forum*, v (1980), 233–56
- J. Jiránek: 'Semantische Analyse der Musik', *AMw*, xxxvii (1980), 187–205
- J. Kerman: 'How we Got into Analysis, and How to Get Out', *Critical Inquiry*, vii (1980), 311–31; repr. in *Write all these Down: Essays on Music* (Berkeley, 1994), 12–32
- J. Lester: 'Simultaneity Structures and Harmonic Functions in Tonal Music', In *Theory Only*, v/5 (1980), 3–28
- D. Lewin: 'On Generalized Intervals and Transformations', *JMT*, xxiv (1980), 243–51
- P. Mast: 'Brahms's Study, Octaven u. Quinten u. A., with Schenker's Commentary Translated', *Music Forum*, v (1980), 1–196
- R.S. Parks: 'Pitch Organization in Debussy: Unordered Sets in "Brouillards"', *Music Theory Spectrum*, ii (1980), 119–34
- G. Perle: *The Operas of Alban Berg*, i: *Wozzeck* (Berkeley, 1980); ii: *Lulu* (Berkeley, 1985)
- J. Rahn: *Basic Atonal Theory* (New York, 1980/R)
- B.V. Rivera: *German Music Theory in the Early 17th Century: the Treatises of Johannes Lippius* (Ann Arbor, 1980)
- C. Rosen: *Sonata Forms* (New York, 1980, 2/1988)
- J. Rothgeb: 'Chopin's C-minor Nocturne, op.48, no.1, First Part: Voice Leading and Motivic Content', *Theory and Practice*, v/2 (1980), 26–31

- F. Salzer: 'The Variation Movement of Mozart's Divertimento K. 563', *Music Forum*, v (1980), 257–316
- C. Schachter: 'Rhythm and Linear Analysis: Durational Reduction', *Music Forum*, v (1980), 197–232
- R. Schneider: *Semiotik der Musik: Darstellung und Kritik* (Munich, 1980)
- J. Thym: 'Text-Music Relationships in Schumann's "Frühlingsfahrt"', *Theory and Practice*, v/2 (1980), 7–25
- C. Wintle: 'Schoenberg's Harmony: Theory and Practice', *Journal of the Arnold Schoenberg Institute*, iv (1980), 50–68
- T. Christensen: 'The Schichtenlehre of Hugo Riemann', *In Theory Only*, vi/4 (1980–81), 37–44
- W. Kindermann: 'Dramatic Recapitulation in Wagner's *Götterdämmerung*', *19CM*, iv (1980–81), 101–12
- L. Kramer: 'The Mirror of Tonality: Transitional Features of Nineteenth-Century Harmony', *ibid.*, 191–208
- D. Lewin: 'On Harmony and Meter in Brahms's op.76, no.8', *ibid.*, 261–65
- M.R. Rogers: 'Rehearsings: Chopin, Prelude in A Minor, op.28, no.2', *ibid.*, 245–50
- K.R. Schwarz: 'Steve Reich: Music as a Gradual Process, I', *PNM*, xix (1980–81), 373–92
- R.A. Solie: 'The Living Work: Organicism and Musical Analysis', *19CM*, iv (1980–81), 147–56
- R.L. Todd: 'Liszt, Fantasy and Fugue for Organ on "Ad nos, ad salutarem undam"', *ibid.*, 250–61
- M. Baroni: 'Sulla nozione di grammatica musicale', *RIM*, xvi (1981), 240–70; Eng. trans. in *MAn*, ii (1983), 175–208
- S. Bérard with J.-P. Holstein: *Musique, langage vivant: analyse d'oeuvres musicales des XVIIe et XVIIIe siècles* (Paris, 1981)
- J.W. Bernard: 'Pitch/Register in the Music of Edgar Varèse', *Music Theory Spectrum*, iii (1981), 1–25
- R. Browne, ed.: *Music Theory: Special Topics* (New York, 1981)
- R. Browne: 'Tonal Implications of the Diatonic Set', *In Theory Only*, v/6–7 (1981), 3–21
- R.D. Cogan: *Sonic Design: Practice and Problems* (Englewood Cliffs, NJ, 1981)
- C. Dahlhaus: 'E.T.A. Hoffmans Beethoven-Kritik und die Aesthetik der Erhabenen', *AMw*, xxxviii (1981), 79–92
- E. Derr: 'The Two-Part Inventions: Bach's Composers' Vademecum', *Music Theory Spectrum*, iii (1981), 26–48
- D. Deutsch and J. Feroe: 'The Internal Representation of Pitch Sequences in Tonal Music', *Psychological Reports*, lxxxviii/6 (1981), 503–22
- J. Dunsby: *Structural Ambiguity in Brahms: Analytical Approaches to Four Works* (Ann Arbor, 1981)
- J. Dunsby and J. Stopford: 'The Case for a Schenkerian Semiotic', *Music Theory Spectrum*, iii (1981), 49–53
- H. Federhofer: *Akkord und Stimmführung in den musiktheoretischen Systemen von Hugo Riemann, Ernst Kurth und Heinrich Schenker* (Vienna, 1981)
- A. Forte: 'The Magical Kaleidoscope: Schoenberg's First Atonal Masterwork, op.11, no.1', *Journal of the Arnold Schoenberg Institute*, v (1981), 127–68
- M.A. Guck: 'Musical Images as Musical Thoughts: the Contribution of Metaphor to Analysis', *In Theory Only*, v/5 (1981), 29–42
- C. Hasty: 'Segmentation and Process in Post-Tonal Music', *Music Theory Spectrum*, iii (1981), 54–73
- A.R. Keiler: 'Music as Metalanguage: Rameau's Fundamental Bass', *Music Theory: Special Topics*, ed. R. Browne (New York, 1981), 83–100
- H. Keller: 'Schoenberg's Return to Tonality', *Journal of the Arnold Schoenberg Institute*, v (1981), 2–21

- R. Kelterborn: *Zum Beispiel Mozart: ein Beitrag zur musikalischen Analyse* (Basle, 1981)
- J. Kerman: *The Masses and Motets of William Byrd* (Berkeley, 1981)
- O.E. Laske: *Music and Mind: an Artificial Intelligence Perspective* (San Francisco, 1981)
- F. Lerdahl and R. Jackendoff: 'On the Theory of Grouping and Meter', *MQ*, lxxvii (1981), 479–506
- D. Lewin: 'A Way into Schoenberg's Opus 15, Number 7', *In Theory Only*, vi/1 (1981), 3–24
- D. Lewin: 'Some Investigations into Foreground Rhythmic and Metric Patterning', *Music Theory: Special Topics*, ed. R. Browne (New York, 1981), 101–37
- C. Lewis: 'Tonal Focus in Atonal Music: Berg's op.5/3', *Music Theory Spectrum*, iii (1981), 84–97
- C. Lord: 'Intervalllic Similarity Relations in Atonal Set Analysis', *JMT*, xxv (1981), 91–111
- C. Marti: 'Zur Kompositionstechnik von Igor Strawinsky: das *Petit concert* aus der *Histoire du soldat*', *AMw*, xxxviii (1981), 93–109
- W. Ogdon: 'How Tonality Functions in Schoenberg's Opus 11, Number 1', *Journal of the Arnold Schoenberg Institute*, v (1981), 169–81
- R.S. Parks: 'Harmonic Resources in Bartók's "Fourths"', *JMT*, xxv (1981), 245–74
- E.R. Phillips: 'Pitch Structures in a Selected Repertoire of Early German Chorale Melodies', *Music Theory Spectrum*, iii (1981), 98–116
- J. Rahn: 'Ockeghem's Three-Section Motet "Salve Regina": Problems in Coordinating Pitch and Time Constructs', *ibid.*, 117–31
- C. Schachter, D. Epstein and W.E. Benjamin: 'Review Symposium: Schenker, "Free Composition"', *JMT*, xxv (1981), 115–73
- W. Schenkman: 'Mattheson's "Forty-Eight" and their Commentaries', *MR*, xlii (1981), 9–21
- B. Shamgar: 'On Locating the Retransition in Classic Sonata Form', *MR*, xlii (1981), 130–43
- W. Slawson: 'The Color of Sound: a Theoretical Study in Musical Timbre', *Music Theory Spectrum*, iii (1981), 132–41
- C.J. Smith: 'Prolongations and Progressions as Musical Syntax', *Music Theory: Special Topics*, ed. R. Browne (New York, 1981), 139–74
- W. Steinbeck: '"Ein wahres Spiel mit musikalischen Form": zum Scherzo Ludwig van Beethoven', *AMw*, xxxviii (1981), 194–226
- G.E. Wittlich: 'Compositional Premises in Schubert's Opus 94, Number 6', *In Theory Only*, v/8 (1981), 31–43
- E.T. Cone: 'Schubert's Promissory Note: an Exercise in Musical Hermeneutics', *19CM*, v (1981–2), 233–41; repr. in *Schubert: Critical and Analytical Studies*, ed. W. Frisch (Lincoln, NE, 1986), 11–30
- W. Frisch: 'Brahms, Developing Variation, and the Schoenberg Critical Tradition', *19CM*, v (1981–2), 215–32
- K.R. Schwarz: 'Steve Reich: Music as a Gradual Process, II', *PNM*, xx (1981–82), 225–86
- T.W. Adorno: 'On the Problem of Musical Analysis', *MAN*, i (1982), 169–87
- C. Ayrey: 'Berg's "Scheideweg": Analytical Issues in op.2/ii', *ibid.*, 189–202
- J.M. Baker: 'Coherence in Webern's Six Pieces for Orchestra, op.6', *Music Theory Spectrum*, iv (1982), 1–27
- M. Baroni and others: 'A Grammar for Melody: Relationships between Melody and Harmony', *Musical Grammars and Computer Analysis: Modena 1982*, 201–18
- W.E. Benjamin: 'Models of Underlying Tonal Structure: How Can they be Abstract, and How Should they be Abstract', *Music Theory Spectrum*, iv (1982), 28–50
- T. Christensen: 'The Schichtenlehre of Hugo Riemann', *In Theory Only*, vi/4 (1982), 37–44
- R.D. Cogan: 'Stravinsky's Sound: a Phonological View: Stravinsky the Progressive', *Sonus*, ii/2 (1982), 1–25
- L. Davidson: 'The Structure of Lassus' Motets a2 (1577)', *ibid.*, 71–90
- W. Drabkin: 'Characters, Key Relations and Tonal Structure in "Il Trovatore"', *MAN*, i (1982), 143–53

