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MUSICAL FACT AND THE SEMIOLOGY OF MUSIC

translated by J. A. Underwood, with an introduction by Craig Ayrey

INTRODUCTION

To describe Jean Molino's essay on the musical fact as 'seminal' gives renewed force to a cliché of critical commentary. Molino's theory is seminal not only as the origin of post-structuralist music analysis, but also – if the pun may be allowed as significant – as basic to the semiology, or semiotics, of music. His reflection on the nature of the musical 'fact' and analysis was a sign of the times in the mid 1970s and has not lost its significance in the early 1990s, despite an apparent lack of activity in music semiotics. The theory has permeated this field for two decades, disseminated primarily in the work of Jean-Jacques Nattiez, and its implications, whether directly or indirectly, are currently being realised, although recognition is long overdue.

Like Ruwet's 'Methods of Analysis in Musicology', Molino's theory originates in structuralism and is thus independent of stylistic context; it is, in effect, a theory for all music. Unlike Ruwet, however, Molino does not define a set of abstract analytical procedures, but proposes a schematic theory of music as communication, which, in conjunction with Ruwet's procedures, facilitates the structural analysis of the problematic 'neutral' level without marginalising creative (or 'poietic') and interpretative (or 'esthesic') factors. These three dimensions, forming the 'tripartition', are the cornerstones of a view of music as a symbolic system, in Molino's terms 'the symbolic operations or processes that necessitate, if not a communication in the strict sense of the word, at least a network of exchanges among individuals',² common to language, painting, the plastic arts, religion and science. Communication is, therefore, indirect: the model of semiosis preferred by Barthes³ and Eco⁴ represented in Fig. 1, dependent on the presence of a code installed in the work and mutually understood by sender and receiver, is challenged and replaced by one in which the unidirectional process of encoding and decoding is supplanted by the poietic process of which the work is the result, or 'trace',⁵ and an

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esthesic process which is essentially a reconstruction of the trace (see Fig. 2). None of the dimensions is identical with any other: each is a potential site of analysis, together with the complete symbolic process as a phenomenon of communication.

Fig. 1



The impetus for the reversal of the simple process of decoding (becoming the esthesic process of reconstructing the message, or trace) is Ruwet's notion of a 'perceptual strategy',⁷ originating in Peirce's concept of the interpretant;⁸ in the present context, this can be defined as the infinite class of possible agents of interpretation of the message. Furthermore, the perceptual strategy intensifies the degree of mediation between the signifier and the signified on the neutral level. Thus, Saussure's proposition that this relation in language is always arbitrary⁹ is extended to mean that, in music as in the other arts, signifieds are innumerable: the trace 'does not directly "signify" anything if by signification we mean the pure presence of an explicit, verbalisable content in a completely transparent "signifier".¹⁰

Molino concludes that the process of analysis is 'infinite' – a statement of the obvious, perhaps, but one which paralyzes the impulse to regard any analysis as sufficient, closed or definitive. The reflective nature of the theory therefore marks a conceptual shift that amounts to more than a fashionable continental drift: as Fig. 3^{11} shows, the symbolic system encompasses all musical and musicological activity – analytical, interpretative, historical and aesthetic. And further, as Molino notes in his 'Afterthought':

The *prototype* of tripartition is . . . the one that corresponds most closely to our experience as people of the twentieth century: we buy, we analyse scores in the manner of Dubois, Schenker, Meyer, Forte, Lerdahl; we wonder how Boulez composes his works; and we listen to Bach, Mozart or Berio.¹²

If this has a somewhat familiar ring today, it is largely due to the work of Kerman and Treitler in their insistence on the inadequacy of positivist

myopia in analytical method and the tendentiousness of Hegelian historical discourse.¹³ But Molino's proposal transcends the blending of the either/or thinking recommended by those persuaded by Kerman: the symbolic system is a complex of undecidables, the absolute provisionality of which is infinite and never static. This is the basis of Molino's critique of both 'analytic' propositions in language (which we may understand to correspond to positivist methods in musicology) and the pervasive, weak sense of 'symbolic' in which 'symbolism is perpetually being transformed into allegory'.¹⁴ Stated in the simplest terms, Molino's thinking is grounded in a critique of the time-honoured dichotomy of the objective ('analytic') and the subjective (the aesthetic or interpretative). Thus, both the concept of code, which is essentially analytic since it can be analysed objectively, and the notion of music as symbolic form capable of unequivocal explanation are rejected. Further, all structural theories, including Schenkerian and set theory, Marxist and Freudian theory, are essentially fictions: 'structuralisms, too, are allegorisms, forgetting the fundamental fact highlighted by Peirce: that the cross-reference of the sign, in the movement of the interpretants that generate one another, is an infinite process'.15

Molino's theory had its most immediate influence in Jean-Jacques Nattiez's Fondements d'une sémiologie de la musique,16 in which the tripartition informs every aspect of Nattiez's method. Having cleared the way for an analysis of the neutral level, Nattiez continued to apply Molino's insights using Ruwet's paradigmatic procedures; but where Ruwet's analytical criteria are abstract, Nattiez's are flexible, in response to the complexities of a work. Like Molino, Nattiez recognizes that even a neutral-level analysis is provisional, since it depends on the criteria underlying the analytical procedure. Thus, a neutral-level analysis can be 'overturned' by the introduction of different analytical criteria or new (poietic or esthesic) data, in order to avoid hardening the concept of structure into a concrete theory. In later work, Nattiez has explored the dimensions of poietic and esthesic analysis (for example, in *Tétralogies*: Wagner, Boulez, Chéreau¹⁷), and Musicologie générale et sémiologie (the first volume of a revised and expanded version of *Fondements*)¹⁸ follows the broad structure of Molino's essay, charting the interaction of the three dimensions in theories of the musical 'fact', in discourse about music and in the analysis of musical parameters. The focus on discourse here is significant, since it applies to all music - to Wagner's writings as much as to a pygmy's statements about the music of his or her own culture¹⁹ – and is not unconnected with recent work on narrativity in music, whether in opera, programme music or what can loosely be called musical syntax.²⁰ Clearly, analysis of the latter must begin on the neutral level in the examination of syntagmatic structure as a search for the rules of combination (if indeed they exist outside the functional harmony of tonal music). It is in this domain that the implications of Molino's theory remain



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unexplored. While the neutral level as paradigmatic patterning of the syntagm is now well understood in principle (and with repeated application has solidified a flexible procedure into a methodology), the analysis of the neutral level as a syntagmatic process is relatively undeveloped. Studies of narrativity – that is, of one process of the symbolic system – have tended to resort to the concept of code which, although of Barthesian complexity,²¹ cannot escape Molino's conceptualisation as 'symbol-as-allegory'.

If Molino's tripartition is the basis of what has been called the 'Nattiez phase' in music semiotics (referring to Nattiez's work up to 1979),²² the direction of recent work drawing on semiotic and post-structuralist theory appears to be setting the stage for a 'Molino phase', centred on the relation of the esthesic process to the neutral level: the examination of the work as poietic trace is increasingly approached not from the neutral but from the esthesic dimension, whether as an examination of reception, existing analyses, aesthetic and political interpretation, or as a study of the process of 'reconstruction' itself (even if sometimes restricted by the concept of code).23 That much of this work is inspired by recent or relatively recent literary theory is of no matter: the result, the trace of all such activity, is an extension of the concept of music 'analysis', which like any other symbolic form is itself susceptible to reconstruction. This topic informs Molino's 'Afterthought', in which the basis of his characterisation of Nattiez's semiotics of music as 'a response to the challenges of the time [1975]²⁴ and the determinants of its present value – as the semiotic theory 'most likely to ask the right questions' 25 – are evidently similar. Fifteen years ago, the issues were, according to Molino, the need to develop a general framework of thought that would integrate the fragmentation of music in practice, in theory and under analysis; the evaluation of the application of new principles to traditional analytical problems through the influence of structuralism and generative linguistics; and, finally, the state of music analysis in France (and, it could be added, in Britain) as a marginal discipline. Today, however, music semiotics offers 'a theory and principles making possible a coherent placing of the various musical disciplines in the form of an authentic "general musicology"'.²⁶ The focus has shifted to the primary issue of the 'status of the analysis and the analyst' (Nattiez's 'analytical situation'27). Investigating this essentially esthesic domain necessitates a new strategy, the comparison of analyses: this alone, Molino suggests, can give a 'coherent significance' to the history of analysis (the past) and to the coexistence of analytical, theoretical and compositional paradigms (the present).

A revaluation of Molino's theory of tripartition should reveal that research on the process and products of analysis can be advanced effectively from within semiotic theory, and perhaps more easily than by applying extramusical concepts which, symbolically, do little more than extend our range of theoretical metaphors. Since this phenomenon is Molino's point of departure, it would seem premature to regard 'Musical

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Fact' only as a historical document, and to give unqualified priority to theoretical strategies that, as literary theorists are acutely aware, contain the seeds of their own deconstruction.

NOTES TO THE INTRODUCTION

- 1. Translated and introduced by Mark Everist in *Music Analysis*, Vol. 6, Nos 1-2 (1987), pp.3-36.
- 2. See below, p.24.
- 3. See Roland Barthes, *Elements of Semiology*, trans. Annette Lavers and Colin Smith (Boston: Beacon Press, 1967), and *S/Z: An Essay*, trans. Richard Miller (New York: Hill and Wang, 1974).
- 4. See Umberto Eco, A Theory of Semiotics (Bloomington: Indiana University Press, 1976).
- 5. This is Nattiez's term. See Jean-Jacques Nattiez, Musicologie générale et sémiologie (Paris: Christian Bourgois, 1987).
- 6. This diagram is taken from Nattiez, Musicologie générale, p.38.
- 7. See below, p.27.
- 8. See Charles Sanders Peirce, *Collected Papers* (Cambridge, Mass.: Harvard University Press, 1931-58). A presentation and discussion of Peirce's 'interpretant' appears in Eco, *A Theory of Semiotics*, pp.68-72.
- 9. See Ferdinand de Saussure, Course in General Linguistics, trans. Wade Baskin (New York, 1959).
- 10. See below, pp.25-6.
- 11. This diagram is taken from Jean-Jacques Nattiez, Fondements d'une sémiologie de la musique (Paris: 10/18, 1975), p.60.
- 12. See below, p.48.
- 13. See Joseph Kerman, *Musicology* (London: Fontana, 1985), and Leo Treitler, *Music and the Historical Imagination* (Cambridge, Mass.: Harvard University Press, 1989).
- 14. See below, p.23.
- 15. See below, p.23.
- 16. See note 11.
- 17. Paris: Bourgois, 1983.
- Paris: Bourgois, 1987. An English translation by Carolyn Abbate is forthcoming from Princeton University Press. For an overview of the present state of research in music semiotics, see Jean-Jacques Nattiez, 'Reflections on the Development of Semiology in Music', trans. Katharine Ellis, *Music Analysis*, Vol. 8, Nos 1-2 (1989), pp.21-76.
- See Musicologie générale, pp.230-43, translated by Craig Ayrey as 'Informants' Words and Musicians' Statements: Some Remarks on the Place of Discourse in Understanding Music', Musicology Australia, Vols 11-12 (1988-9), pp.26-33.