- P. Escot: 'Towards a Theoretical Concept: Non-Linearity in Webern's op.11/1', *Sonus*, iii/1 (1982), 18–29
- H. Federhofer: 'Fux's "Gradus ad Parnassum" as Viewed by Heinrich Schenker', *Music Theory Spectrum*, iv (1982), 66–75
- A. Forte and S.E. Gilbert: *Introduction to Schenkerian Analysis* (New York, 1982) [see also *Instructors Manual for Introduction to Schenkerian Analysis* (New York, 1982)]
- C.M. Joseph: 'Structural Coherence in Stravinsky's "Piano-Rag-Music"', *Music Theory Spectrum*, iv (1982), 76–91
- H. Keller: 'Epilogue/Prologue: Criticism and Analysis', *MAN*, i (1982), 9–31
- O.E. Laske: 'KEITH: a Rule System for Making Music-Analytical Discoveries', *Musical Grammars and Computer Analysis: Modena 1982*, 165–99
- J.M. Levy: *Beethoven's Compositional Choices: the Two Versions of Opus 18, No. 1, First Movement* (Philadelphia, 1982)
- D. Lewin: 'A Formal Theory of Generalized Tonal Functions', *JMT*, xxvi (1982), 23–60
- D. Lewin: 'An Example of Serial Technique in Early Webern', *Theory and Practice*, vii/1 (1982), 40–43
- D. Lewin: 'On Extended Z-Triples', *ibid.*, 38–9
- D. Lewin: 'Vocal Meter in Schoenberg's Atonal Music: with a Note on a Serial Hauptstimme', In *Theory Only*, vi/4 (1982), 12–36
- L.B. Meyer: 'Process and Morphology in the Music of Mozart', *JM*, i (1982), 67–94
- R.P. Morgan: 'Theory, Analysis, and Criticism', *ibid.*, 15–18
- J.-J. Nattiez: 'An Analysis of Debussy's *Syrinx*', *Toronto Semiotic Circle*, iv (1982), 1–35
- J.-J. Nattiez: 'Varèse's Density 21.5: a Study in Semiological Analysis', *MAN*, i (1982), 243–340
- D. Neumeyer: 'Organic Structure and the Song Cycle: another Look at Schumann's "Dichterliebe"', *Music Theory Spectrum*, iv (1982), 92–105
- R. Pascall: 'Organicist Meditations', *MAN*, i (1982), 112–15
- P. Petrobelli, W. Drabkin and R. Parker: 'Verdi's "Il trovatore": a Symposium', 125–67 [3 articles]
- C. Roads: 'An Overview of Music Representations', *Musical Grammars and Computer Analysis: Modena 1982*, 7–38
- D. Rostan: 'Set Design and Formal Symmetry in Stravinsky's "The Flood"', *Sonus*, ii/2 (1982), 26–40
- C. Schachter: 'Beethoven's Sketches for the First Movement of op.14, no.1: a Study in Design', *JMT*, xxvi (1982), 1–21
- B.R. Simms: 'Line and Harmony in the Sketches of Schoenberg's "Seraphita", op.22, no.1', *ibid.*, 291–312
- E.R. Sisman: 'Small and Expanded Forms: Koch's Model and Haydn's Music', *MQ*, lxxviii (1982), 444–75
- L. Solomon: 'The List of Chords, their Properties and Use in Analysis', *Interface*, xi/2 (1982), 61–107
- J. Straus: 'A Principle of Voice Leading in the Music of Stravinsky', *Music Theory Spectrum*, iv (1982), 106–24
- J.N. Straus: 'Stravinsky's Tonal Axis', *JMT*, xxvi (1982), 261–90
- H. Tischler: 'A Propos Meter and Rhythm in the Ars Antiqua', *ibid.*, 313–29
- L. Treitler: '"To Worship That Celestial Sound": Motives for Analysis', *JM*, i (1982), 153–70
- J. Viret: 'Mélodie und "Gestalt": pour une nouvelle approche de l'analyse mélodique', *IRASM*, xiii (1982), 39–53
- E. Wen: 'A Disguised Reminiscence in the First Movement of Mozart's G Minor Symphony', *MAN*, i (1982), 55–71
- A. Whittall: 'Music Analysis as Human Science?: "Le sacre du printemps" in Theory and Practice', *ibid.*, 33–54

- A. Whittall: *The Music of Britten and Tippett: Studies in Themes and Techniques* (Cambridge, 1982, 2/1990)
- R.S. Winter: *Compositional Origins of Beethoven's opus 131* (Ann Arbor, 1982)
- C. Wintle: 'Analysis and Performance: Webern's Concerto op.24/II', *MAN*, i (1982), 73–99
- D. Lewin: 'Auf dem Flusse: Image and Background in a Schubert Song', *19CM*, vi (1982–3), 47–59; repr. in *Schubert: Critical and Analytical Studies*, ed. W. Frisch (Lincoln, NE, 1986), 126–52
- D. Lewin: 'Transformational Techniques in Atonal and Other Music Theories', *PNM*, xxi (1982–3), 312–71
- R. Parker: 'Levels of Motive Definition in Verdi's *Ernani*', *19CM*, vi/2 (1982–3), 141–50
- J. Pasler: 'Debussy, "Jeux": Playing with Time and Form', *ibid.*, 60–75
- J. Reise: 'Late Scriabin: some Principles Behind the Style', *ibid.*, 220–31
- V.K. Agawu: 'The Musical Language of "Kindertotenlieder" no.2', *JM*, ii (1983), 81–93
- W. Arlt: 'Zur Handhabung der "inventio" in der deutschen Musiklehre des frühen achtzehnten Jahrhunderts', *New Mattheson Studies*, ed. G.J. Buelow and H.J. Marx (Cambridge, 1983), 371–92
- J.M. Baker: 'Schenkerian Analysis and Post-Tonal Music', *Aspects of Schenkerian Theory*, ed. D.W. Beach (New Haven, CT, 1983), 53–86
- M. Baroni: 'The Concept of Musical Grammar', *MAN*, ii (1983), 175–208
- D.W. Beach: 'A Recurring Pattern in Mozart's Music', *JMT*, xxvii (1983), 1–29
- D.W. Beach, ed.: *Aspects of Schenkerian Theory* (New Haven, CT, 1983), esp. 1–38
- J.W. Bernard: 'Spatial Sets in Recent Music of Elliott Carter', *MAN*, ii (1983), 5–34
- W. Berry: 'Text and Music in the Alto Rhapsody', *JMT*, xxvii (1983), 239–53
- G.J. Buelow: 'Johann Mattheson and the Invention of the "Affektenlehre"', *New Mattheson Studies*, ed. G.J. Buelow and H.J. Marx (Cambridge, 1983), 393–407
- C. Burkhart: 'Schenker's Theory of Levels and Musical Performance', *Aspects of Schenkerian Theory*, ed. D.W. Beach (New Haven, CT, 1983), 95–112
- A. Cadwallader: 'Motivic Unity and Integration of Structural Levels in Brahms's B Minor Intermezzo, op.119, no.1', *Theory and Practice*, viii/2 (1983), 5–24
- W. Caplin: 'Tonal Function and Metrical Accent: a Historical Perspective', *Music Theory Spectrum*, v (1983), 1–14
- P. Carpenter: '"Grundgestalt" as Tonal Function', *ibid.*, 15–38
- G. Chew: 'The Spice of Music: Towards a Theory of the Leading Note', *MAN*, ii (1983), 35–53
- M. Chion: *Guide des objets sonores: Pierre Schaeffer et la recherche musicale* (Paris, 1983)
- T. Clifton: *Music as Heard: a Study in Applied Phenomenology* (New Haven, CT, 1983)
- S. Davis: 'H.C. Koch, the Classic Concerto, and the Sonata-Form Retransition', *JM*, ii (1983), 45–61
- J. Dunsby: 'Music and Semiotics: the Nattiez Phase', *MQ*, lxix (1983), 27–43
- A. Forte: 'Foreground Rhythm in Early Twentieth-Century Music', *MAN*, ii (1983), 239–68; repr. in *Early Twentieth-Century Music*, ed. J. Dunsby (Oxford, 1993), 132–47
- A. Forte: 'Motive and Rhythmic Contour in the *Alto Rhapsody*', *JMT*, xxvii (1983), 255–71
- A. Forte: 'Motivic Design and Structural Levels in the First Movement of Brahms's String Quartet in C Minor', *MQ*, lxix (1983), 471–502; repr. in *Brahms II: Biographical, Documentary, and Analytical Studies*, ed. M. Musgrave (Cambridge, 1987), 165–96
- R. Gauldin: 'The Cycle-7 Complex: Relations of Diatonic Set Theory in the Evolution of Ancient Tonal Systems', *Music Theory Spectrum*, v (1983), 39–55
- R. Groth: *Die französische Kompositionslehre des 19. Jahrhunderts* (Wiesbaden, 1983)
- R. Hanson: 'Webern's Chromatic Organisation', *MAN*, ii (1983), 135–49
- W.G. Harbinson: 'Rhythmic Structure in Schoenberg's "Jane Grey"', *Journal of the Arnold Schoenberg Institute*, vii (1983), 222–37
- R. Howat: 'Bartók, Lendvai and the Principles of Proportional Analysis', *MAN*, ii (1983), 69–95
- R. Howat: *Debussy in Proportion: a Musical Analysis* (Cambridge, 1983)

- J. Hunkemöller: 'Bartók analysiert seine "Musik für Saiteninstrumente, Schlagzeug und Celesta"', *AMw*, xl (1983), 147–63
- R. Kamien: 'Aspects of Motivic Elaboration in the Opening Movement of Haydn's Piano Sonata in C-sharp Minor [Hob.XVI:36]', *Aspects of Schenkerian Theory*, ed. D.W. Beach (New Haven, CT, 1983), 77–93
- W. Kinderman: 'Das "Geheimnis der Form" in Wagners "Tristan und Isolde"', *AMw*, xl (1983), 174–88
- E. Lendvai: *The Workshop of Bartók and Kodály* (Budapest, 1983)
- F. Lerdaahl and R. Jackendoff: *A Generative Theory of Tonal Music* (Cambridge, MA, 1983)
- D. Lewin: 'An Interesting Global Rule for Species Counterpoint', *In Theory Only*, vi/8 (1983), 19–44
- P. McCreless: 'Ernst Kurth and the Analysis of the Chromatic Music of the Late Nineteenth Century', *Music Theory Spectrum*, v (1983), 56–75
- G.D. McQuere, ed.: *Russian Theoretical Thought in Music* (Ann Arbor, 1983)
- E.W. Marvin: 'The Structural Role of Complementation in Webern's Orchestral Pieces', *Music Theory Spectrum*, v (1983), 76–88
- R. Morris: 'Combinatoriality without the Aggregate', *PNM*, xxi (1982–3), 432–86
- M. Musgrave: 'Brahms's First Symphony: Thematic Coherence and its Secret Origin', *MAN*, ii (1983), 117–33
- J.-J. Nattiez: *Tétralogies: Wagner, Boulez, Chéreau* (Paris, 1983)
- C.V. Palisca: 'The Genesis of Mattheson's Style Classification', *New Mattheson Studies*, ed. G.J. Buelow and H.J. Marx (Cambridge, 1983), 409–23
- A. Pople: 'Skryabin's Prelude, op.67, no.1: Sets and Structure', *MAN*, ii (1983), 151–73
- J. Rothgeb: 'Thematic Content: a Schenkerian View', *Aspects of Schenkerian Analysis*, ed. D.W. Beach (New Haven, CT, 1983), 39–60
- J. Rushton: *The Musical Language of Berlioz* (Cambridge, 1983)
- F. Salzer: 'Heinrich Schenker and Historical Research: Monteverdi's Madrigal "Oimè, se tanto amate"', *Aspects of Schenkerian Analysis*, ed. D.W. Beach (New Haven, CT, 1983), 135–52
- C. Schachter: 'Motive and Text in Four Schubert Songs', *ibid.*, 61–76
- C. Schachter: 'The First Movement of Brahms's Second Symphony: the Opening Theme and its Consequences', *MAN*, ii (1983), 55–68
- W. Schenkman: 'Rhythmic Motifs as Key to Beethoven's Characteristic Phrase Structure', *MR*, xlv (1983), 186–93
- J. Schmalfeldt: *Berg's Wozzeck: Harmonic Language and Dramatic Design* (London and New Haven, CT, 1983)
- J.R. Stevens: 'Georg Joseph Vogler and the "Second Theme" in Sonata Form', *JM*, ii (1983), 278–304
- E. Tarasti: 'Pour une narratologie de Chopin', *IRASM*, xiv (1983), 53–75
- C. Taylor: 'The Hindemith Theories: a Revaluation of Premise and Purpose', *MR*, xlv (1983), 246–62
- P.C. van den Toorn: *The Music of Igor Stravinsky* (New Haven, CT, 1983)
- C.H. Treibitz: 'Substance and Function in Concepts of Musical Structure', *MQ*, lxix (1983), 209–26
- R. Wason: 'Schenker's Notion of Scale-Step in Historical Perspective: Non-Essential Harmonies in Viennese Fundamental Bass Theory', *JMT*, xxvii (1983), 49–73
- A. Whittall: 'Wagner's Great Transition?: from "Lohengrin" to "Das Rheingold"', *MAN*, ii (1983), 269–80
- A. Whittall: 'Webern and Atonality: the Path from the Old Aesthetic', *MT*, cxxiv (1983), 733–7
- W.E. Benjamin: 'A Theory of Musical Meter', *Music Perception*, i (1983–4), 355–413
- D. Lewin: 'Amfortas's Prayer to Titurel and the Role of D in "Parsifal": the Tonal Spaces of the Drama and the Enharmonic C-flat/B', *19CM*, vii (1983–4), 336–49 [special issue]

- A. Newcomb: 'Once More Between Absolute and Program Music: Schumann's Second Symphony', *ibid.*, 233–50
- W. Thomson: 'Functional Ambiguity in Musical Structures', *Music Perception*, i (1983–4), 3–27
- C. Wintle: 'Humpty Dumpty's Complaint: Tovey Revalued', *Soundings*[Cardiff], xi (1983–4), 14–45
- V.K. Agawu: 'Structural "Highpoints" in Schumann's *Dichterliebe*', *MAN*, iii (1984), 159–80
- E. Antokoletz: *The Music of Béla Bartók: a Study of Tonality and Progression in Twentieth-Century Music* (Berkeley, 1984)
- W.B. Bailey: *Programmatic Elements in the Works of Schoenberg* (Ann Arbor, 1984)
- D. Beach: 'Motive and Structure in the Andante Movement of Mozart's Piano Sonata K.545', *MAN*, iii (1984), 227–36
- I. Bent: 'The "Compositional Process" in Music Theory 1713–1850', *ibid.*, 29–55
- A. Cadwallader: 'Schenker's Unpublished Graphic Analysis of Brahms's Intermezzo op.117, no.2: Tonal Structure and Concealed Motivic Repetition', *Music Theory Spectrum*, vi (1984), 1–13
- W. Caplin: 'Moritz Hauptmann and the Theory of Suspensions', *JMT*, xxviii (1984), 251–69
- R.D. Cogan: *New Images of Musical Sound* (Cambridge, MA, 1984)
- C. Dahlhaus: 'Ästhetische Prämissen der "Sonatenform" bei Adolf Bernhard Marx', *AMw*, xli (1984), 73–85
- C. Dahlhaus: *Die Musiktheorie im 18. und 19. Jahrhundert, i: Grundzüge einer Systematik* (Darmstadt, 1984)
- J. Dunsby: 'A Bagatelle on Beethoven's WoO 60', *MAN*, iii (1984), 57–68
- P. Escot: 'The Gothic Cathedral and Hidden Geometry of St. Hildegard', *Sonus*, v/1 (1984), 14–31
- L. Ferrara: 'Phenomenology as a Tool for Musical Analysis', *MQ*, lxx (1984), 355–73
- W. Frisch: *Brahms and the Principle of Developing Variation* (Berkeley, 1984)
- F.K. Grave: 'Common-Time Displacement in Mozart', *JM*, iii (1984), 423–42
- C.F. Hasty: 'Phrase Formation in Post-Tonal Music', *JMT*, xxviii (1984), 167–90
- M. Hyde: 'A Theory of Twelve-Tone Meter', *Music Theory Spectrum*, vi (1984), 14–51
- J.P. Lambert: 'Eighteenth-Century Harmonic Theory in Concept and Practice: Kollmann's Analysis of J.S. Bach's Chromatic Fantasy', *In Theory Only*, viii/3 (1984), 11–29
- O.E. Laske: 'Understanding Musical Listening Procedurally', *Sonus*, v/1 (1984), 61–71
- D. Leech-Wilkinson: 'Machaut's "Rose, lis" and the Problem of Early Music Analysis', *MAN*, iii (1984), 9–28
- W.S. Newman: 'Yet Another Major Beethoven Forgery by Schindler?', *JM*, iii (1984), 397–423
- C. Noden-Skinner: 'Tonal Ambiguity in the Opening Measures of Selected Works by Chopin', *College Music Symposium*, xxiv (1984), 28–34
- G. Perle: 'Scriabin's Self-Analysis', *MAN*, iii (1984), 101–22
- G.H. Phipps: 'Tonality in Webern's Cantata I', *ibid.*, 125–58
- R. Rastall: 'Vocal Range and Tessitura in Music from York Play 45', *ibid.*, 181–99
- E. Ratz: 'Analysis and Hermeneutics, and Their Significance for the Interpretation of Beethoven', *ibid.*, 243–54
- B.V. Rivera: 'The Seventeenth-Century Theory of Triadic Generation and Invertibility and its Application in Contemporaneous Rules of Composition', *Music Theory Spectrum*, vi (1984), 63–78
- S. Schmalzriedt: 'Charakter und Drama: zur historischen Analyse von Haydnschen und Beethovenschen Sonatensätzen', *AMw*, xlii (1984), 37–66
- L. Thaler: *Organische Form in der Musiktheorie des 19. und beginnenden 20. Jahrhunderts* (Munich, 1984)
- G. Wagner: 'Anmerkungen zur Formtheorie Heinrich Christoph Kochs', *AMw*, xli (1984), 86–112
- P. Wilson: 'Concepts of Prolongation and Bartók's Opus 20', *Music Theory Spectrum*, vi (1984), 79–89

- W. Drabkin: 'Felix-Eberhard von Cube and the North-German Tradition of Schenkerism', *PRMA*, cxi (1984–5), 180–207
- A. Forte: 'Middleground Motives in the Adagietto of Mahler's Fifth Symphony', *19CM*, viii (1984–5), 153–63
- R. Kaplan: 'Sonata Form in the Orchestral Works of Franz Liszt: the Revolutionary Reconsidered', *ibid.*, 142–52
- W.A. Pastille: 'Heinrich Schenker, Anti-Organicist', *ibid.*, 28–36
- S. Arom: 'De l'écoute à l'analyse des musiques centrafricaines', *Analyse musicale* (1985), no.1, pp.35–9
- W. Berry: 'Metric and Rhythmic Articulation in Music', *Music Theory Spectrum*, vii (1985), 7–33
- R. Browne: 'The Dialectic of Good Continuation in Tonal Music', *MAN*, iv (1985), 5–13
- W. Caplin: 'Hugo Riemann's Theory of "Dynamic Shading": a Theory of Musical Meter?', *Theoria* [Denton, TX], i (1985), 1–24
- E.T. Cone: 'Musical Form and Musical Performance Reconsidered', *Music Theory Spectrum*, vii (1985), 149–58
- W. Drabkin: 'A Lesson in Analysis from Heinrich Schenker: the C-major Prelude from Bach's Well-Tempered Clavier, Book I', *MAN*, iv (1985), 241–58
- W. Drabkin: 'Beethoven and the Open String', *ibid.*, 15–28
- D. Epstein: 'Tempo Relations: a Cross-Cultural Study', *Music Theory Spectrum*, vii (1985), 34–71
- H. Federhofer: *Heinrich Schenker: nach Tagebüchern und Briefen in der Oswald Jonas Memorial Collection* (Hildesheim, 1985)
- A. Forte: 'Pitch-Class Set Analysis Today', *MAN*, iv (1985), 29–58
- M.L. Friedmann: 'A Methodology for the Discussion of Contour: its Application to Schoenberg's Music', *JMT*, xxix (1985), 223–48
- A. Goehr: 'Schoenberg and Kraus: the Idea behind the Music', *MAN*, iv (1985), 59–71
- D. Headlam: 'A Rhythmic Study of the Exposition in the Second Movement of Beethoven's Quartet op.59, no.1', *Music Theory Spectrum*, vii (1985), 114–38
- M. Hyde: 'Musical Form and the Development of Schoenberg's Twelve-Tone Method', *JMT*, xxix (1985), 85–143
- C.C. Judd: 'Some Problems of Pre-Baroque Analysis: an Examination of Josquin's *Ave Maria ... Virgo Serena*', *MAN*, iv (1985), 201–39
- T. Kabisch: 'Struktur und Form im Spätwerk Franz Liszts: das Klavierstück "Unstern" (1886)', *AMw*, xlii (1985), 178–99
- H. Keller: 'Functional Analysis of Mozart's G-minor Quintet', *MAN*, iv (1985), 73–94
- J. Kerman: *Contemplating Music* (Cambridge, MA, 1985; as *Musicology*, London, 1985)
- J.D. Kramer: 'Studies of Time and Music: a Bibliography', *Music Theory Spectrum*, vii (1985), 72–106
- H. Krebs: 'The Background Level in Some Tonally Deviating Works of Franz Schubert', *In Theory Only*, viii/8 (1985), 5–18
- A. Lönn and E. Kjellberg, eds.: *Analytica: Studies in the Description and Analysis of Music* (Stockholm, 1985)
- T. Mathiesen: 'Rhythm and Meter in Ancient Greek Music', *Music Theory Spectrum*, vii (1985), 159–80
- A. McNamee: 'Bitonality, Mode, and Interval in the Music of Karol Szymanowski', *JMT*, xxix (1985), 61–84
- A. McNamee: 'The Role of the Piano Introduction in Schubert's "Lieder"', *MAN*, iv (1985), 95–106
- J.-J. Nattiez: 'The Concepts of Plot and Seriation Process in Music Analysis', *ibid.*, 107–18
- D. Osmond-Smith: *Playing on Words: a Guide to Luciano Berio's 'Sinfonia'* (London, 1985)
- R.S. Parks: 'Tonal Analogues as Atonal Resources and their Relation to Form in Debussy's Chromatic Etude', *JMT*, xxix (1985), 33–60