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- See, for example, Henry Martin, 'Syntax in Music and Drama', In Theory Only, Vol. 10, Nos 1-2 (1987), pp. 65-78; Jean-Jacques Nattiez, 'Can One Speak of Narrativity in Music?', Journal of the Royal Musical Association, Vol. 115, No. 2 (1990), pp.240-57; Robert Snarrenberg, 'The Play of Différance', In Theory Only, Vol. 10, No. 3 (1987), pp.1-25; and Robert Samuels, 'Derrida and Snarrenberg', In Theory Only, Vol. 11, Nos 1-2 (1989), pp.45-58.
- 21. See Barthes, S/Z, passim.
- 22. See Jonathan Dunsby, 'Music and Semiotics: The Nattiez Phase', *The Musical Quarterly*, Vol. 69, No. 1 (1983), pp.27-43.
- 23. See, for example, Jonathan Dunsby, "Pierrot Lunaire" and the Resistance to Theory', The Musical Times, Vol. 130, No. 1762 (December 1989), pp.732-6; Patrick McCreless, 'Roland Barthes's S/Z from a Musical Point of View', In Theory Only, Vol. 10, No. 7 (1988), pp.1-29; Arthur Nestrovski, 'Music Theory, Saussure, Theoria', In Theory Only, Vol. 10, No. 6 (1988), pp.7-13; Christopher Norris, 'Utopian Deconstruction: Ernst Bloch, Paul de Man and the Politics of Music', in Christopher Norris (ed.), Music and the Politics of Culture (London: Lawrence and Wishart, 1989), pp.305-47; Alan Street, 'Superior Myths, Dogmatic Allegories: The Resistance to Musical Unity', Music Analysis, Vol. 8, Nos 1-2 (1989), pp.77-124; Alistair Williams, 'Music as Immanent Critique: Statis and Development in the Music of Ligeti', in Norris (ed.), Music and the Politics of Culture, pp.187-225.
- 24. See below, p.47.
- 25. See below, p.49.
- 26. See below, p.48.
- 27. Nattiez, Musicologie générale, pp.171ff.

MUSICAL FACT AND THE SEMIOLOGY OF MUSIC

translated by J. A. Underwood

I THE MUSICAL FACT

I.1 The Confused Impurity

Music, whether we seek to define it or to describe it in its various aspects, can never be reduced to a single entity.

What is music?* A trite, ridiculous question, of course. Everyone knows what music is. But let us look at the definitions. Is music 'the art of arranging sounds in conformity with rules (which vary according to place and time), of organising a period of time with acoustic components', as the *Petit Robert* dictionary says? In that case music is defined by the conditions of its production (it is an art) and by its materials (sounds). For another authority, 'the study of sound is a matter of physics. But the choice of sounds that are pleasing to the ear is a matter of musical aesthetics' (P. Bourgeois, in *Encyclopédie* 1946: 1). Definition by the conditions of production gives way to definition by the effect produced on the receiver: the sounds must be pleasing. For others, music is virtually identical with acoustics, a particular branch of physics: 'Granted, the study of acoustics and the properties of sounds in a sense goes beyond the strictly musical domain, but these "overflows" are much smaller and far fewer in number than is generally supposed' (Matras 1948: 5).

These three definitions, chosen from among many, bring out the difficulty experienced in grasping the polymorphous reality known as *music*. At the same time they reveal an initial dimension of variation of the musical phenomenon that results in a large measure of uncertainty in the definitions. What is called music is simultaneously the production of an acoustic 'object', that acoustic object itself and finally the reception of the

^{*} This article is a translation of Jean Molino, 'Fait musical et sémiologie de la musique', *Musique en Jeu*, No. 17 (1975), pp. 37-62. Used by kind permission of Editions du Seuil. The Editor thanks Jean-Jacques Nattiez for his help in bringing about this publication.

object. The phenomenon of music, like that of language or that of religion, cannot be defined or described correctly unless we take account of its threefold mode of existence – as an arbitrarily isolated object, as something produced and as something perceived. It is on these three dimensions that the specificity of the symbolic largely rests.

The definitions of music that we have used are the upshot of a development that in the Western world determined a restriction and a specification of the musical field. Music, like many other social facts, seems as we draw back from it in space and time to take on heterogeneous – and in our view non-musical – elements. There is no such thing as a universal music, a pool or largest common denominator of the musics of all ages and all countries. So many different realities have been designated by words that are themselves different and relate to various domains of experience!

In the world of ancient Greece, the discovery attributed to Pythagoras plays an ambiguous role. If the principal musical intervals may be expressed in terms of simple ratios between the first four whole numbers (2/1, 3/2 and 4/3), that is proof that everything can be expressed in numbers. Music is thus, together with geometry, the earliest example of mathematical physics – that is to say, of the establishment of a relationship between number and the world of phenomena. It consists in purely theoretical science: the musica of medieval times, which took its place in the quadrivium alongside arithmetic, geometry and astronomy, had nothing to do with either the technique of players or the response of listeners. At the same time, however, both for the Pythagoreans and in the medieval tradition, *musica* assumed its true significance when it became incorporated in the process of purification ($\chi \dot{\alpha} \theta \alpha \rho \sigma_{1c}$) that enabled the wise man to go beyond sensory appearances and, by giving himself up to the contemplative life $(\theta \epsilon \omega \rho i \alpha)$, to discover the order of the world $(\chi \dot{o}\sigma \mu o \varsigma)$. The Renaissance remained true to this musical mysticism, which extended into cosmology and astral religion. Franchino Gatori's Theorica Musicae (1496) upheld and proclaimed the links between music and Platonic cosmology. And the part that the search for cosmic 'harmonies' played in the work of Kepler is well known.

Music is no 'purer' in oral-tradition cultures that it was in ancient Greece. Music accompanies the principal ceremonies and rites of religious and social life. Voices and instruments possess symbolic properties that make them correspond to parts of the human body, to natural phenomena and to supernatural beings. The very field of the musical fact, as accepted and divided up by social practice, never precisely coincides with what we understand by music. In other words, music is everywhere, but it never occupies the same place. There is no greater danger than the kind of ethnocentricity that leads us to distinguish everywhere a restricted music (corresponding to our conception of the musical fact) as the only authentic kind of music and a secondary, complementary area that we both designate and reject by calling it signification or symbolic interpretation – a kind of

unimportant appendage that tacks itself onto pure music without changing the nature of it. 'Not nearly enough is known, however, about the collective representations of which music forms the object in societies without writing. We lack, if you like, pictures taken from within. Too few researchers have tried to find out precisely how the concept of "music" is defined in the minds of the native population. In other words, we should find it very hard to say, no matter what population we were talking about, where music began for them and where it ended, or what line marked the transition from speech to song' (Rouget 1968: 1344).

A key aspect of mythical theories of music is the close relationship between music and language. G. Calame-Griaule showed how, among the Dogon, 'the difference between song and ordinary speech is a difference not in kind but almost of degree' (Calame-Griaule 1965: 529). It is the same with instrumental music. Thus the Dogon feel the need to establish a close system of correspondences between rhythms and musical sounds on the one hand and expressions of articulated language on the other; music and language are translatable, and it is possible to pass directly from one symbol system to the other. This shifting, uncertain line between language and music points up the impossibility of defining a universal music in terms of its material, the phenomenon of sound, because it would mean that you always had to bring language into it. This is one example among many showing the affinities that link the different symbolic forms.

The long history of expressive theories of music (music reflects or arouses the basic passions) and imitative theories of music (music depicts reality) illustrates perfectly how the musical fact is everywhere not merely linked to but closely bound up with the whole body of human facts.

So far we have only talked about philosophies of music – that is to say, theoretical elaborations of varying degrees of complexity. The panorama would be no less varied if we were to look at musical practices. Is there anything in common, for example, between the symphonies of Mozart and the throat-games of the Esquimos of Quebec, between the musical bow of the Bochiman and the Balinese *Kendang*, between the regulated improvisation of traditional musics and the written composition of Western musicians? How do we distinguish between music and dance, song and speech, ludic or magical sound and musical sound?

There is not *one* music, then, but many musics, no music-as-such but a musical fact. That musical fact is a total social fact, and the words of Marcel Mauss apply as much to music as to the gift: 'The events that we have studied are all, if one may be permitted the expression, *total* or, if you prefer – though we do not like the word – general social facts. That is to say, in certain cases they set in motion the whole of society and its institutions... All these phenomena are simultaneously legal, economic, religious, even aesthetic, morphological, etc.' (Mauss 1950: 274).

I.2 The Search for Purity and Its Failure

One solution to the problem of the unity of music is to split it in two, distinguishing a pure, rationalised Western music and consigning all other kinds of music to impurity. But that is to misunderstand the evolution of Western music, which is not a rationalising purification but a constructive symbolic process.

To introduce some order and meaning into what at first sight seems an irreducible diversity, Max Weber put forward a solution (Weber 1921) that many others have taken up since. He suggested that there were two main types of music: Western music and the rest. What according to Weber constitutes the specific character of Western music is its rationality: music gradually becomes a standard practice that takes set instruments and proceeds to erect calculable constructions on the basis of a systematic harmony and a regular scale. The same process is seen in operation in the merchant's book-keeping and in the organisation of a well-ordered music. The European musician is the twin brother of the capitalist Protestant and the modern scientist.

The musical history of the West is thus seen as a process of rationalisation and specialisation. Using the language of fable, we might narrate the history of Western music as follows. Once upon a time there was a (white) man who discovered the laws of acoustics and laid down the universal rules of music based on the nature of things. In this way music, having attained its truth, the culmination of earlier mistakes and experiments, finally became itself in its purity. The man was a combination of Pythagoras, Rameau, Hanslick and Théodore Dubois. Because even when people do not adopt Weber's explanatory schema, they continue to think in terms of the contrast between impure kinds of music and pure music and to say that the other kinds – primitive musics, 'oral' or 'traditional' musics – are not works of art; they are mixed up with something else, fulfilling a social or a religious function, so that it is appropriate, when studying them, to remove the music from the matrix in which it has become imprisoned and distorted.

The break between the science of acoustics and music was consummated with Descartes (1596-1650). In the *Compendium Musicae* Descartes stood by the traditional definition: 'The object of music is sound. Its purpose is to please and to arouse in us various passions.' Music being defined by its purpose, the problem was to establish a correspondence between the properties of sound – rhythm and pitch – and the passions of the heart. Descartes was not afraid to appeal to the forces of sympathy in order to account for that correspondence: if we prefer the voice to instruments, he said, it is because between the voice and man there is the same sympathetic relationship as between sheepskin and the sheep, since a drum covered with sheepskin remains silent when a drum covered with the

skin of a wolf is struck at the same time. In a more general way Descartes appealed to the notion of proportion, a traditional polysemic concept uniting the rules of classical rhetoric, medieval theories and the Platonic mathematics of the Renaissance. But there is a fundamental contradiction in the doctrine of proportion, masked by the ambiguity of the word. This denotes both the proportion – preferably arithmetical – that must exist between the components of the complex musical object and 'the proportion and correspondence of the object with sense'. A supplementary principle makes it possible to establish a link between the two types of proportion. This is a principle inherited from the rhetorical tradition, according to which pleasure springs from the discovery of a relationship that is neither too easy nor too difficult to grasp: the pleasing object is 'the one that is neither so easy to know that it leaves nothing to be desired by the passion with which the senses are accustomed to behave towards their objects, nor so difficult as to cause the senses pain in labouring to know it' (Descartes 1963: 30).

It is this ambiguity that Descartes goes beyond by drawing an absolute distinction between the world of science and the private domain of the mental state. On the one hand there is sound and its mathematical and physical properties: 'Calculations serve only to show which consonances are the simplest or, if you like, the sweetest and most perfect; but not necessarily the most pleasant.' The adjective 'sweet' refers to an objective property of sounds - 'honey is sweeter than olives' - and very precisely connotes the same property as the word 'simple', relating to a set mathematical ratio. On the other hand there is always a mental state induced by the music but with no objective property of sound corresponding to it: 'I am aware of no quality in the consonances that corresponds to the passions.' Proportion has split into two independent notions: mathematical proportion or ratio on the one hand, and on the other hand the 'relationship of our judgement to the object; and because men's judgements are so different, neither the beautiful nor the pleasing can be said to deny any given measurement.'

So there is no point in explaining the signification of a piece of music, even when it sets out to illustrate the words of a poem. After commenting at length on music set by Boësset to a poem by the Abbé de Cérisy – *Me veux-tu voir mourir, trop aimable inhumaine?* – Descartes concludes: 'And know that it is in jest that I have spread myself here, not in order seriously to contradict you but in order to show that reasons of this kind, which hung less on the science of music than on the interpretation of a French song, seem to me to be neither mathematical nor physical but purely moral. Using such reasons, I might easily argue not only with someone else but equally against myself' (Descartes 1967: 297). The meaning or expressive value of music has its origin in subjective associations elicited by sound: 'Secondly, the same thing that makes some people want to dance may make others feel like crying' (Descartes 1963: 252).

Galileo, Mersenne and Joseph Sauveur proceeded to construct a science: 'It was during the seventeenth century that, like mechanics, of which it is a branch, though with certain independent developments, acoustics broke away from the art of music to become a true science of the phenomenon of sound' (Costabel 1958: 510). As a branch of mechanics, acoustics henceforth knew only figures and movements. Consequently it developed by imposing a single explanatory model on all aspects of the acoustic phenomenon. Sound production, its communication and propagation, and its transmission to the ear were studied on the basis of the domain of reference constituted by the mathematisable physical properties of sound considered as a vibratory process. Sound lost its quality, retaining only measurable properties.

Yet although the development of physics destroyed the link between science and the theory of the expression of the passions in music, it was on the other hand to lead to an astonishing claim, namely that the European musical system was based on the nature of things. In other words, the development of musical history in the West was not simply a long march towards the purity of music; it was also the conquest of its truth. Truth being defined as *adaequatio rei et intellectus*, music – as a product of the intellect and of the desire for knowledge – was the reproduction of the world of sounds in its objectivity. It reflected the actual structure of the world.

Is one to give credence to this Western epic, this journey down the broad highway leading to music in its truth and in its purity, to – ultimately – a rational music, the implicit goal of all prior evolution? That would make music part of the great movement of disenchantment with the world that drove the gods from heaven and drained human creations of their emotional expressiveness. Yet even for Max Weber the worm had been in the apple. Weber delighted in tracing the seeds of irrationality in the Western musical system – the asymmetrical organisation of the scale, divided unequally into a fourth and a fifth. The diatonic system, in other words, was not a logically self-contained entity. Weber's profound Nietzscheism led him to acknowledge the irrational foundation, the illogical division on which the whole edifice of rationalism rests. Was pure music perhaps simply the most hypocritical mask assumed by something that was incapable of escaping from impurity?

But it is appropriate to go further and pay serious attention to what Mauss said, namely that the musical fact is as complex and as heterogeneous today as it ever was. The only difference is that a corpus of theoretical doctrine – called music – has grown up that, proceeding along lines analysed by Weber, has gradually become detached from the general body of (to our eyes, heterogeneous) phenomena making up the musical fact. It is only for certain musicians or theorists that music is pure; more precisely, our music is pure because it is ours. This is not to deny that the evolution of Western music made some contribution towards detaching it

from the totalities of which it formed an integral part and purifying it. But that purification was only relative. Other links, other totalities formed themselves that were no more pure than the first. Is the existence of the orchestra pit or the theatrical stage, the string quartet or the prima donna, the concerto or the bandstand, the pop festival or the concert any more natural and closer to pure music than the witchdoctor's chant is to the music accompanying a religious rite? We had better reverse the perspective, then, and say that pure or restricted music is not an essential first datum; it is an artefact, the result of an arbitrary process of subdivision within the total social fact, a process that isolates a domain on the basis of which it is impossible – and would be meaningless – to reconstitute the whole.

The human sciences are used to carving up the continuity of phenomena into more or less circumscribed domains within which socially recognised practices – religion, painting, music – are split into segments with no point of contact: sociology, psychology, history of religion, history of music, etc. However, if it is true that the musical fact varies widely from one society to another, it is no less true that, at any given moment, it constitutes a global entity. That is why the connections established by the various human sciences remain superficial: they cannot, in the abstraction of their domain, account for the relationships uniting the total phenomenon – the musical fact. This is to advocate not some kind of 'holistic' science that would boil down to a mess of verbiage about the dialectics of wholeness but a science that respects the 'natural' articulations of social practice.

If we acknowledge the existence, everywhere and at all times, of a generalised, impure music that includes restricted music or pure music, we can try a different reinterpretation of the line of development that led to pure pseudo-music. It is not so much a process of rationalisation as a process of exploration and construction: music - and not just in the Western world, either – follows a twofold movement of discovery and production. To switch from a whole-tone to a pentatonic scale is at the same time to discover unknown territory and to organise it, admittedly observing topographical data but doing so through a productive, arbitrary act of construction. Dodecaphony is thus the legitimate heir of these earlier – and largely hypothetical – extensions of the musical field.

Among the first operations through which this constructive discovery is seen at work in music was the division of the sound continuum into separate notes. Whatever the actual steps that led from noise to sound and the part played by instruments of fixed pitch, a key stage in the history of music was the creation of a scale. This happened when on the one hand a whole class of sounds was regarded as constituting a class of equivalence – in other words, as being, regardless of their concrete, 'etic' differences, 'the same' – and when on the other hand that class was set against other classes of sounds. The same process is found in language and in music and is what

at a later stage makes notation and then 'emic' analysis possible. This construction is a cultural product, presupposing what K.E. Boulding called a transcript: 'That is, a record in more or less permanent form which can be handed down from generation to generation. In primitive nonliterate societies the transcript takes the form of verbal rituals, legends, poems, ceremonies, and the like, the transmission of which from generation to generation is always one of the principal activities of the group' (Boulding 1961: 64-5). From that point it becomes necessary to learn music... or language; its (arbitrary) components are pre-established (Harris 1971: 7-10).

The creation and development of musical notation offer the clearest possible illustration of this constructive process – homo faber et symbolicus – that operates in music. Direct transcription through memory and the practices of the collectivity gives way to 'dissociated' transcription, 'a transcript which is in some sense independent of the transcriber, a communication independent of the communicator' (Boulding 1961: 65). Writing and musical notation are the two parallel forms of this dissociated transcript that profoundly transformed the conditions of linguistic and musical exchanges. Henceforth it was possible to work with and on the dissociated transcript instead of working directly within the framework and under the control of the practices prescribed by cultural tradition. It is from this viewpoint that we should look upon the latest systems of transcription as 'communication machines'. For all the interminable discourses on the purpose of writing, these tools, too, are tools of dissociated transcription. They are no more 'direct' than writing; their dissociation is not of the same kind. The important thing is that they make it possible to discover and to build.

I.3 The Musics of Today

The evolution of music over the past century illustrates the impossibility of remaining within the framework of an allegedly pure music, which was falling apart even as Weber drew up his theory about it (1921); Varèse's *Ionisation* (1931) brought into play variables not thematised by the Western musical tradition.

Nowhere is the failure of this alleged search for purity in music shown more clearly than in recent developments in music. The last hundred years or so have seen a threefold extension of the musical field thanks to the 'three new facts' that Schaeffer recalls at the beginning of his *Traité des objets musicaux*: ethnographic research, experimental music and composers' questioning of the Western musical system (Schaeffer 1966: 16-18).

This threefold extension of the musical field initially produced an effect of rupture, a questioning of the universality of the classical music system or - as a fall-back position - of its superiority over other systems. This created

an effect of ethnographic distance comparable to that brought about in the eighteenth century by knowledge of the customs and beliefs of the different peoples of the world. Let us take a lesson from the healthy revulsion produced by that distance, and, having turned astonished eyes on others, look at ourselves through others' eyes. What is a musical performer? To us, still, the performer is there; we take him (or her) for granted. The only thing under discussion is the freedom that the composer may – indeed must – accord him. Yet the work is never open and is only half-closed (Charles 1971). If we compare the situation with those in which nothing like the performer exists, then we can ask the question: what is the performer for, why is he there? We can thematise the performer's function, play with it, reduce it, develop it. The performer becomes a variable of music, ready to become part, in the most diverse and unexpected forms, of the process of construction of new musics.

The second consequence of this development is the internal dislocation of the musical system. It was not just the seeds of irrationality spotted by Weber that brought about this dislocation; it was also – and above all – the use of all the possibilities excluded by the norm that has steadily pushed back the frontiers of what is 'composable' and what is 'listenable to'. It is not so much that a rule is repressive, more that there is a permanent invitation to break it. Is it not symptomatic that we find rules being codified at the very moment when 'troublemakers' are beginning to disregard them? The fact is that there is never a self-contained, stable system. That exists only in the retrospective imagination of the theorist, who always turns up when the battle is over. Theory is simply an attempt to justify, by means of 'principles', the most striking regularities of a common practice at a given moment of its development. So the dislocation of the tonal edifice is not the outcome of some theoretical and practical discovery; there never was such a 'system'.

Alongside this internal disintegration, however, there has been an external dislocation that has called into question the role of the musical system within the total musical fact as a whole. To question traditional harmony or attach fresh importance to durations and timbres is to continue to operate within the framework of restricted music – pure music. Alongside this development, however, another one has progressively emerged attacking the separation of music in the restricted sense from the conditions of its existence. The pure musician accepted the existence of quartet, orchestra, concert hall and conductor – institutions of very different ages - as being perfectly natural. The Rite of Spring revolutionised certain habits of composers and audiences, yet it was first performed in the Théâtre des Champs-Elysées by musicians in evening dress, just as in a Degas painting. Production and perception, institutions, rules and habits are reincorporated in the framework of the music, which becomes generalised music. In this way the different components - the different variables - that make up the total musical fact have been progressively

revealed. As far as the Western musical tradition from St Augustine to Descartes or Rameau was concerned, the only two variables of music were rhythm and pitch: 'The means to this end - that is to say, the most remarkable properties of sound – are two: to wit, its differences considered in relation to time or duration, and in relation to the strength or loudness of the sound considered as either low or high' (Descartes 1963: 30). Neither degrees of volume nor timbres were taken into consideration in any systematic way. Variation, through which the variables of music manifest themselves, gradually made use of these two properties, as in Alban Berg's Wozzeck. But analysis – in the strict sense – of the musical fact goes even further. Every moment of musical practice may be isolated and enhanced in order to give rise to new types of variation: variations on the relationship between composer and performer, between conductor and performer, among performers, between performer and listener, variations of gestures, even on silence to end up with a soundless music that is still music through what it retains of the traditional musical totality. It is an allusive music, a music that has meaning only by virtue of the cultural difference between it and the recognised totality of the tradition from within which one particular fragment of musical activity has been picked out. That is the meaning of such silent musics as that of the Zaj group from Madrid (Charles 1973).