- J. Rushton: 'The Overture to "Les Troyens"', *MAN*, iv (1985), 119–44
- J. Samson: *The Music of Chopin* (London, 1985)
- J. Schmalfeldt: 'On the Relation of Analysis to Performance: Beethoven's Bagatelles op.126, nos.2 and 5', *JMT*, xxix (1985), 1–31
- W. Slawson: *Sound Color* (Berkeley, 1985) [incl. 2 sound discs]
- D.I. Stein: *Hugo Wolf's Lieder and Extensions of Tonality* (Ann Arbor, 1985)
- R. Wason: *Viennese Harmonic Theory from Albrechtsberger to Schenker and Schoenberg* (Ann Arbor, 1985/R)
- C. Wintle: 'Kontra-Schenker: "Largo e mesto" from Beethoven's op.10, no.3', *MAN*, iv (1985), 145–82
- V.K. Agawu: 'Tonal Strategy in the First Movement of Mahler's Tenth Symphony', *19CM*, ix (1985–6), 222–33
- L. Kramer: 'Romantic Meaning in Chopin's Prelude in A Minor', *ibid.*, 145–55
- D. Lewin: 'Music Theory, Phenomenology, and Modes of Perception', *Music Perception*, iii (1985–6), 327–92
- G. Philipps: 'The Logic of Tonality in Strauss's Don Quixote: a Schoenbergian Evaluation', *19CM*, ix (1985–6), 189–205
- V.K. Agawu: 'Mahler's Tonal Strategies: a Study of the Song Cycles', *JMR*, vi (1986), 1–47
- J.M. Baker: *The Music of Alexander Scriabin* (New Haven, CT, 1986)
- I. Bent: 'Heinrich Schenker, Chopin and Domenico Scarlatti', *MAN*, v (1986), 131–49
- P. Boulez: 'Le système et l'idée', *In Harmoniques*, no.1 (1986), 62–104
- M. Brown: 'The Diatonic and the Chromatic in Schenker's Theory of Harmonic Relations', *JMT*, xxx (1986), 1–33
- G.E. Conus: 'Die metrotektonische Lösung des Problems der musikalischen Form', *Musiktheorie*, i (1986), 83–95
- C. Deliège: 'L'analyse post-Schenkerienne: quand et pourquoi?', *Analyse musicale* (1986), no.2, pp.12–20 [with Eng. summary]
- W. Frisch, ed.: *Schubert Critical and Analytical Studies* (Lincoln, NE, 1986)
- R.O. Gjerdingen: 'The Formation and Deformation of Classic/Romantic Phrase Schemata', *Music Theory Spectrum*, viii (1986), 25–43
- C. Hasty: 'On the Problem of Succession and Continuity in Twentieth-Century Music', *ibid.*, 58–74
- R. Kamien: 'Subtle Enharmonic Relationships in Mozart's Music', *JMT*, xxx (1986), 169–83
- H. Keller: *The Great Haydn Quartets: their Interpretation* (New York and London, 1986)
- M. Kielian-Gilbert: 'Motive Transfer in Chopin's A-minor Prelude', *In Theory Only*, ix/1 (1986), 21–32
- J. Lester: *The Rhythms of Tonal Music* (Carbondale, IL, 1986)
- N. Marston: 'Schenker and Forte Reconsidered: Beethoven's Sketches for the Piano Sonata in E, op.109', *19CM*, x (1986–7), 24–42
- J.-J. Nattiez: 'La sémiologie musicale dix ans après', *Analyse musicale* (1986), no.2, pp.22–33
- D. Neumeyer: *The Music of Paul Hindemith* (New Haven, CT, 1986)
- D. Puffett: 'The Fugue from Tippett's Second String Quartet', *MAN*, v (1986), 233–64
- W. Rothstein: 'The Americanization of Heinrich Schenker', *In Theory Only*, ix/1 (1986), 5–17; repr. in *Schenker Studies*, ed. H. Siegel (New York, 1990), 192–203
- C.J. Smith: 'The Functional Extravagance of Chromatic Chords', *Music Theory Spectrum*, viii (1986), 94–139
- A. Forte: 'Liszt's Experimental Idiom and Twentieth-Century Music', *19CM*, x (1986–7), 209–28; repr. in *Music at the Turn of the Century*, ed. J. Kerman (Berkeley, 1990), 93–114
- R. Taruskin: 'Chez Petrouchka: Harmony and Tonality chez Stravinsky', *19CM*, x (1986–7), 265–86; repr. in *Music at the Turn of the Century*, ed. J. Kerman (Berkeley, 1990), 71–92

- V.K. Agawu: 'Concepts of Closure and Chopin's Opus 28', *Music Theory Spectrum*, ix (1987), 1–17
- V.K. Agawu: 'The Rhythmic Structure of West African Music', *JM*, v (1987), 400–418
- D. Beach: 'Motivic Repetition in Beethoven's Piano Sonata Opus 110: Part I: the First Movement', *Intégral*, i (1987), 1–29
- D. Beach: 'The First Movement of Mozart's Piano Sonata in A-minor, K310: some Thoughts on Structure and Performance', *JMR*, vii (1987), 157–79
- J.W. Bernard: 'Inaudible Structures, Audible Music: Ligeti's Problem, and his Solution', *MAN*, vi (1987), 207–36
- J.W. Bernard: *The Music of Edgard Varèse* (New Haven, CT, 1987)
- P. Boulez: 'Timbre and Composition – Timbre and Language', *CMR*, ii/1 (1987), 161–71
- G. Boyd: 'Hauptmann's Commentary on the Art of Fugue: a Translation', *Indiana Theory Review*, viii/2 (1987), 45–66
- W.E. Caplin: 'The "Expanded Cadential Progression": a Category for the Analysis of Classical Form', *JMR*, vii (1987), 215–57
- T. Christensen: 'Schoenberg's Opus 11, No.1: a Parody of Pitch Cells from Tristan', *Journal of the Arnold Schoenberg Institute*, x (1987), 38–44
- E.T. Cone: 'On Derivation: Syntax and Rhetoric', *MAN*, vi (1987), 237–55
- N. Cook: *A Guide to Musical Analysis* (London and New York, 1987)
- N. Cook: 'Structure and Performance Timing in Bach's C-minor Prelude (WTC I): an Empirical Study', *MAN*, vi (1987), 257–72
- I. Deliège: 'Le parallélisme, support d'une analyse auditive de la musique: vers un modèle des parcours cognitifs de l'information musicale', *Analyse musicale* (1987), no.6, pp.73–79
- W. Everett: 'Text-Painting in the Foreground and Middleground of Paul McCartney's Beatle Song, "She's Leaving Home": a Musical Study of Psychological Conflict', *In Theory Only*, ix/7 (1987), 5–21
- S. Fuller: 'Line, Contrapunctus and Structure in a Machaut Song', *MAN*, vi (1987), 37–58
- W. Kinderman: *Beethoven's Diabelli Variations* (Oxford, 1987)
- D. Lewin: *Generalized Musical Intervals and Transformations* (New Haven, CT, 1987)
- E.W. Marvin and P.A. Laprade: 'Relating Musical Contours: Extensions of a Theory for Contour', *JMT*, xxxi (1987), 225–67
- A. Mead: '"Tonal" Forms in Arnold Schoenberg's Twelve-Tone Music', *Music Theory Spectrum*, ix (1987), 67–92
- R.D. Morris: *Composition with Pitch-Classes: a Theory of Compositional Design* (New Haven, CT, 1987)
- D. Neumeyer: 'The Ascending Urlinie', *JMT*, xxxi (1987), 275–303
- D. Neumeyer: 'The Three-Part Ursatz', *In Theory Only*, x/1–2 (1987), 3–29
- D. Neumeyer: 'The Urlinie from 8 as a Middleground Phenomenon', *In Theory Only*, ix/5–6 (1987), 3–25
- L. Roth: 'Kirnberger's Concept of Reductive Analysis', *In Theory Only*, ix/8 (1987), 21–9
- N. Ruwet: 'Methods of Analysis in Musicology', *MAN*, vi (1987), 3–36
- C. Schachter: 'Rhythm and Linear Analysis: Aspects of Meter', *Music Forum*, vi/1 (1987), 1–59
- R. Snarrenberg: 'The Play of "Différance": Brahms's Intermezzo op.118 no.2', *In Theory Only*, x/3 (1987), 1–25
- J.N. Straus: 'The Problem of Prolongation in Post-Tonal Music', *JMT*, xxxi (1987), 1–21
- A. Whittall: 'Webern and Multiple Meaning', *MAN*, vi (1987), 333–53
- D. Lewin: 'Some Instances of Parallel Voice-Leading in Debussy', *19CM*, xi (1987–8), 59–72
- C. Lewis: 'Mirrors and Metaphors: Reflections on Schoenberg and Nineteenth-Century Tonality', *ibid.*, 26–42; repr. in *Music at the Turn of the Century*, ed. J. Kerman (Berkeley, 1990), 15–32
- A. Newcomb: 'Schumann and Late Eighteenth-Century Narrative Strategies', *ibid.*, 164–74

- S. Arom: “‘Du pied a la main’: les fondements métriques des musiques traditionnelles d’Afrique Centrale”, *Analyse musicale* (1988), no.10, pp.16–22
- N.K. Baker: “‘Der Urstoff der Musik’: Implications for Harmony and Melody in the Theory of Heinrich Koch”, *MAN*, vii (1988), 3–30
- J. Barraque: ‘La mer de Debussy, ou la naissance des formes ouvertes’, *Analyse musicale* (1988), no.12, pp.15–62
- W.R. Bass: ‘Prokofiev’s Technique of Chromatic Displacement’, *MAN*, vii (1988), 197–214
- D. Beach: ‘Motivic Repetition in Beethoven’s Piano Sonata op.110; Part II: the Trio of the Second Movement and the Adagio and Arioso’, *Intégral*, ii (1988), 75–97
- D. Beach: ‘The Fundamental Line from Scale Degree 8: Criteria for Evaluation’, *JMT*, xxxii (1988), 271–94
- J.W. Bernard: ‘The Evolution of Elliott Carter’s Rhythmic Practice’, *PNM*, xxvi/2 (1988), 164–203
- A. Cadwallader: ‘Foreground Motivic Ambiguity: its Clarification at Middleground Levels in Selected Late Piano Pieces of Johannes Brahms’, *MAN*, vii (1988), 59–91
- A. Cadwallader: ‘Prolegomena to a General Description of Motivic Relationships in Tonal Music’, *Intégral*, ii (1988), 1–35
- E. Cavett-Dunsby: ‘Mozart’s Codas’, *MAN*, vii (1988), 31–51
- F.-E. von Cube: *The Book of the Musical Artwork*, trans. D. Neumeyer, G. Boyd and S. Harris (Lewiston, NY, 1988)
- J. Dunsby and A. Whittall: *Music Analysis in Theory and Practice* (London and New Haven, CT, 1988)
- D. Fanning: *The Breath of the Symphonist: Shostakovich’s Tenth* (London, 1988)
- A. Forte: ‘Pitch-Class Set Genera and the Origin of Modern Harmonic Species’, *JMT*, xxxii (1988), 187–270
- R.O. Gjerdingen: *A Classic Turn of Phrase: Music and the Psychology of Convention* (Philadelphia, 1988)
- R. Graybill: ‘Harmonic Circularity in Brahms’s F-major Cello Sonata: an Alternative to Schenker’s Reading in “Free Composition”’, *Music Theory Spectrum*, x (1988), 43–55
- D. Harrison: ‘Some Group Properties of Triple Counterpoint and their Influence on Compositions by J.S. Bach’, *JMT*, xxxii (1988), 23–50
- K. Korsyn: ‘Schenker and Kantian Epistemology’, *Theoria* [Denton, TX], iii (1988), 1–58
- J.D. Kramer: *The Time of Music: New Meanings, New Temporalities, New Listening Strategies* (New York and London, 1988)
- C. Lewis: ‘Text, Time, and Tonic: Aspects of Patterning in the Romantic Cycle’, *Intégral*, ii (1988), 37–73
- N. Meeùs: ‘Le “Prelude a l’Après-midi d’un Faune”: une analyse harmonique’, *Analyse musicale* (1988), no.13, pp.81–7
- G. Proctor and H.L. Riggins: ‘Levels and the Reordering of Chapters in Schenker’s “Free Composition”’, *Music Theory Spectrum*, x (1988), 101–26
- L.A. Rothfarb: *Ernst Kurth as Theorist and Analyst* (Philadelphia, 1988)
- H. Schenker: ‘Haydn: Sonata in E-flat Major’, *Theoria* [Denton, TX], iii (1988), 105–60
- H. Schenker: ‘The Spirit of Musical Technique’, *Theoria* [Denton, TX], iii (1988), 86–104
- R. Wason: ‘Tonality and Atonality in Frederick Rzewski’s Variations on “The People United Will Never Be Defeated”’, *PNM*, xxvi/1 (1988), 108–43
- R. Parncutt: ‘Revision of Terhardt’s Psychoacoustic Model of the Root(s) of a Musical Chord’, *Music Perception*, vi (1988–9), 65–94
- C. Abbate and R. Parker, eds.: *Analyzing Opera: Verdi and Wagner* (Berkeley, 1989)
- V.K. Agawu: ‘Schenkerian Notation in Theory and Practice’, *MAN*, viii (1989), 275–301
- D. Bernstein: ‘Georg Capellen on “Tristan und Isolde”: Analytical Systems in Conflict at the Turn of the Twentieth Century’, *Theoria* [Denton, TX], iv (1989), 34–62

- W. Berry: *Musical Structure and Performance* (New Haven, CT, 1989)
- M.G. Brown and D.J. Dempster: 'The Scientific Image of Music Theory', *JMT*, xxxiii (1989), 65–106
- S. Burnham: 'The Role of Sonata Form in A.B. Marx's Theory of Form', *ibid.*, 247–72
- A. Cadwallader and W. Pastille: 'Schenker's High-Level Motives', *ibid.*, 119–48
- E. Cavett-Dunsby: *Mozart's Variations Reconsidered: Four Case Studies* (New York, 1989)
- G. Chew: 'The Perfections of Modern Music: Consecutive Fifths and Tonal Coherence in Monteverdi', *MAN*, viii (1989), 247–73
- D. Clarke: *Language, Form, and Structure in the Music of Michael Tippett* (New York, 1989)
- D. Clarke: 'Structural, Cognitive and Semiotic Aspects of the Musical Present', *CMR*, iii/1 (1989), 111–32
- N. Cook: 'Music Theory and "Good Comparison": a Viennese Perspective', *JMT*, xxxiii (1989), 117–41
- N. Cook: 'Schenker's Theory of Music as Ethics', *JM*, vii (1989), 415–39
- F. Delalande: "'La terrasse des audiences du clair de lune": un essai d'analyse esthétique', *Analyse musicale* (1989), no.16, pp.75–84
- H. Federhofer: 'Methoden der Analyse im Vergleich', *Musiktheorie*, iv/1 (1989), 61–9
- A. Forte: "'La terrasse des audiences du clair de lune": approche motivique et linéaire', *Analyse musicale* (1989), no.16, pp.23–9
- R.O. Gjerdingen: 'Meter as a Mode of Attending: a Network Simulation of Attentional Rhythmicity in Music', *Intégral*, iii (1989), 67–91
- R. Graybill: 'Sonata Form and Reicha's "Grand coupe binaire" of 1814', *Theoria* [Denton, TX], iv (1989), 89–105
- D.I.H. Harvey: *The Later Music of Elliott Carter* (New York, 1989)
- R. Hatten: 'Semiotic Perspectives on Issues in Music Cognition', In *Theory Only*, xi/3 (1989), 1–11
- M.M. Hyde: 'Twentieth-Century Analysis during the Past Decade: Achievements and New Directions', *Music Theory Spectrum*, xi/1 (1989), 35–9
- D. Leech-Wilkinson: *Compositional Techniques in the Four-Part Isorhythmic Motets of Philippe de Vitry and his Contemporaries* (New York, 1989)
- F. Lerdahl: 'Analyse de "La terrasse des audiences du clair de lune" de Debussy: les relations chromatiques comme moyen d'extension d'une théorie générative de la musique tonale', *Analyse musicale* (1989), no.16, pp.54–60
- J. Lester: *Analytic Approaches to Twentieth-Century Music* (New York, 1989)
- J. Lester: *Between Modes and Keys: German Theory, 1592-1802* (Stuyvesant, NY, 1989)
- C. Lewis: 'Into the Foothills: New Directions in Nineteenth-Century Analysis', *Music Theory Spectrum*, xi/1 (1989), 15–23
- M. Mesnage and A. Riotte: 'Les Variations pour piano op.27 d'Anton Webern: approche cellulaire barraquéenne et analyse assistée par ordinateur', *Analyse musicale* (1989), no.16, pp.41–67
- L.B. Meyer: *Style and Music: Theory, History, and Ideology* (Philadelphia, 1989/R)
- E. Narmour: 'L'implication et la réalisation mélodique dans "La terrasse des audiences du clair de lune" de Debussy', *Analyse musicale* (1989), no.16, pp.44–53
- J.-J. Nattiez: 'Reflections on the Development of Semiology in Music', *MAN*, viii (1989), 21–75
- D. Neumeyer: 'Fragile Octaves, Broken Lines: on some Limitations in Schenkerian Theory and Practice', In *Theory Only*, xi/3 (1989), 13–30
- R.S. Parks: *The Music of Claude Debussy* (New Haven, CT, 1989)
- A. Pople: *Skryabin and Stravinsky, 1908-1914: Studies in Theory and Analysis* (New York, 1989)
- B.V. Rivera: 'Studies in Analysis and History of Theory: Sixteenth and Seventeenth Centuries', *Music Theory Spectrum*, xi/1 (1989), 24–8
- L. Rothfarb: 'Ernst Kurth's "Die Voraussetzungen der theoretischen Harmonik" and the Beginnings of Music Psychology', *Theoria* [Denton, TX], iv (1989), 10–33

- W. Rothstein: *Phrase Rhythm in Tonal Music* (New York and London, 1989)
- D. Sheldon: *Marpurg's Thoroughbass and Composition Handbook: a Narrative Translation and Critical Study* (Stuyvesant, NY, 1989)
- A. Street: 'Superior Myths, Dogmatic Allegories: the Resistance to Musical Unity', *MAN*, viii (1989), 77–123
- E. Tarasti: 'L'analyse sémiotique d'un prélude de Debussy: "La terrasse des audiences du clair de lune"', *Analyse musicale* (1989), no.16, pp.67–74
- L. Treitler: *Music and the Historical Imagination* (Cambridge, MA, 1989)
- I.F. Waldbauer: 'Riemann's Periodization Revisited and Revised', *JMT*, xxxiii (1989), 333–92
- R. Winter: 'The Bifocal Close and the Evolution of the Viennese Classical Style', *JAMS*, xlii (1989), 275–337
- W. Darcy: "'Creatio ex nihilo': the Genesis, Structure, and Meaning of the *Rheingold* Prelude", *19CM*, xiii (1989–90), 79–100
- R. Graybill: 'Intervallic Transformation and Closure in the Music of Stravinsky', *Theory and Practice*, xiv–xv (1989–90), 13–34
- T.L. Jackson: 'Schoenberg's op.14 Songs: Textual Sources and Analytical Perception', *ibid.*, 35–58
- J. Lochhead: 'The Metaphor of Musical Motion: is there an Alternative?', *ibid.*, 83–104
- J.M. Baker: 'The Limits of Tonality in the Late Music of Franz Liszt', *JMT*, xxxiv (1990), 145–74
- J.M. Baker: 'Voice-Leading in Post-Tonal Music: Suggestions for Extending Schenker's Theory', *MAN*, ix (1990), 177–200
- D. Beach: 'The Cadential Six-Four as Support for Scale-Degree Three of the Fundamental Line', *JMT*, xxxiv (1990), 81–99
- J.P. Burkholder: 'The Critique of Tonality in the Early Experimental Music of Charles Ives', *Music Theory Spectrum*, xii/2 (1990), 203–23
- A. Cadwallader, ed.: *Trends in Schenkerian Research* (New York, 1990)
- N. Cook: *Music, Imagination, and Culture* (Oxford, 1990)
- N. Cumming: 'Metaphors of Space and Motion in the Linear Analysis of Melody', *MMA*, xvii (1990), 143–66
- C. Dahlhaus: *Studies on the Origin of Harmonic Tonality*, trans. R.O. Gjerdingen (Princeton, NJ, 1990)
- W. Darcy: 'The Ursatz in Wagner, or: Was Wagner a Background Composer After All?', *Intégral*, iv (1990), 1–35
- D.J. Dempster and M.G. Brown: 'Evaluating Musical Analyses and Theories: Five Perspectives', *JMT*, xxxiv (1990), 247–80
- J. Dubiel: 'When You are a Beethoven: Kinds of Rules in Schenker's Counterpoint', *JMT*, xxxiv (1990), 291–340
- A. Forte: 'A Major Webern Revision and its Implications for Analysis', *PNM*, xxviii/1 (1990), 224–55
- A. Forte: 'Musorgsky as Modernist: the Phantasmic Episode in Boris Godunov', *MAN*, ix (1990), 3–45
- M. Guertin: *De la lecture à l'audition d'un texte musical: une étude des thèmes dans le Livre I des Préludes pour piano de Debussy* (Montreal, 1990)
- E. Haimo: *Schoenberg's Serial Odyssey: the Evolution of his Twelve-Tone Method, 1914-1928* (Oxford, 1990)
- N.M. Hubbs: *Musical Organicism and its Alternatives* (diss., U. of Michigan, 1990)
- E.J. Isaacson: 'Similarity of Interval-Class Content Between Pitch-Class Sets: the IcVSIM Relation', *JMT*, xxxiv (1990), 1–28
- L. Koblyakov: *Pierre Boulez: a World of Harmony* (Chur, 1990)
- G.E. Konjus: 'La solution métroctonique du problème de la forme musicale: aperçu d'un travail de recherche en musicologie', *Analyse musicale* (1990), no.20, pp.37–40