In this way a process of relative autonomisation of the different variables in accordance with which the musical fact is analysed has emerged. The principle governing that autonomisation is as follows: *any element belonging to the total musical fact may be separated and taken as a strategic variable of musical production*. That autonomisation plays the part of a genuine musical experimentation as the different variables of the total musical fact are gradually revealed. A particular kind of music is then seen as having made a choice among those variables, favouring a certain number of them. Given these conditions, musical analysis will have to begin by recognising these strategic variables that characterise a musical system. Musical creation and the analysis of music come to each other's aid.

Does that mean that music is becoming standardised to give rise to a one-dimensional consumption music with an ideological and political function? This is notoriously a subject beloved of the prophets of doom and apocalypse of the mass media, who have been criticised but who are always rising from their ashes (cf. Bourdieu and Passeron 1963). So Western music is conquering the world? Well, it is doing so at the very moment of its own disintegration, at a time when it is prepared to welcome every suggestion, every possibility offered to it by other traditions. And music is now a mere object of consumption, is it? But aren't we forgetting the self-evident truth that the more is consumed, the more is produced? Has so much music ever been made as we make today? Mood music and 'easy listening' stupefy and anæsthetise individuals who have become a mass; artifice and technique are everywhere supplanting nature. Music, of

course, has become dehumanised. As if Pythagorean music were a *Musica Humana*. Or as if the Sunday piano hymned by Laforgue represented the ideal of a music both familiar and profound, the only one worthy of man.

As for the dissociation between 'serious' music and 'light' music, a noble music and a base music, one wonders what fantasies obsess those who proclaim it a definitive, tragic reality. Because what we are seeing everywhere today is quite the opposite -a multitude of processes whereby all musics meet, borrow from, merge into, or play with one another. Fortunately there are many musics, and they are very different. Standardisation into bad music is simply an illusion of the bored: *per troppo variar natura e bella*...

If it is true that music is a constructive process of discovery, it is at least probable that we need not fear the death of music, which many people go shouting from the rooftops nowadays, for better or for worse. Any more than it is to be feared that the music of tomorrow will be identical to that of today, no matter how 'advanced'! Proclaiming the music of the future is a barren exercise where it seeks to prophesy. We may, however, be permitted to amuse ourselves with exercises in musical futurology, the sole interest of which is to suggest various scenarios of development on the basis of the musics of today.

The movement of separation of the variables of the musical phenomenon can probably not help but continue. But beyond the autonomy of the variables that are more or less recognised as autonomous by the Western musical tradition, those variables will gradually become liberated that belong to the two dimensions not thematised by our tradition, the dimension of production and the dimension of reception. There has long existed a kind of visual art based directly on the tricks, ambiguities and specific properties of our perception of form. The work of Maurits C. Escher plays on the relationships between substance and form that used to constitute one of the favourite phenomena of the adherents of Gestalt psychology. There are many acoustic 'illusions' (the mask effect, for example), just as there are optical illusions: why not exploit them in a systematic way? One imagines an 'aur art' - the aural equivalent of op art. Certainly, at any rate, the perceptual dimension in music has up to now been the poor relation in the musical process, rather like auditory phonetics in linguistics. Psycho-physiological acoustics probably has many discoveries and constructive possibilities in store for the musician.

The use of computers, if it spreads, is likely to change certain conditions of the musical fact (Mathews, Moore and Risset 1974). More generally, the schema common to all foreseeable musical practices – and there will certainly be some unforeseen ones – boils down to what might be termed a musical game: rules are set, sounds are produced (or not), and those sounds produce effects on an audience (which may well be limited to the creator alone). But there is no guarantee that the listener will know, or recognise, or wish to recognise the starting rules: he may make up others.

What this opens up is the infinite variety of musical games possible, an experimental creation that both makes it possible to know music better and, 'through resemblances and differences, must elucidate the facts of our language' (Wittgenstein 1969: 74). The musical game, which according to Wittgenstein is the precise equivalent of the language game, reveals the infinite multiplicity of forms of the musical and hence of all symbolic forms. The creation of a game – 'It is not a question of explaining a language game by means of our own experience but of establishing it' (Wittgenstein 1969: 76) – corresponds to a 'fundamental opening-up property of the *a priori*' (Granger 1969: 76) – so it is possible to speak of an 'endgame' in connection with the music of today or tomorrow (Deliège 1974: 38). However, instead of seeing an apocalypse here we must hear the voice of the croupier – announcing a new game: 'Gentlemen, place your bets...'

There is every chance, therefore, that people will go on for a long time making something like music – that is to say, something that is both discontinuous and continuous with what we understand by music today. That is why there is little likelihood of our having to change the name of music, whatever transformations are undergone by the musical fact (Mathews, Moore and Risset 1974: 268). Music has known so many revolutions that one more or even several more could never succeed in exhausting it.

I.4 Music as Symbolic Form

In order to define music and understand its evolution it is necessary to see it as a symbolic form.

Why describe music, along with language, drawing or religion, as a symbolic form (Cassirer 1972)? To begin with, we might take our stand on scientific or philosophical authorities. From Head to Piaget, from Whitehead to Cassirer, from Freud to Jung, from Frege to Husserl, from Janet to Wallon, from Peirce to Morris, from Saussure to Buyssens, and from Wittgenstein to Carnap we have seen a broad movement of thought and analysis bearing on the field of symbolic phenomena that has led some to posit the existence of a specific symbolic function. So what is it that makes music or language symbolic?

I.4.1 The Family of the Sign

The starting-point for all definitions of the sign lay for the Scholastics, as it lies for contemporary theorists, 12 in an intuitive datum that is difficult to pin down in any rigorous way. It is the notion of representation or evocation summed up in the phrase *aliquid stat pro aliquo*. All attempts at definition rest ultimately on this 'undefinable' (Granger 1971: 72), the

content of which is always present in the heterogeneous vocabulary used to account for the sign: reference, substitute, representation, signified, etc. But it is probably better to opt for the more neutral term 'cross-reference' (*renvoi*) put forward by Granger, which confines itself to suggesting the relational character of the sign – what the Scholastics called *ordo ad alterum*, which simultaneously implies a connection between and a dissociation of two elements. Possibly the Gomperz formula taken up by Janet best conveys the mode of existence of the sign: it is that and it is not that (Gomperz, quoted in Bühler 1933: 28; Janet 1935: 217).

But as soon as we emerge from this clumsy though unimpeachable intuition, attempts to constitute a global semiology that are based on the classification of symbolic substitutes lead only to subtle, untenable distinctions, confused problems admitting of no solution, and vague and useless theories that do not advance our understanding of symbolic processes one bit.

If we cannot, with regard to man, distinguish the indication or the symptom from the sign or symbol, it is because evocation may equally well be present in both cases. It is striking to discover that, when we try to distinguish the indication from the sign, we are obliged to appeal either to animals in order to define the indication – because we feel sure there is no evocation – or to an external characterisation of the signifier: it is an 'undifferentiated signifier in the sense that it consists of a part or an aspect of the signified' (Piaget and Inhelder 1969: 75). But in that case why deny that there is evocation of the absent whole by the present part? Otherwise, smoke evoking fire is not merely an indication but a sign.

Defining the signal is an equally delicate operation when we reject the easy alternative of defining it by the conditioned reflex experiment and by the function it appears to perform in animals. As far as man is concerned, the signal itself virtually involves an evocation. Bugle calls are certainly signals – and orders – but they are also symbols that refer to signifieds and are at the same time imbued with value.

The fact is that, from the first appearance of the semiotic function in the child, evocation is always a possibility. As the Scholastics clearly saw, *all* substitutes constitute a category defined by the relationship of a substitutor to a thing substituted. And that symbolic pregnancy renders impossible any precise classification of the types of sign that stops at abstract criteria (presence or mode of evocation). Remember Peirce's lesson: every sign is also in varying degrees icon, index and symbol (Jakobson 1966: 26).

Whatever the classification of signs or the definitions selected as frame of reference, music unquestionably occupies a place in the world of the symbolic. Adopting Peirce's tripartition, the acoustic phenomena produced by music are certainly at the same time icons: they may resemble and evoke the noises of the world, they may be images of our feelings – a long tradition that could hardly be considered null and void has regarded them as such. They are indices: depending on the individual case, they may be

the cause, the consequence or merely the concomitants of other phenomena that they serve to evoke. And they are symbols, entities defined and preserved by a social tradition and a consensus that gives them the right to exist. Music is by turns signal, indication, symptom, image, symbol and sign (on this point, cf. Nattiez 1975, Part 2, Chapter 1).

Let us borrow the anthropologist V. W. Turner's analysis of symbolic religious events: they have an exegetic aspect, an operational aspect and a positional aspect (Turner 1968: 17). Music certainly has an exegetical aspect: religious, philosophical or psychological commentaries reveal the signification of sounds. It also has an operational aspect: for music, too, meaning includes 'not only what [is] said about it but also how it [is] used'. And it has a positional aspect: the musical element has meaning only when modified or relayed by those symbols 'adjacent to it in time and space in a configuration' (: 17).

The criterion of the intention to communicate is no more effective. Indeed, two phenomena are usually jumbled together in this criterion. In the first place there is the intention to establish some sort of contact or relationship with an *alter ego*. But at the same time, surreptitiously, there is a sense of the transmission of information of a conceptual nature – that is to say, of a nature that is unequivocally translatable into words. Music does not correspond to the second aspect of the criterion, but it does correspond perfectly to the first. The paradox, in fact, is that in many circumstances language itself does not correspond to the second, so much is the problem of the functions – or the primary, fundamental function – of language more scholastic than actual (Richelle 1971: 113-26). Communication and information, cognitive and affective or the functions listed by Bühler and Jakobson do not make it possible to define specific functions precisely – even less grade them.

The objection will no doubt be made: does the supposed acoustic signifier have a signified, a referent? Let our first answer be another question: what is the referent of the words 'unicorn', 'God', 'abracadabra', 'France' or 'meditation'? Secondly, what is a verbal signified, still taken as a model? I hear the word 'chair'; I hear people around me talking. What do I think? I hear a few bars of *Don Giovanni* or the Op. 106 Sonata; what do I do? Do I feel, dream, commune, imagine, digest? It must be admitted that it is very hard to erect a barrier. If with Quine we think that the problem of signification nowadays plays the same role of deeply philosophical entertainment as the problem of the existence of God used to play, we need have no fear. Let us describe music, religion or language before we ask ourselves in what mode they partake of thought.