- L. Kramer: *Music as Cultural Practice, 1800–1900* (Berkeley, 1990)
- J.C. Kraus: 'Mozart's Chromatic Third Relations: Evidence from the Late Quartets and Quintets', *JMR*, ix (1990), 229–54
- J.P. Lambert: 'Interval Cycles as Compositional Resources in the Music of Charles Ives', *Music Theory Spectrum*, xii (1990), 43–82
- D. Leech-Wilkinson: *Machaut's Mass: an Introduction* (Oxford, 1990)
- D. Lewin: 'Klumpenhouwer Networks and Some Isographies that Involve Them', *Music Theory Spectrum*, xii (1990), 83–120
- A. Maisel: 'Talent and Technique: George Gershwin's *Rhapsody in Blue*', *Trends in Schenkerian Research*, ed. A. Cadwallader (New York, 1990), 51–70
- P. McCreless: 'Motive and Magic: a Referential Dyad in Parsifal', *MAN*, ix (1990), 227–65
- N. Meeùs: 'Techniques modales dans l'harmonie des mazurkas de Chopin', *Analyse musicale* (1990), no.21, pp.101–13
- J. Molino: 'Musical Fact and the Semiology of Music', *MAN*, ix (1990), 105–55
- E. Narmour: *The Analysis and Cognition of Basic Melodic Structures: the Implication-Realization Model* (Chicago, 1990)
- J.-J. Nattiez: 'Can One Speak of Narrativity in Music?', *JRMA*, cxv (1990), 240–57
- J.-J. Nattiez: *Musicologie générale et sémiologie* (Paris, 1987; Eng. trans., 1990)
- W.A. Pastille: 'The Development of the Ursatz in Schenker's Published Works', *Trends in Schenkerian Research*, ed. A. Cadwallader (New York, 1990), 71–86
- S.V. Protopopov: 'Bauelemente der Musiksprache (Élementi stroeniya muzikal'noy rechi), Teil I, Moskau 1930', *Musiktheorie*, v/1 (1990), 67–74
- M. Russ: 'The Mysterious Thread in Musorgsky's Nursery', *MAN*, ix (1990), 47–65
- T. Seedorf: 'Leichtentritt, Busoni und die Formenlehre: zur Wandlung einer Konzeption', *Musiktheorie*, v/1 (1990), 27–37
- H. Siegel, ed.: *Schenker Studies* (Cambridge, 1990), esp. 165–79
- S.W. Smoliar: 'Lewin's Model of Musical Perception Reflected by Artificial Intelligence', *Computers in Music Research*, ii (1990), 1–38
- J.N. Straus: *Introduction to Post-Tonal Theory* (Englewood Cliffs, NJ, 1990)
- J.N. Straus: *Remaking the Past: Musical Modernism and the Influence of Tonal Tradition* (Cambridge, MA, 1990)
- A. Whittall: 'Resisting Tonality: Tippett, Beethoven and the Sarabande', *MAN*, ix (1990), 267–86
- A.W. Atlas: 'Crossed Stars and Crossed Tonal Areas in Puccini's *Madama Butterfly*', *19CM*, xiv (1990–91), 186–96
- M. Kielian-Gilbert: 'The Functional Differentiation of Harmonic and Transpositional Patterns in Liszt's Consolation no.4', *ibid.*, 48–59
- C. Abbate: *Unsung Voices: Opera and Musical Narrative in the Nineteenth Century* (Princeton, NJ, 1991)
- J. Adrian: 'The Function of the Apparent Tonic at the Beginning of Development Sections', *Intégral*, v (1991), 1–53
- V.K. Agawu: *Playing with Signs: a Semiotic Interpretation of Classic Music* (Princeton, NJ, 1991)
- E. Agmon: 'A Moment of Suspense in the Second Finale of *Don Giovanni*', *Theory and Practice*, xvi (1991), 39–49
- K. Bailey: *The Twelve-Note Music of Anton Webern: Old Forms in a New Language* (Cambridge, 1991)
- M.E. Bonds: *Wordless Rhetoric: Musical Form and the Metaphor of the Oration* (Cambridge, MA, 1991)
- R. Cohn: 'Properties and Generability of Transpositionally Invariant Sets', *JMT*, xxxv (1991), 1–32
- M. DeBellis: 'Conceptions of Musical Structure', *Midwest Studies in Philosophy*, xvi (1991), 378–93

- K. DeLong: 'Roads Taken and Retaken: Foreground Ambiguity in Chopin's Prelude in A-flat, op.28, no.17', *Canadian University Music Review*, xi/1 (1991), 34–49
- L. Dreyfus: 'The Hermeneutics of Lament: a Neglected Paradigm in a Mozartian Trauermusik', *MAN*, x (1991), 329–43
- A. Forte: 'Debussy and the Octatonic', *MAN*, x (1991), 125–69
- M.A. Guck: 'Two Types of Metaphoric Transfer', *Metaphor: a Musical Dimension*, ed. J.C. Kassler (Sydney, 1991), 1–12
- R. Hatten: 'On Narrativity in Music: Expressive Genres and Levels of Discourse in Beethoven', *Indiana Theory Review*, xii/1–2 (1991), 75–98
- N.M. Hubbs: 'Schenker's Organicism', *Theory and Practice*, xvi (1991), 143–62
- K. Korsyn: 'Towards a New Poetics of Musical Influence', *MAN*, x (1991), 3–72
- L. Kramer: 'Musical Narratology: a Theoretical Outline', *Indiana Theory Review*, xii/1–2 (1991), 141–62
- H. Krebs: 'Tonal and Formal Dualism in Chopin's Scherzo, op.31', *Music Theory Spectrum*, xiii (1991), 48–60
- F.E. Maus: 'Music as Narrative', *Indiana Theory Review*, xii/1–2 (1991), 1–34
- P. McCreless: 'The Hermeneutic Sentence and other Literary Models for Tonal Closure', *ibid.*, 35–73
- J.-J. Nattiez: 'Existe-t-il des relations entre les diverses méthodes d'analyse?', *Analisi musicale II: Trent 1991*, 537–65
- A. Pople: *Berg: Violin Concerto* (Cambridge, 1991)
- L. Rothfarb, ed. and trans.: *Ernst Kurth: Selected Writings* (Cambridge, 1991)
- C. Schachter: 'The Adventures of an F-sharp: Tonal Narration and Exhortation in Donna Anna's First-Act Recitative and Aria', *Theory and Practice*, xvi (1991), 5–20
- J.N. Straus: 'The "Anxiety of Influence" in Twentieth-Century Music', *JM*, ix (1991), 430–47
- J. Webster: *Haydn's "Farewell" Symphony and the Idea of Classical Style: Through-Composition and Cyclic Integration in his Instrumental Music* (Cambridge, 1991)
- R. Parker and A.W. Atlas: 'A Key for Chi? Tonal Areas in Puccini', *19CM*, xv (1991–2), 229–34
- V.K. Agawu: 'Theory and Practice in the Analysis of the Nineteenth-Century Lied', *MAN*, xi (1992), 3–36
- M. Balaban, K. Ebcioglu and O. Laske, eds.: *Understanding Music with AI: Perspectives on Music Cognition* (Cambridge, MA, 1992)
- J. Boss: 'Schoenberg's op.22 Radio Talk and Developing Variation in Atonal Music', *Music Theory Spectrum*, xiv (1992), 125–49
- A. Cadwallader and W. Pastille: 'Schenker's High-Level Motives', *JMT*, xxxvi (1992), 119–48
- E.T. Chafe: *Monteverdi's Tonal Language* (New York, 1992)
- T. Christensen: 'The Spanish Baroque Guitar and Seventeenth-Century Triadic Theory', *JMT*, xxxvi (1992), 1–42
- R. Cohn: 'The Autonomy of Motives in Schenkerian Accounts of Tonal Music', *Music Theory Spectrum*, xiv (1992), 150–70
- M. Everist, ed.: *Music Before 1600* (Oxford, 1992)
- A. Forte: 'Concepts of Linearity in Schoenberg's Atonal Music: a Study of the Opus 15 Song Cycle', *JMT*, xxxvi (1992), 285–382
- S. Fuller: 'Tendencies and Resolutions: the Directed Progression in Ars Nova Music', *JMT*, xxxvi (1992), 229–58
- J.J. Fux: 'Gradus ad Parnassum (1725): Concluding Chapters', *MAN*, xi (1992), 209–43
- C.C. Judd: 'Josquin des Prez: *Salve Regina* (à5)', *Models of Musical Analysis: Music before 1600*, ed. M. Everist (Oxford, 1992), 114–53
- H. Klumpenhouwer: 'The Cartesian Choir', *Music Theory Spectrum*, xiv (1992), 15–37
- J. Lester: *Compositional Theory in the Eighteenth Century* (Cambridge, MA, 1992)