The evident paradox of music, which makes it one of the crucial domains of the symbolic, may be summed up in Alain's words: 'That is why in one sense music has no descriptive power and in another sense it possesses a prodigious power of evocation' (Alain 1958: 513). And it was the same conclusion that led S. Langer to define music – certainly a

symbolic form – as an unconsummated symbol (Langer 1957: 240). On the one hand, the unchallengeable presence of evocation; on the other, the impossibility of exploiting it – that is to say, of verbalising it in an unambiguous manner. Basically, the root of the error is believing that language constitutes the model of all symbolic phenomena. In that respect the study of music effects an essential correction to and makes an essential contribution to our understanding of the symbolic: there is more to the symbolic than the phantasmal concept.

So the word 'sign' serves to designate a loose family of related realities that to a greater or lesser degree partake of this defining dissociation and cross-reference.

I.4.2 The Reductions of the Symbolic

Nevertheless, despite the general recognition of the existence of the symbolic and of this special property of cross-reference that is attributed to it, the symbolic is denied as such almost as soon as it is recognised. The notion of 'cross-reference' is reduced, at the end of a detour that may vary in length, to a cross-reference to something: symbolism is perpetually being transformed into allegory. Whether Marxist allegorism or Freudian allegorism, theories of the symbolic hold out a single key that will miraculously open all doors – as dogmatically as Durkheim's allegorism of religion. Structuralisms, too, are allegorisms, forgetting the fundamental fact highlighted by Peirce: that the cross-reference of the sign, in the movement of the interpretants that generate one another, is an infinite process.

Sperber's recent theory is a perfect example of the intellectualist reduction of the symbol that ultimately denies its strictly symbolic character (Sperber 1974). In Sperber's view, symbolic knowledge is opposed to semantic knowledge, which has to do with categories and not with the world, and encyclopædic knowledge, which has to do with the world. In other words, he is utilising and rebaptising the old opposition between analytical propositions and synthetic propositions, of which the least that can be said is that it is far from being clear and well defined. Symbolic knowledge is closer to encyclopædic knowledge than to semantic knowledge in that, as with the former, its data are infinite in number. But on the other hand symbolic knowledge is constructed without taking account of the implications of and contradictions between the different symbolic 'propositions', whereas 'our knowledge of the world is built up by articulating propositions in accordance with these relationships, accepting a proposition only together with its implications, at least the most obvious ones, and similarly avoiding the contradictions' (Sperber 1974: 106).

If distinguishing the two types of proposition – analytical and symbolic – may have some point in a formal system, it has none when what is at issue is a natural language. One fails to see how the proposition 'This lion is an

animal' is analytical, on the grounds that [to make it] 'is to know nothing about lions, not even that they exist... but only something about the meaning of the word lion' (Sperber 1974: 103). In fact this kind of borrowing – very fashionable in linguistics – of logical notions of somewhat indeterminate status serves no purpose, because unfortunately there is nothing in everyday life to distinguish entities or propositions that are 'symbolic' from those that are not: 'Physical objects are conceptually imported into the situation as convenient intermediaries – not by definition in terms of experience, but simply as irreducible posits comparable, epistemologically, to the gods of Homer. For my part I do, qua lay physicist, believe in physical objects and not in Homer's gods; and I consider it a scientific error to believe otherwise. But in point of epistemological footing the physical objects and the gods differ only in degree and not in kind' (Quine 1961: 44).

Because in the world of the symbolic there are implications in and contradictions between propositions, and the existence of major mythical systems well illustrates the degree of subtlety that the theoretical constructions of religious symbolism may attain, reason is just as much at work in those systems as in 'empirical' knowledge of the world. What comes out in Sperber's theory is the empiricist-rationalist prejudice: there is science – or empirical knowledge – which tells the truth, says what is, and there is symbolism, the imaginary, which confabulates freely. Symbolic thought is made up of 'scraps' that cannot as such be incorporated in the framework of 'conceptual representations' – pretty much the view of religion taken by Voltaire and the Président de Brosses. Symbolism is as 'conceptual' as scientific or empirical knowledge. Scientific and empirical knowledge are themselves symbolic phenomena.

The symbolic, then, is not the freedom to confabulate without obligation or sanction – as compared, say, to the seriousness of technology or science. Understanding the symbolic involves first of all describing the systems in which it is embodied.

I.4.3 The Three Dimensions: The Poietic, the Neutral and the Esthesic

Within this family - in the widest sense - of signs it is appropriate to carve out functional sets: the symbolic operations or processes that necessitate, if not communication in the strict sense of the word, at least a network of exchanges among individuals. This is the case with language, with painting and the plastic arts, with music, with religion and with science.

It is appropriate, therefore, to reconsider the schema of communication, commonly adopted as the analytical model of social processes and symbolic processes. This is a mechanistic schema that consists in interpreting the processes of human communication with reference to the artificial constructions of the technicians of communication – that is to say, of the transmission of information. Like every model, it is of local value at

most; under no circumstances could it be taken for *the* model accounting for all the properties of human communication. Now, in the case of the artificial transmission of information, the fundamental hypothesis is that there is a single, well-defined item of information to be transmitted, all the rest being simply noise. It is the same 'reality' at the beginning and at the end of the communication circuit. This hypothesis is dangerously inaccurate and misleading as soon as we move from the artificial communication of information to a concrete act of human communication as a total social fact.

Language, music or religion obliges us to undertake a tripartite analysis of their existence without which precise knowledge is impossible. Lévi-Strauss reminded us that 'the particular situation of the social sciences is of a different kind, having to do with the intrinsic character of its object of being at once object and subject or, to speak the language of Durkheim and Mauss, "thing" and "representation"'. The reason is not so much that observation participates in the object observed; it is that the object is inseparable from the twin processes of production and reception that define it in the same way as the properties of the abstract object, in contrast to what happens in the sciences of nature as constituted since Galileo and Descartes - that is to say, thanks to the distinction between primary qualities and secondary qualities: '... history shows that a satisfactory science need not go so far and that it may, over centuries and possibly over millennia (since we do not know when it will reach its target), progress in knowledge of its subject in the shelter of an eminently unstable distinction between the qualities peculiar to the object, which are the only ones it seeks to explain, and others that are a function of the subject and that may be left out of consideration' (Lévi-Strauss 1950: xxvii-xxviii).

It is not simply a question of reconciling objective and subjective in order to apprehend a social event 'as a thing of which, however, an integral part is the subjective apprehension (conscious and unconscious) we should have of it if, inescapably human, we were experiencing the event as natives rather than observing it as ethnographers'. In fact it is not possible to carve out, reduce to units and organise a symbolic 'object' otherwise than on the basis of the three dimensions it necessarily presents, if it is even true – as we have seen – that the most trite definitions of music cannot avoid referring to one or another of those dimensions.

In the first place it is a product and not simply a transmission, as people are in the habit of saying when they use the misleading model of communication. Music is thus closely connected with technique, both vocal and instrumental, both of the body and of the object. That product is a creation and as such not to be reduced to a purely intellectual or theoretical explanation. According to what the modern Thomists have been virtually alone in keeping before our minds, the arts of the beautiful are *poietic* arts (Gilson 1958 and 1963). They bring into being a new reality. Understandably, then, that reality does not directly 'signify'

anything if by signification we mean the pure presence of an explicit, verbalisable content in a completely transparent 'signifier'.

The musical object is received by the listener, by the participant in the ceremony or the concert-goer – and also, of course, by the producer himself. As Valéry pointed out, however, there is no guarantee of a direct correspondence between the effect produced by a work of art and the intentions of its creator. Every symbolic object presupposes an exchange in which producer and consumer, transmitter and receiver, are not interchangeable and do not have the same point of view on the object, which they do not constitute in the same way at all. So it is advisable to distinguish a poietic dimension and an esthesic dimension of the symbolic phenomenon (Valéry 1957: 1311). But the symbolic phenomenon is also an *object* – matter subject to form. Corresponding to these three modes of existence there will be three dimensions of symbolic analysis: the poietic, the esthesic and the 'neutral' analysis of the object.

The reality produced by symbolic means takes its place alongside the world's other realities and becomes an object. We can thus attempt to describe it. But how can we help noticing that the most effective methods of describing it, as forged in linguistics or in music, are based on what might be termed substitutes for symbolic means? The operations of commutation and the procedures for isolating *emic* units subject the immanent analysis of the object to a criterion that is not itself immanent but is both poietic and esthesic: it is a *judgement* defining a class of equivalence. In this way a methodologically essential uncoupling takes place, in that the passage to formalisation is effected only thanks to our taking into account the symbolic character of the object – that is to say, the triple dimension that alone makes possible its 'immanent' analysis. To put it another way, *emic* analysis is based on the set of the phenomena that make up the symbolic process.

This need to distinguish the three dimensions in the symbolic process is found as much in language as in music. In linguistics, the most typical example is furnished by phonetics: 'The basic fallacy lies in the assumption (made by Jakobson as well as the propounders of the two generative approaches) that there is a universal phonetic framework: by this we do not mean that "any universal framework is as good as any other", but that "universal phonetic framework" is not a meaningful expression. What is in fact needed is one universal framework for each aspect of phonetics: а perceptual framework, an acoustic framework, and an articulatory framework' (Fudge 1972: 174). Phonetic units can be distinguished and defined either at the level of production (articulatory phonetics) or at the level of perception (auditory phonetics) or, thirdly, at the level of the physical substance of the sign (acoustic phonetics). And contrary to what a certain number of amateurs or even non-phoneticist linguists believe, there is no reason to think that the three approaches lead to the same units. On the one hand a sound producing the same acoustic and auditory effects

may be generated by different articulatory means; on the other hand, the same unit as defined from the acoustic point of view may be interpreted differently, depending on the perceptual framework of the listener (Malmberg 1971).

The recent appearance in the work of certain generativists of the notion of 'perceptual strategy' is a further example – this one syntactic – of the need for analysis to have recourse to all the dimensions of the symbolic process (Ruwet 1972b: 252-86). If the recognition – perception – model of an utterance makes it necessary to posit the existence of strategies that on the bases of indices are brought out by the relationships between the components of the utterance, why not go all the way? In which case there is no reason to accept the hypothesis of an underlying structure – single and intangible – corresponding at the same time to the immanent properties of the utterance, to the strategies of reception and to the strategies of production of language. Syntactic analysis makes the same mistake as classical phonetics, for which the articulation of sounds was sufficient to explain them.

It is the same in music. Why suppose that there is - or ought to be -aprecise correspondence between a score, its production by the composer and its reception by the listener? The example of contemporary works is enlightening: there are no simple relationships between the compositional strategies of Berio or Xenakis, the immanent characteristics of the score – not to mention the acoustic object itself - and the elements retained by the listener (Naud 1974). Whence the objection that might be made to the analysis put forward by Ruwet when he exposes the contradictions of serial music. It is true that, in the case of serial technique, there would appear to be a huge distance between – say – what is written down and what is heard (Ruwet 1972a: 23-40). But it is more a question of degree than one of kind: is there any absolute correspondence between a fugue as written and a fugue as heard (Francès 1958: 229-46)? The perception of music is based on the selection, from within the sound continuum, of stimuli organised in categories that stem largely from our habits of perception. For baroque music, for example, a dissemination and a familiarisation have doubtless occurred that have made possible a meeting of the composer's intentions, the music and the listener's interpretations. Only within limits, though, because baroque music appears as a single homogeneous entity only when viewed from а great height, as it were. Musical intercomprehension – that is to say, the most precise correspondence possible between production and reception - is simply an ultimate, an ideal that is never attained.