- R. Littlefield and D. Neumeyer: 'Rewriting Schenker: Narrative – History – Ideology', *Music Theory Spectrum*, xiv (1992), 38–65
- S. Milstein: *Arnold Schoenberg: Notes, Sets, Forms* (Cambridge, 1992)
- R. Monelle: *Linguistics and Semiotics in Music* (Philadelphia, 1992)
- D. Montgomery: 'The Myth of Organicism: From Bad Science to Great Art', *MQ*, lxxvi (1992), 17–66
- E. Narmour: *The Analysis and Cognition of Melodic Complexity: the Implication-Realization Model* (Chicago, 1992)
- D. Neumeyer and S. Tepping: *A Guide to Schenkerian Analysis* (Englewood Cliffs, NJ, 1992)
- A. Newcomb: 'Narrative Archetypes and Mahler's Ninth Symphony', *Music and Text, Critical Inquiries*, ed. P. Scher (Cambridge, 1992), 118–36
- L. Polansky, with R. Bassein: 'Possible and Impossible Melody: some Formal Aspects of Contour', *JMT*, xxxvi (1992), 259–84
- L. Rothfarb: 'Hermeneutics and Energetics: Analytical Alternatives in the Early 1900s' *JMT*, xxxvi (1992), 43–68
- S.P. Scher, ed.: *Music and Text: Critical Inquiries* (Cambridge, 1992)
- R.W. Wason and E.W. Marvin: 'Riemann's Ideen zu einer "Lehre von den Tonvorstellungen": an Annotated Translation', *JMT*, xxxvi (1992), 69–117
- P. Wilson: *The Music of Béla Bartók* (New Haven, CT, 1992)
- S. Burnham and L. Kramer: 'The Criticism of Analysis and the Analysis of Criticism', *19CM*, xvi (1992–3), 70–76
- L. Kramer: 'Haydn's Chaos, Schenker's Order, or: Hermeneutics and Musical Analysis: Can They Mix?', *ibid.*, 3–17
- D. Lewin: 'Some Notes on Analyzing Wagner: the Ring and Parsifal', *ibid.*, 49–58
- E. Antokoletz: 'Transformations of a Special Non-Diatonic Mode in Twentieth-Century Music: Bartók, Stravinsky, Scriabin and Albrecht', *MAN*, xii (1993), 25–45
- D. Beach: 'Schubert's Experiments with Sonata Form: Formal-Tonal Design versus Underlying Structure', *Music Theory Spectrum*, xv (1993), 1–18
- M. Brown: 'Tonality and Form in Debussy's "Prélude à L'Après-midi d'un faune"', *Music Theory Spectrum*, xv (1993), 127–43
- T. Carter: '"An Air New and Grateful to the Ear": the Concept of Aria in Late Renaissance and Early Baroque Italy', *MAN*, xii (1993), 127–45
- N. Cumming: 'Music Analysis and the Perceiver: a Perspective from Functionalist Philosophy', *CMc*, no.54 (1993), 38–53
- W. Darcy: *Wagner's Das Rheingold* (Oxford, 1993)
- J. Dunsby, ed.: *Early Twentieth-Century Music* (Oxford, 1993)
- W. Frisch: *The Early Works of Arnold Schoenberg, 1893–1908* (Berkeley, 1993)
- C. Hatch and D. Bernstein, eds.: *Music Theory and the Exploration of the Past* (Chicago, 1993)
- J. Hepokoski: *Sibelius: Symphony No.5* (Cambridge, 1993)
- K. Korsyn: 'Schenker's Organicism Reexamined', *Intégral*, vii (1993), 82–118
- J.P. Lambert: 'Toward a Theory of Chord Structure for the Music of Ives', *JMT*, xxxvii (1993), 55–83
- D. Lewin: 'A Metrical Problem in Webern's op.27', *MAN*, xii (1993), 343–54
- D. Lewin: *Musical Form and Transformation: 4 Analytic Essays* (New Haven, CT, 1993)
- N. Meeùs: *Heinrich Schenker: une introduction* (Brussels, 1993)
- R. Morris: 'New Directions in the Theory and Analysis of Musical Contour', *Music Theory Spectrum*, xv (1993), 205–28
- V. Murtomäki: *Symphonic Unity: the Development of Formal Thinking in the Symphonies of Sibelius* (Helsinki, 1993)

- J.-J. Nattiez: 'Simha Arom and the Return of Analysis to Ethnomusicology', *MAN*, xii (1993), 241–65
- J.S. Rink: 'Schenker and Improvisation', *JMT*, xxxvii (1993), 1–54
- D. Smyth: "'Balanced Interruption" and the Formal Repeat', *Music Theory Spectrum*, xv (1993), 76–88
- J. Stock: 'The Application of Schenkerian Analysis to Ethnomusicology: Problems and Possibilities', *MAN*, xii (1993), 215–40
- P.H. Smith: 'Liquidation, Augmentation, and Brahms's Recapitulatory Overlaps', *19CM*, xvii (1993–4), 237–61
- R. Atlas and M. Cherlin, eds.: *Musical Transformation and Musical Intuition: Eleven Essays in Honor of David Lewin* (Roxbury, MA, 1994)
- R. Bass: 'Models of Octatonic and Whole-Tone Interaction: George Crumb and his Predecessors', *JMT*, xxxviii (1994), 155–86
- I. Bent: *Music Analysis in the Nineteenth Century*, i: Fugue, Form and Style (Cambridge, 1994); ii: Hermeneutic Approaches (Cambridge, 1994)
- J. Cross: 'Lines and Circles: on Birtwistle's *Punch and Judy* and *Secret Theatre*', *MAN*, xiii (1994), 203–25
- W.J. Darcy: 'The Metaphysics of Annihilation: Wagner, Schopenhauer, and the Ending of the Ring', *Music Theory Spectrum*, xvi (1994), 1–40
- A. Forte: 'An Octatonic Essay by Webern: Number 1 of the Six Bagatelles for String Quartet, op.9', *ibid.*, 171–95
- M.A. Guck: 'Analytical Fictions', *ibid.*, 217–30
- M.A. Guck: 'Rehabilitating the Incurable', *Theory, Analysis and Meaning in Music*, ed. A. Pople (Cambridge, 1994), 57–73
- D. Harrison: *Harmonic Function in Chromatic Music: a Renewed Dualist Theory and an Account of its Precedents* (Chicago, 1994)
- R.S. Hatten: *Musical Meaning in Beethoven: Markedness, Correlation, and Interpretation* (Bloomington, IN, 1994)
- J. Lester: 'An Analysis of Lully from circa 1700', *Music Theory Spectrum*, xvi (1994), 41–61
- D. Lewin: 'A Tutorial on Klumpenhouwer Networks, using the Chorale in Schoenberg's Opus 11, no.2', *JMT*, xxxviii (1994), 79–101
- A. Pople, ed.: *Theory, Analysis, and Meaning in Music* (Cambridge, 1994)
- D. Puffett: 'Editorial: In Praise of Formalism', *MAN*, xiii (1994), 3–5
- J. Rink: 'Chopin's Ballades and the Dialectic: Analysis in Historical Perspective', *ibid.*, 99–115
- M. Scherzinger: 'The "New Poetics" of Musical Influence: a Response to Kevin Korsyn', *ibid.*, 298–309
- P.H. Smith: 'Brahms and Schenker: a Mutual Response to Sonata Form', *Music Theory Spectrum*, xvi (1994), 77–103
- R. Snarrenberg: 'Competing Myths: the American Abandonment of Schenker's Organicism', *Theory, Analysis, and Meaning in Music*, ed. A. Pople (Cambridge, 1994), 29–56
- A. Whittall: 'Comparatively Complex: Birtwistle, Maxwell Davies and Modernist Analysis', *MAN*, xiii (1994), 139–59
- N. Dibben: 'The Cognitive Reality of Hierarchic Structure in Tonal and Atonal Music', *Music Perception*, xii (1994–5), 1–25
- J. Lester: 'Robert Schumann and Sonata Forms', *19CM*, xviii (1994–5), 189–210
- K. Agawu: *African Rhythm: a Northern Ewe Perspective* (Cambridge, 1995)
- N.K. Baker and T. Christensen, eds.: *Aesthetics and the Art of Musical Composition in the German Enlightenment: Selected Writings of Johann Georg Sulzer and Heinrich Christoph Koch* (Cambridge, 1995)
- D. Beach: 'Phrase Expansion: Three Analytical Studies', *MAN*, xiv (1995), 27–47

- I. Bent: 'Plato-Beethoven: a Hermeneutics for Nineteenth-Century Music?', *Indiana Theory Review*, xvi (1995), 1–33
- N. Boynton: 'Formal Combination in Webern's Variations op.30', *MAN*, xiv (1995), 193–220
- D.K.L. Chua: *The 'Galitzin' Quartets of Beethoven, opp.127, 132, 130* (Princeton, NJ, 1995)
- N. Cook: 'Heinrich Schenker, Polemicist: a Reading of the Ninth Symphony Monograph', *MAN*, xiv (1995), 89–105
- D. Epstein: *Shaping Time: Music, the Brain, and Performance* (New York, 1995)
- A. Forte: *The American Popular Ballad of the Golden Era, 1924–1950* (Princeton, NJ, 1995)
- S.E. Gilbert: *The Music of Gershwin* (New Haven, CT, 1995)
- D. Harrison: 'Supplement to the Theory of Augmented-Sixth Chords', *Music Theory Spectrum*, xvii (1995), 170–95
- B. Hyer: 'Reimag(in)ing Riemann', *JMT*, xxxix (1995), 101–38
- T.L. Jackson: 'Aspects of Sexuality and Structure in the Later Symphonies of Tchaikovsky', *MAN*, xiv (1995), 3–25
- M. Leman: *Music and Schema Theory: Cognitive Foundations of Systematic Musicology* (Berlin, 1995)
- D. Lewin: 'Generalized Interval Systems for Babbitt's Lists, and for Schoenberg's String Trio', *Music Theory Spectrum*, xvii (1995), 81–118
- C. Mark: *Early Benjamin Britten: a Study of Stylistic and Technical Evolution* (New York, 1995)
- C. Nolan: 'Structural Levels and Twelve-Tone Music: a Revisionist Analysis of the Second Movement of Webern's Piano Variations Opus 27', *JMT*, xxxix (1995), 47–76
- W. Renwick: *Analyzing Fugue: a Schenkerian Approach* (Stuyvesant, NY, 1995)
- J. Rink, ed.: *The Practice of Performance: Studies in Musical Interpretation* (Cambridge, 1995)
- L. Rothfarb: 'Music Analysis, Cultural Morality, and Sociology in the Writings of August Halm', *Indiana Theory Review*, xvi (1995), 171–96
- R. Samuels: *Mahler's Sixth Symphony: a Study in Musical Semiotics* (Cambridge, 1995)
- C.E. Schachter: 'The Triad as Place and Action', *Music Theory Spectrum*, xvii (1995), 149–69
- M. Scherzinger: 'The Finale of Mahler's Seventh Symphony: a Deconstructive Reading', *MAN*, xiv (1995), 69–88
- J. Schmalfeldt: 'Form as the Process of Becoming: the Beethoven-Hegelian Tradition and the "Tempest" Sonata', *Beethoven Forum*, iv (1995), 37–71
- J.N. Straus: *The Music of Ruth Crawford Seeger* (Cambridge, 1995)
- E. Tarasti, ed.: *Musical Signification: Essays in the Semiotic Theory and Analysis of Music* (Berlin, 1995)
- R. Bass: 'From Gretchen to Tristan: the Changing Role of Harmonic Sequences in the Nineteenth Century', *19CM*, xix (1995–6), 263–85
- C.L. Krumhansl: 'A Perceptual Analysis of Mozart's Piano Sonata K.282: Segmentation, Tension, and Musical Ideas', *Music Perception*, xiii (1995–6), 401–32
- F. Lerdahl: 'Calculating Tonal Tension', *ibid.*, 319–63
- E. Narmour: 'Analyzing Form and Measuring Perceptual Content in Mozart's Sonata K.282: a New Theory of Parametric Analogues', *ibid.*, 265–318
- B. Alegant: 'Unveiling Schoenberg's op.33b', *Music Theory Spectrum*, xviii (1996), 143–66
- J. Auner: 'In Schoenberg's Workshop: Aggregates and Referential Collections in "Die glückliche Hand"', *ibid.*, 77–105
- C. Ayrey and M. Everist, eds.: *Analytical Strategies and Musical Interpretation: Essays on Nineteenth- and Twentieth-Century Music* (Cambridge, 1996)
- I. Bent, ed.: *Music Theory in the Age of Romanticism* (Cambridge, 1996)
- L.D. Blasius: *Schenker's Argument and the Claims of Music Theory* (Cambridge, 1996)
- H. Burnett and S. O'Donnell: 'Linear Ordering of the Chromatic Aggregate in Classical Symphonic Music', *Music Theory Spectrum*, xviii (1996), 22–50