The important thing, therefore, is not to classify signs abstractly into types and species; a more fitting approach is to study the operations into which they enter and the quasi-systems that they constitute. Rather than start out by asking whether musical signs – or units – are indications, icons or symbols, it is better to describe the properties they display in the sets

within which they become incorporated.

I.4.4 Symbolic Systems

What exist in reality are symbolic domains, differently articulated in different societies but each time constituting a set that is recognised by the collectivity. It is tempting, therefore, to speak of a 'symbolic system'.

For Granger a symbolic system is 'a set of actually given or actually constructible signs' (Granger 1971: 74). So it is the character of being closed that defines the symbolic system: the signs are either given in a finite list, or they can be assembled in accordance with certain rules of construction that, however liberal, lead us to the second condition of effective constructibility. In the most open system, the closedness is virtual, that virtuality being understood 'either as an undefined possibility of new *signs* being generated by means of a univocal rule – as happens with the figures of a system of numeration – or as a possibility of new *signs* being generated under certain constraints that nevertheless leave their realisation partly arbitrary' (Granger 1971: 75).

But we must distinguish between the described system and the posited system. Granger's symbolic systems are not described systems but posited systems – that is to say, they are cut off by hypothesis from any kind of production or reception process. That is why they are themselves amenable to semiological analysis, which re-immerses them in the totality out of which they were generated. But a symbolic process such as language or music is not a system in Granger's sense. The ambiguity stems entirely from the word 'rule' (règle). Social practice presents a whole range of regularities, from usage to custom and from custom to obligation (cf. Weber 1971: 27 and Bourdieu 1972: 206). At one pole is observed regularity, at the other required regularity. The success of the 'code' notion rests almost wholly on this double meaning: from the existence of a norm (the rules of kinship or the rules of counterpoint) one will go on, if one is not careful, to construct a more or less formal system (kinship structure, rules of generation of a grammar or of harmony). One forgets in so doing that there is always a discrepancy between the regularity of the norm and the regularity of practices. All structuralisms rest on the failure to recognise this discrepancy.

That is why we can follow neither Granger when he asserts that the second articulation of language is a formal system (Granger 1971: 80) nor Barbaud when he proclaims that 'music is a scientific discipline' (Barbaud 1968). A formal system describes in a more or less adequate way certain local properties of a symbolic process but is in no case identical with it. That is true as regards the properties of the physical world and even as regards the properties of mathematical theories: 'Thus for every intuitive theory (T) one may expect to have to employ not one but several axiomatisations; each local axiomatisation (S) shares with the intuitive

morphology (T) a "zone of contact" (Z) for which it holds good; but as soon as formulae are constructed in (S) that are too long and too complicated, intelligibility disappears' (Thom 1970: 231).

The formalisable aspect of symbolic processes ought not to obscure their biological character. We must not rule out the hypothesis of a primordial adaptive value of art and hence in particular of music (Young 1971: 519). Work, language, religion and art certainly collaborated in the building of culture without it being possible to pronounce on the decisive role of this or that symbolic form.

It is possible – Leroi-Gourhan does this – to base a biology of art on the values and rhythms that organise elementary types of behaviour: nutritive behaviour, affective behaviour and spatio-temporal situation behaviour (Leroi-Gourhan 1965: 95). However, these biological foundations could under no circumstances account for aesthetic types of behaviour, which imply a process of symbolisation: '... intelligent symbolisation is capable of turning itself round from the summit to the depths of the base, and everything in man is capable of being assimilated into the processes of aesthetically constructive thought' (Leroi-Gourhan 1965: 96). Which is to say that there can be no music without the construction of symbolic acoustic systems capable of cross-referencing to all spheres of experience. Music is indeed a total anthropological fact.

That is why symbolic processes are not systems in the strict sense of the word. They are organised processes, sets of regulated, signifying operations, invested with relative stability. The anatomy and physiology of those organisations are more flexible than in living organisms. At the same time, however, they are close at certain levels to a formal systematisation to which they look forward and of which they constitute the initial sketches. To that extent it is legitimate to speak of symbolic forms or quasi-systems.

II THE ANALYSIS OF MUSIC

There can be no exhaustive scientific or philosophical explanation of the existence of any existent (Gilson 1963: 76).

II.1 Musicology and Musical Analysis

The things that characterise musicology and musical analysis are their recent character - the 'objective' study of music is only a few years old, if that – the burdensome presuppositions that guide them and that are the legacy of their history, and finally their confusion, with regard to principles as much as to methods.

If there is a musical fact, how should it be studied?

II.1.1 The Three Dimensions through the History of Musical Analysis

The very idea of setting out to account for music in its most varied aspects is of only recent date. Indeed, the study of music in the Western world seems to have passed through a certain number of stages, the evolution of which reveals the difficulties experienced in arriving at an 'objective' description of the musical fact. The earliest 'analyses' of music are philosophical theories, almost wholly separated from actual musical practice: 'Once the rules and precepts of logic are known, the proof of which the teacher provides as he teaches the subject, no difficulty is found in utilising them to apply them to this or that matter; it is enough for such a matter to be given for the rules to apply to and cover it without that matter putting up any fresh difficulty to be overcome. As he who possesses the art of music or plays the cithara is able, on the basis of the same precepts of art, to apply his fingers to any of the instruments he is given' (Jean de St Thomas, quoted in Gilson 1958: 133-4).

The term 'analysis', as applied to music, dates from the late nineteenth century. Musical analysis has a history. Prior to the nineteenth century there were only textbooks supplying principles and rules for the production of a 'correct' work. Like the first stage of linguistics distinguished by Saussure, the first stage in the study of musical facts is simultaneously normative and poietic: 'It aims solely at providing rules for distinguishing correct forms from incorrect forms' (Saussure 1922: 13). The titles of the theoretical works of the baroque period reveal this twofold intention: Regole per il contrapunto (A.F. Bruschi, 1711), Nuevo Método de Cifre (N. Doisi, 1630), L'Arte del contraponto (G. M. Artusi, 1598), Nouvelle méthode de musique pour servir d'introduction aux acteurs modernes (M. Marais, 1711) and so on (cf. Bukofzer 1948: 417-31). At that period it was accepted that an 'amateur' – or, to use the vocabulary of the time, a 'curioso' – could not understand music (or drawing, or painting) unless he was also a 'connoisseur' – that is to say, unless he knew how to produce a work, that being the only way to judge it objectively. That is the fundamental signification of rules - academicism or classicism - in music or in literature. Even in the context of the theory of affects, the important thing is not to feel them: the (poietic) problem one sets oneself is knowing how to produce them.

During the eighteenth century there was a gradual shift of viewpoint. Previously art had been regarded as a technique – that is to say, it had been seen primarily from the viewpoint of the creator. Little by little, however – remember that it was the eighteenth century that saw the establishment of aesthetics, the name of which strikingly reveals the foundations on which it rests – the privileged point of view became that of the consumer, viewer or listener. Hence the birth of music criticism, which was virtually contemporaneous with that of art criticism. It was a question now of giving some account of music not for connoisseurs but for curiosi, amateurs, who

did not want a lot of technical analyses. It was enough to say what music aroused, what it suggested; for Diderot music speaks to us directly, as embodied in his tale Le Neveu de Rameau about a young man who through song becomes a girl, a king, a tyrant, and who weeps, laughs, grows calm, thunders and feels sorry for himself: 'It is for the animal cry of passion to dictate the right line for us.' The relationship between creation and perception was thus stood completely on its head: it was the clarity of the effect produced that must guide the creator. The model of art – and it is no accident that the Paradoxe sur le comédien occupies a central place in Diderot's aesthetics, as the 'war of the buffoons' and the 'war of the Gluckites' did in the musical life of the century - was provided by the performer, whether actor or singer. The whole artistic process came to be arranged around the viewer as king, and to this day aesthetics - whether philosophical or scientific – is almost invariably based on the same postulate: the work of art is neither production nor product but consists solely in the reactions it provokes in the viewer. The 'objectivist' reaction, from Hanslick to Stravinsky and Hindemith, belongs in fact to the same conception of music, rejecting the traditional solution without altering the position of the problem.

Musical analysis in the strict sense of the term first emerged with Kretzschmar's *Führer durch den Konzertsaal* (1886) and the works of Riemann (see Erpf 1949-51). From the moment of its birth it manifested an ambiguity that stemmed from its origins and was to influence all its subsequent developments. With Kretzschmar, analysis offers itself as a guide to the music lover and is situated midway between a technical study and a presentation that is both esthesic (what is heard) and aesthetic (why it is beautiful). It takes over from the technical manuals of music-making of the baroque period and later, but also from the reviews written by music critics for the layman.

With Riemann, admittedly, we get a more technical kind of analysis – satztechnische or formaltechnische Analyse – which sets out to give an account of the whole score, from bottom (the tiniest note) to top (the overall construction of the work). The work of Riemann himself is partly distorted by the *a priori* assumptions that he imposed on analysis because of his harmonic and metrical theories. Clearly, though, the tradition of Riemann and in particular the formal analyses of the German school come closest to the requirements of a rigorous, explicit method of musical analysis.

Generally speaking, however, analysis is characterised chiefly by eclecticism and woolly thinking. 'Composition is flexible and complex; analysis must be, too, at the risk of becoming schematic and false' (Fasquelle 1958: 276). We see very clearly here the undue assimilation between two dimensions of the work, the poietic dimension and the immanent dimension: why should formal analysis reflect methods of composition? Moreover, expressive and semantic considerations almost always get mixed up with strictly technical analyses without any distinction

being made between the scope and value of the two types of analysis.

II.1.2 The Musics of Oral and Experimental Traditions Bring out the Need for New Methods of Analysis

The musical datum in the Europe of the early years of this century was a system regarded as both rational and natural; it was the dissociated dual existence of heard music and written music (the score); and it was a set of technical (instrumentation), social (the concert) and psychological conditions (musical expectations, what Schaeffer calls *les intentions d'écoute*, 'listening intentions'). The normal approach to the study of the musical fact thus consisted in starting from those conditions and in reducing whatever music one might be dealing with to those conditions in order to give an account of it. That is why musical analysis, even when it came close to being rigorous, continued to be dependent on the musical system, which it did not dream of calling into question.

Musical analysis must now change and become analysis of the musical fact. Indeed, the contemporary extension of the field of music renders the traditional methods invalid, unusable or inadequate. Developed alongside the evolution of the Western system, they are effective for accounting for works based on that system but fall down with regard to works outside it. This is particularly the case with oral-tradition musics and experimental musics, for which a preliminary problem is that of notation - already resolved by definition in the Western system. Besides, traditional analysis rests on an immediate familiarity with the tonal system, which makes it possible to leave on one side various elements regarded as self-evident. Composers and analysts being linked by their common mastery of the system, there is no need to explain every step since in fact analysis is a moment and a part of the apprenticeship of composer or performer. The principles of analysis of the work are close to - if not identical with - the rules governing production. Clearly this is no longer the case with oraltradition musics, where the analyst, as a stranger to the system he sets out to describe, finds himself facing problems similar to those experienced by the linguist in the field (on this point, cf. Nattiez 1971: 4-5 and 1973; 80). Should he make a broad or a narrow transcription, and above all how can he be sure that he is in fact transcribing all the essentials? The answer, so far as the linguist is concerned, is that it is not necessary to transcribe every nuance that an 'objective' analysis of the material makes it possible to perceive – an infinite task – but only to transcribe the classes of minimal elements that make it possible to distinguish the messages one from another – that is to say, the phonemes. How will the ethnomusicologist go about it? And how does his work relate to that of the classical analyst?

When it comes to the transcription of experimental musics, the problem is more complicated. Here there is no longer a musical competence making it possible to define classes of units characterised by a set of

relevant features. Whence the subtle and complex researches in prospect for musicians and analysts, listing the signs actually used by composers and creating new signs. However, by a significant reversal we are here approaching the very limits of notation. In his Introductory Catalog of Computer-Synthesized Sounds J.-C. Risset supplies three types of information: a recording of the sound, a transcription in quasi-traditional notation and finally a description of the physical properties making it possible to synthesise the sound concerned. The role of traditional transcription is losing its importance here and may even be reduced to zero: 'Direct digital synthesis offers the possibility of composing directly with sounds, rather than having to assemble notes...' (Mathews, Moore and Risset 1974: 265).

How and on what basis, then, is analysis to proceed?

Oral-tradition musics and experimental musics do more than simply issue a challenge to notation; they effectively call into question the very goals of musical analysis. If the musical fact does not anywhere present the same outlines, is it legitimate to carve out one domain – that corresponding to our pure music – and to confine analysis within the borders of that domain? That would be like saying that the works of Berio, Stockhausen or Cage, or the musics of Africa, are non-analysable and do not form part of music. No method of analysis, be it traditional or not, may *a priori* set limits and assert: music stops here.

II.1.3 Analogies between the Present State of Musicology and the State of Linguistics before Saussure

There is certainly no shortage today of candidate disciplines for the study of music: theory of music, history of music, musical acoustics, ethnomusicology and musical analysis, not to mention such 'subsidiary sciences' as musical iconography or music therapy.

One discipline, if its name is to be believed, ought even to take care of the whole body of questions raised by music, namely musicology, 'a paramusical discipline that researches, formulates and resolves problems connected with the history of music, with its aesthetics and with music itself in its various manifestations' (Machabey 1969: 119). But is there really such a thing as musicology as a fully-grown, conscious, organised discipline? It is not showing an unreasonably critical spirit to reply simply: no. Musicology is a hotchpotch of bibliographies, sources, subsidiary sciences and scraps of history with a dash of composition and a pinch or two of musical aesthetics, sociology, philosophy and so on.

The state of musicology today is unmistakably reminiscent of that of the linguistic disciplines before the stage that it has become customary to describe symbolically as 'the Saussurean revolution': '... if we study language from several angles at once the object of linguistics appears to us as a confused mass of incongruous things unconnected with one another.

It is in proceeding thus that we open the door to a number of sciences – psychology, anthropology, normative grammar, philology, etc. – that we clearly distinguish from linguistics but that, given some incorrectness of method, might lay claim to language as one of their objects' (Saussure 1922: 24-5).

There are many analogies between the various disciplines that made up pre-Saussurean linguistics and those that are today mixed up in musicology. For normative grammer, read the theories, treatises and courses – whether of harmony or composition. For philology, read the history of music. For comparative grammar, read vergleichende Musikwissenschaft. In both cases there are similar problems of origin, signification and interpretation. When musicologists distinguish between, contrast or seek to reconcile systematic musicology and historical musicology (Seeger 1939; Wiora 1948), how can we fail to be reminded of the distinction put forward so vigorously by Saussure?

The fact is, there are not only analogies but also – in the strict sense of the term – homologies between language and music. Not that music is a language or language a music – whence the blind alleys taken by the kind of musical analysis that bases itself slavishly on linguistic models; rather that language and music are two examples of a symbolic form, and that it is as symbolic forms that they have a certain number of properties in common. Analysis of music and analysis of language are both semiologies, which accounts for the many parallels that we shall establish between the two domains, parallels based not on any kind of prerogative granted to music or to language but on the existence of a common problematics and the fruitfulness of a systematic comparison.

II.2 The Saussurean Revolution

From the confusion of musicology we must move on to an explicit, rigorous analysis capable of serving as a universal frame of reference.

If the study of human facts is still at a pre-Saussurean stage of analysis, the linguistic metaphor and reference mean primarily this: the Saussurean 'revolution' consisted in defining a pure sphere of language – the level of the langue or language system – that is by rights irreducible to any one of the human sciences. That is to acknowledge the deep legitimacy of the subdivisions effected by social practice: in logical terms, linguistics exists before the sociology or psychology of language. In the same way the other major types of symbolic operation exist beyond the subdivisions that it is still customary to impose on them: prior to the sociology or psychology or art and religion you have the theory or science – still largely to be established – of religion, art or music.

However, in order to define this field of the linguistic or the musical an arbitrary division is necessary, because what the observer sees before him is

the heterogeneity of the facts of speech and musical facts. And it becomes clear why this desire for purity in analysis is more or less contemporary with the proclamations of purity in the poetry or art of the Symbolists and the 'Formalists': the autonomy of the variables in symbolic forms is primarily the autonomy of the symbolic forms themselves.

It is precisely because Saussure attached his name to this demand for purity in the analysis and subdivision of the object that it is permissible to refer to a moment of linguistic research as 'Saussurean', even if not all the theories and developments associated with Saussure's name were in fact explicitly present in his work.

The hypothesis of a langue or language system as distinct from parole or spoken utterance leads to the construction of a framework and a procedure of analysis that are by rights universally valid for all periods and for all forms of music. If it is true that the history of music 'has to begin with a calling into question of virtually all the ready-made ideas on which our musical habits are based' (Chailley 1967: 9), how shall we go on using the tools of analysis that are the product of those musical habits? And if we abandon those tools, where should we look for new one?

However, perfecting a universal framework does not mean imposing on all musics a system of exploration broadly derived from our own musical competence. On the contrary, it means that only analysis of the music of a period and of a country must bring out its system. Corresponding to the synchrony/diachrony distinction there is the distinction of the different synchronies represented by languages or musics belonging to different cultural areas. That is the crucial significance of the distinction between etic units and emic units. There is indeed a universal framework of description of systems, but only thanks to the kind of uncoupling that does not impose a single systematicity on the whole body of languages and musics. That is why we cannot, a priori, separate the musical from the acoustic: music is the sound assembled and accepted by a culture. It is to the credit of G. Rouget (1961), N. Ruwet (1972) and J.-J. Nattiez (1975) that they have put forward and perfected a procedure for analysing musical texts that is equally applicable to a Yoruba chant, a fourteenth-century Geisslerlied, Debussy's Pelléas et Mélisande, Brahms or Xenakis.

The third requirement evident in what we have called the Saussurean revolution is a *principle of explanation*. Whether it is a question of traditional grammar or classical musical analysis, the procedures are approximate. When anyone tries to define units, at whatever level, or determine the laws of their grouping, the criteria are mixed and the woolly results reflect a synthetic, intuitive view of the objects and their relationships. The traditional notion of the 'subject' in linguistics represents a jumble of several characteristics based on different criteria of recognition and not always all present. At least four types of subject can in fact be distinguished: the logical subject (the doer), the modal subject (the grammatical subject proper), the psychological subject (the theme [as basic

idea] as opposed to the rheme [as its particular verbal form]) and the informational subject (the given as opposed to the new) (Lyons 1968: 343-4; Halliday 1970: 158-65). In some cases all the properties are present and the criteria coincide; that is where traditional analyses are strong. But when the criteria conflict, grammar offers a shaky solution. One senses that the response is more a matter of habit and belief than of reason.

It is the same in music. In a seminal article J.-J. Nattiez and L. Hirbour-Paquette demonstrated the difficulties of traditional musical analysis using the example of the Prelude to *Pelléas* (Nattiez and Hirbour-Paquette 1973). Simply juxtaposing the various analyses of harmony, rhythm and motivic construction makes the contradictions glaringly obvious. So who is one to believe? It is the great difficulty of all hermeneutic procedures: 'One has in fact to try to resolve the conflict between the brilliant artists of exegesis by falling back on universal rules' (Dilthey 1947: 334). And even if we concede brilliance to all musicologists as well as to grammarians, where shall we find the universal rules that will settle their conflict? The scandal lies not in the existence of contradictions – there is nothing inherently surprising about that – but in the fact that other analyses are possible. There is neither explanation nor hierarchisation of the criteria of organisation of the score.

Hence the revolutionary character of the demand for explanation in linguistics and in music, a demand 'never to accept anything as true until I know from the evidence that it is' - the evidence here being simply the stating of an explicit rule that permits an unambiguous answer to the question asked. One might wonder what got in the way of clarification of the criteria and why so ordinary a requirement won acceptance with such difficulty and so late in the symbolic domains. The fact is that grammar and music are disciplines in which the doctrines of the rule and the doctrines of spontaneity, while being mutually opposed, nevertheless rubbed along quite well together. Between the analogists of Alexandria or Basra and the anomalists of Pergamum or Kufa a debate started up in which the prescriptive mingled with the descriptive. Beginning in the eighteenth century, attention switched to the conflict between the original - the creation of a single subjectivity – and the normal in the strict sense of the word, a mean accepted and acknowledged by the community. What was rejected in both cases was the possibility of regularities in human operations or human creations.

This concern with explanation makes it easier to understand the relationships existing between the new linguistics and traditional linguistics, between classical musical analysis and a new kind of musical analysis. The intuition of traditional analysis is an irreplaceable source of data and suggestions based on the expert's familiarity with his field. Of its kind, that intuition is unchallengeable and must remain one of the foundations of analysis. If we may be permitted a metaphor, however, the passage from intuition to clarification is like the change that occurs in one's

perception of a landscape when, having walked through it, one flies over it in an aeroplane. The object is the same, but the viewpoint is different. It is therefore possible to say simultaneously that there is nothing new and that everything is new: 'The procedure outlined below consists essentially in extending the technique of substituting single morphemes (for instance, "man") for signals of morphemes (for instance, "intense young man"). Insofar as it employs sequences, this procedure is similar to the type of analysis currently practised in syntax. In other words, its principal usefulness is probably its explicit character rather than any novelty of method or result' (Harris 1968: 23).