- S. Burnham: 'A.B. Marx and the Gendering of Sonata Form', *Music Theory in the Age of Romanticism*, ed. I. Bent (Cambridge, 1996), 163–86
- R. Cohn: 'Maximally Smooth Cycles, Hexatonic Systems, and the Analysis of Late-Romantic Triadic Progressions', *MAN*, xv (1996), 9–40
- J. Cross: 'Birtwistle's Secret Theatres', *Analytical Strategies and Musical Interpretation*, ed. C. Ayrey and M. Everist (Cambridge, 1996), 207–25
- W. Drabkin: 'Schenker, the Consonant Passing Note, and the First-Movement Theme of Beethoven's Sonata op.26', *MAN*, xv (1996), 149–89
- J. Dunsby: 'The Poetry of Debussy's "En blanc et noir"', *Analytical Strategies and Musical Interpretation*, ed. C. Ayrey and M. Everist (Cambridge, 1996), 149–68
- D. Griffiths: '"So Who are You?": Webern's op.3, no.1', *ibid.*, 301–14
- E. Haimo: 'Atonality, Analysis, and the Intentional Fallacy', *Music Theory Spectrum*, xviii (1996), 167–99
- D. Headlam: *The Music of Alban Berg* (New Haven, CT, 1996)
- T.L. Jackson: 'The Tragic Reversed Recapitulation in the German Classical Tradition', *JMT*, xl (1996), 61–111
- W. Kinderman and H. Krebs, eds.: *The Second Practice of Nineteenth-Century Tonality* (Lincoln, NE, 1996)
- J.D. Kramer: 'Postmodern Concepts of Musical Time', *Indiana Theory Review*, xvii/2 (1996), 21–61
- D. Lewin: 'Cohn Functions', *JMT*, xl (1996), 181–216
- E. Pearsall: 'Multiple Hierarchies: Another Perspective on Prolongation', *Indiana Theory Review*, xvii/1 (1996), 37–66
- D. Puffett: *Debussy's Ostinato Machine* (Nottingham, 1996)
- C.J. Smith: 'Musical Form and Fundamental Structure: an Investigation of Schenker's Formenlehre', *MAN*, xv (1996), 191–297
- M. Spitzer: 'The Retransition as Sign: Listener-Orientated Approaches to Tonal Closure in Haydn's Sonata-Form Movements', *JRMA*, cxxi (1996), 11–45
- J.M. Baker, D.W. Beach and J.W. Bernard, eds.: *Music Theory in Concept and Practice* (Rochester, NY, 1997)
- R.L. Cohn: 'Neo-Riemannian Operations, Parsimonious Trichords, and their Tonnetz Representations', *JMT*, xli (1997), 1–66
- N. Cumming: 'The Subjectivities of "Erbarne Dich"', *MAN*, xvi (1997), 5–44
- R. Gauldin: *Harmonic Practice in Tonal Music* (New York, 1997)
- R. Kamien and N. Wagner: 'Bridge Themes within a Chromaticized Voice Exchange in Mozart Expositions', *Music Theory Spectrum*, xix (1997), 1–12
- S. Larson: 'The Problem of Prolongation in Tonal Music: Terminology, Perception, and Expressive Meaning', *JMT*, xli (1997), 101–36
- A.F. Moore: *The Beatles: Sgt. Pepper's Lonely Hearts Club Band* (Cambridge, 1997)
- I. Quinn: 'Fuzzy Extensions to the Theory of Contour', *Music Theory Spectrum*, xix (1997), 232–63
- P.H. Smith: 'Brahms and Motivic 6/3 Chords', *MAN*, xvi (1997), 175–217
- R. Snarrenberg: *Schenker's Interpretive Practice* (Cambridge, 1997)
- J. Straus: 'A Strategy of Large-Scale Organization in Stravinsky's Late Music', *Intégral*, xi (1997)
- A. Williams: *New Music and the Claims of Modernity* (Aldershot, 1997)
- L. Zbikowski: 'Conceptual Models and Cross-Domain Mapping: New Perspectives on Theories of Music and Hierarchy', *JMT*, xli (1997), 193–225
- A.P. Krims: 'Disciplining Deconstruction (For Music Analysis)', *19CM*, xxi (1997–8), 297–324
- D. Temperley: 'An Algorithm for Harmonic Analysis', *Music Perception*, xv (1997–8), 31–68
- R. Van Egmond and D. Butler: 'Diatonic Connotations of Pitch-Class Sets', *ibid.*, 1–29

- A. Cadwallader and D. Gagné: *Analysis of Tonal Music: a Schenkerian Approach* (Oxford, 1998)
- M. Grabóczy: 'The Application of A.J. Greimas's Structural Semantics to the Analysis of Sonata Form', *Intégral*, xii (1998)
- J. Johnson: 'The Nature of Abstraction: Analysis and the Webern Myth', *MAN*, xvii (1998), 267–80
- C. Kennett: 'Segmentation and Focus in Set-Generic Analysis', *MAN*, xvii (1998), 127–59
- H. Klumpenhouwer: 'The Inner and Outer Automorphisms of Pitch-Class Inversion and Transposition: Some Implications for Analysis with Klumpenhouwer Networks', *Intégral*, xii (1998)
- D. Lewin: 'Some Ideas about Voice-Leading Between Pcsets', *JMT*, xlii (1998), 15–72
- R.P. Morgan: 'Symmetrical Form and Common Practice', *Music Theory Spectrum*, xx (1998), 1–47
- R.D. Morris: 'Voice Leading Spaces', *ibid.*, 175–208
- R.S. Parks: 'Pitch-Class Set Genera: My Theory, Forte's Theory', *MAN*, xvii (1998), 206–26
- P.J. Telesco: 'Enharmonicism and the Omnibus Progression in Classical-Era Music', *Music Theory Spectrum*, xx (1998), 242–79
- D.K.L. Chua: *Absolute Music and the Construction of Meaning* (Cambridge, 1999)
- N. Cook: 'At the Borders of Music Identity: Schenker, Corelli and the Graces', *MAN*, xviii (1999), 179–233
- D. Puffett: 'Bruckner's Way: the Adagio of the Ninth Symphony', *MAN*, xviii (1999), 5–99
- C. Schachter: *Unfoldings: Essays in Schenkerian Theory and Analysis*, ed. J.N. Straus (Oxford, 1999)
- L. Zbikowski: 'The Blossoms of "Trockne Blumen": Music and Text in the Early Nineteenth Century', *MAN*, xviii (1999), 307–45

## Related Articles

- analysis
  - analytic traditions and music theory:
    - [Musicology, §II, 2\(iii\): Disciplines of musicology: Theoretical and analytical method](#)
  - Becking, Gustav:
    - 'Becking curves':
      - [Becking, Gustav](#)
  - Bruckner's analysis of his own symphonies:
    - [Bruckner, Anton, §8: Metrical and part-writing theories, composition and revision processes](#)
  - computers, role of:
    - [Computers and music, §III: Music theory and analysis](#)
  - contour theory:
  - Dahlhaus, Carl:
    - historical method:
      - [Dahlhaus, Carl, §3: Historical method](#)
    - influence:
      - [Dahlhaus, Carl, §2: Influence](#)
  - deconstruction:
    - [Deconstruction](#)
  - Dunsby, Jonathan:
    - [Dunsby, Jonathan](#)
  - ethnomusicology, contemporary theoretical issues:
    - [Ethnomusicology, §IV, 10: Contemporary theoretical issues: Music theory and analysis](#)
  - folksong:
    - cantometrics:
      - [Cantometrics](#)

- Frankfurt School:
  - [Sociology of music, §2: General considerations, early history](#)
- harmonic:
  - [Harmony, §5: Theory since 1950](#)
- hermeneutics:
  - [Hermeneutics](#)
- Jungian, of Wagner's Ring:
  - Donington, Robert:
    - [Donington, Robert](#)
- Marx, A.B.:
  - Liedform:
    - [Liedform](#)
- metrical:
  - Bruckner:
    - [Bruckner, Anton, §8: Metrical and part-writing theories, composition and revision processes](#)
- the 'new musicology':
  - [Historiography, §3\(vi\): Topics of music historiography since c1750: 'new musicology'](#)
- of the symphony:
  - [Symphony, §II, 1: 19th century: The essence of the genre](#)
- set theory:
  - [Set](#)
- significant contributions, 1910–45:
  - Brinkmann, Reinhold:
    - [Brinkmann, Reinhold](#)
  - Réti, Rudolph:
    - [Réti, Rudolph](#)
- significant contributions, 1970–:
  - Benjamin, William E.:
    - [Benjamin, William E.](#)
  - Bent, Ian D.:
    - [Bent, Ian D.](#)
  - Berberov, Rostislav Nikolayevich:
    - [Berberov, Rostislav Nikolayevich](#)
  - Bukofzer, Manfred F.:
    - [Bukofzer, Manfred F.](#)
  - Cone, Edward T.:
    - [Cone, Edward T.](#)
  - Keller, Hans:
    - [Keller, Hans](#)
  - Morgan, Robert Porter:
    - [Morgan, Robert Porter](#)
- sociology of music:
  - [Sociology of music](#)

## Web Links

### Literature

- [Bonde, L.O.: 'Music Analysis and Image Potentials in Classical Music', Nordic Journal of Music Therapy, vii/2 \(1997\)](#)

Full article republished online

- [MikroPolyphonie \(1994-2003\)](#)

Journal homepage

- [Transkription und Analyse \(Max Peter Baumann\)](#)

Transkription und Analyse