A demand for systematicity – the hypothesis of a *langue* as opposed to a *parole* – a demand for universality and a demand for exploitation were the three principles of the Saussurean revolution. *Those principles were embodied in a method of analysis that was essentially combinational:* 'The second [precept], to divide each of the difficulties that I would examine into as many fragments as possible – and as was necessary, the better to solve them.' Text is analysed thanks to systematic study of the combinational possibilities of explicitly defined units. Now, if those units can be defined, it is because language appears to possess a certain number of specific properties. It is made up of arbitrary, linear, differential elements, these three features of the linguistic sign, expressly acknowledged by Saussure, giving it its discrete character. Analysis – that is to say, tracing back to the earliest constituent elements – is therefore possible, at the same time as the revelation of permitted or attested sequences constituting the fully-formed utterances of the *langue* (Harris 1971: 13).

In the system of Western tonal music there is a base unit, the note, whose existence is guaranteed by a large number of convergent indices: the role of notation in composition, execution, listening and musical culture, the existence of instruments of fixed pitch and so on. We must avoid jumping to the conclusion that that unit is the musical unit in the same way as the number one is the unit that, added to itself, is capable of generating all numbers. The note unit is primarily an 'amalgam' of heterogeneous characterisations: it indicates simultaneously an absolute pitch, virtual intervals, virtual degrees and functions, and virtual rhythmbearing durations. That is why the single note could never constitute a unit on its own – because its most important properties (intervals, degrees and functions, rhythms) remain virtual until at least one other note is joined to it. Whatever the ambiguity of traditional definitions, this is the reason for the recognition of 'cells' or 'motifs' as the second level of organisation of a musical text. Beyond the 'motif' we are obliged to posit broader units, combinations of 'cells' of varying degrees of complexity. It is probable that they exist at more than one level, but at least one level is necessary. So the hypothesis one might advance, at least as far as tonal music is concerned, would be one of three levels of units: the note, the elementary group of notes, and combinations of elementary groups. Observe, incidentally, that

the comparison with linguistic units is suggested even more strongly now, the note resembling the phoneme in that it *cannot* exist on its own.

When it is a question of an oral or contemporary music, the situation is different: there are no *notes*. So how should the analyst set about his task? The procedure employed by certain ethnomusicologists (e.g. Arom 1970) consists in using the commutation test.¹ If our hypothesis is correct, the test is able to work because the unit concerned is comparable to the phoneme: in both cases the judgement of identity or difference relating to acoustic sequences makes it possible to define the classes of equivalence that, by their combination, constitute the set of possible sequences. The problem is thus not one of the thing signified but in the strict sense a problem of articulation: how to generate the possible sequences on the basis of irreducible units?

At any rate it would be necessary to add an extra level of organisation of the musical text, namely the metrical, fairly comparable to poetic metre and no doubt amenable to a similar kind of analysis (cf. Halle-Keyser 1966). It is quite remarkable, in fact, that the level II units obtained by the Ruwet-Nattiez method are often units of metrical length. And let us not forget that other parameters – timbre, loudness – play a part, even if in Western tonal music it is usually a secondary one. So we see the complexity of the phenomena, even if we confine ourselves to thinking about melody, which is obviously an abstraction that means losing a considerable amount of information – useful information even as regards describing the amalgam we call 'melodic line'.

The situation is quite different when we pass from the analysis of irreducible units to that of higher-level units, and this applies as much to *language as to music.* Here commutation in the strict sense can no longer operate, and the starting-point of analysis is the phenomenon of restrictions of combinations: 'The fact that all the combinations possible are not realised makes it possible to define all complex elements (morphemes, for example) as restrictions imposed on the combinations of simple elements (phonemes)' (Harris 1971: 13). This makes the fundamental lack of symmetry between phonemes and higher-level units clearly apparent. What method should we use? A distributional method that 'consists in looking for the regularities that arise in accepted sequences of elements and do not arise in those that are rejected' (Harris 1971: 15). However - and this is the radical parting of the ways between language and music – the elements of analysis are isolated by applying a test of repetition. We shall not go into the difficult problems raised by the conduct of analysis (Ruwet 1972b; Nattiez 1975). Our aim was to demonstrate the complexity of the resemblances and differences between two domains in which certain common principles may be put into operation, though calling for specific procedures in relation to the particular properties of the domains concerned. What is certain is that from that moment on precise problems arise and knowledge may genuinely

be advanced.

To conclude this presentation of the Saussurean revolution, it is important to stress the absolute necessity of the combinational stage. Firstly, this stage is of crucial epistemological value, leading as it does to a consideration of symbolic events not as things but as objects, which is quite different. For musical facts are no more things than social facts, a thing being characterised according to Durkheim as that which does not depend on us - an extraordinary avatar of Stoic morality destined to furnish the basis for the science of sociology! It is only possible, at a certain level of abstraction, to express a few of their properties as embodied in units that are both given and constructed. This explains why wrangles about units linguistic or musical – are bogus wrangles. Units change or can change as we pass from one level of abstraction to another, from one aspect of phenomena to another. Nevertheless, the fact remains that the construction of objects makes it possible to analyse symbolic phenomena.

But the combinational stage possesses another epistemological value. It imposes a descriptive cure at a time when a passion for theorising is supplanting the pleasure of knowing and discovering. Let us indulge at this point in a hymn to absurdity - that is to say, in today's terms, to classification or, as it is called, taxonomy: 'Moreover, the method proposed does not employ any new methods of analysis. It amounts solely to writing down the techniques of substitution that every linguist uses when working on his material. We work more efficiently when thinking with pencil and paper' (Harris 1968: 23). The fact is, the conflict between classification and theory is not a bogus problem. Classification is not pure inductive observation of alleged facts, and a formal system is not enough to base a theory on - it is not even necessary (think of atomic theory during part of its history, or the theory of evolution even today). It is certainly true that there is no classification without theory; that is to say, without hypotheses. Classification has nothing to do with Baconian induction. In order to classify you need criteria, and the whole question is: are they the right ones or the wrong ones? Conversely, however, theory always implies classification. Galilean physics was also a fresh classification of movements, as pathological anatomy and physiology made possible a fresh classification of types of illness, part of topology sets out to classify surfaces, and so on. The epistemological mistake comes from classification being reduced to classification in accordance with immediately given or, if you like, 'visible' criteria. Theory is the moment of the scientific revolution; it is science's Sunday, leaving the other six days for observation, experiment and classification. What is the transformational part of a generative grammar if not - in its most solid part - a topology of the relations of 'proximity' between sentences? The richness of the combinational stage is that it carries with it the obligation to decribe, classify, analyse and so on.

II.3 The Post-Saussurean Revolution

Combinational syntactic analysis is only a stage – necessary but provisional – in the analysis of the musical fact; the second stage consists in incorporating the other dimensions of the work – the poietic dimension and the esthesic dimension – into the analysis, which results in fresh subdivisions and fresh relationships.

But the significance of the Saussurean revolution is purely historical and relative. It constituted a stage, to be followed inevitably by other stages (Jakobson 1973). The fact is, a purely 'formal' analysis is impossible. At the starting-point of the combinational process – definition of units – and right through the process of analysis, we are obliged to fall back on substance – substance of expression and substance of content, properties of acoustic material as well as semantic or pragmatic data.

Saussurean analysis starts from a text or transcription or must end up with one: to analyse is to write down (Granger 1960). This means regarding as null and void the long labour (theoretical and practical) of abstraction that has made it possible, on the basis of the experienced symbolic fact, to turn the analysis into a document: 'It is not generally realised by non-linguists how indirect is the relationship between observed or observable utterances and the description that the linguist makes of these utterances' (Lyons 1972: 55).

But this is more than simply a preliminary. The rules of combination arrived at by analysis describe only some linguistic phenomena and are inseparable from the lengthy process of abstraction from which they spring. It might be said, twisting the sense of what has become a commonplace, that the phenomena under consideration are all surface phenomena (including, of course, if we adopt the framework of transformational generative grammar, the deep structure; in fact, this constitutes an objection to the notion of deep structure, the sole merit of which is to be posited *in order to* solve surface problems).

The abstract sequences on which analysis bears are not self-sufficient, so a purely immanent analysis of them is impossible in principle. The best indication of that impossibility is found in the difficulties encountered by all syntaxes: they have to follow the path that leads from the rejection of semantics to its incorporation in theory, which is progressively led to break up as a result. And here semantics is only a convenient – and confusing – name to denote precisely everything that the process of abstraction had abandoned *en route*. The situation is the same in linguistics and in music: no combination, however sophisticated, could give an exhaustive account of a musical text.

The situation becomes clearer when we refer to linguistics and to the two major moments behind its recent development: what might be called the moment of purity and the moment of mixing, the moment of *langue*

and the return to *parole* as a heterogeneous set of language facts. The first moment is the Saussurean era. Laying the foundations of linguistics, as when it was a question of laying the foundations of physics or economics, meant defining a restricted field of pure, abstract phenomena among which definite relationships were posited, ruthlessly dismissing the whole concrete thickness so blindly obvious as to get in the way of singling out what was essential. Thus syntaxes could be constituted that were sooner or later taken over by formal systems. But the notion of syntax is relative - not absolute, as Morris believed. Or rather, there are two objects that should not be confused: syntactic description and the formal system used for description. However, after a certain time, at a certain point in the analysis, the data for which syntactic description – distributional or generative – seeks to account are no longer sufficient. That is the moment of crisis and of the necessary renunciation of purity. Generative semantics, like the changes made by Chomsky to the Aspects system, illustrates this second stage. The syntactic fabric is as it were riddled with holes that cannot be taken care of at the purely syntactic level; it is necessary to fall back on the composite of pragmatic semantics.

It is probably the same in music. Taxonomic analysis in paradigms inevitably runs into difficulties and comes up against limitations. Because 'formally' – that is to say, through operations of deletion, addition, permutation, transposition, etc. – it is possible to move from any sequence to any other sequence. A general classification of musical transformations would for the moment appear to be ruled out or unusable (cf. the one put forward in Osmond-Smith 1973). One other way is possible in the emic tradition: that of confining ourselves to considering the most frequent transformations in a given homogeneous corpus. But it is clear how we are obliged to work in 'soft focus', as it were: the combination meets its limitations everywhere.

The separation of *langue* – as opposed to *parole* – is thus doubly relative. It is relative with regard to the theoretical and practical process that made it possible, and it is relative with regard to the reality of symbolic exchange. On the one hand *langue* is cut off from the work of cultural construction of which it is the culmination; on the other hand it is cut off from the production and reception that are an integral part of the exchange of *paroles*. What is at issue to this day is the possibility of bringing to completion a combinational analysis of the (linguistic or musical) text – as separated from its production and reception, reduced to a specific transcription and regarded as definitive. However, a further objection could be made to the combinational method as such (cf. Thom 1970). We may wonder, in fact, whether other models than combinational models might not be more suitable for describing certain properties of the symbolic systems of language and possibly also of music.

In this respect it is worth asking questions about the nature of transformation as defined and utilised by linguists. Remember first of all

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that there seems little chance, at the moment, of clearly formalising the operations of transformation, despite several attempts to do so. The question then arises whether the reason for this is not that the intuitive content of transformation lends itelf only with difficulty to combinational treatment. That intuitive content is in fact more an idea of resemblance, of similarity – and not always of paraphrase – of proximity between several utterances. But is it certain that these properties of proximity can be analysed with the kinds of tool provided by formal grammars? Far from it. That is why we prefer to speak not of a *langue* as opposed to *parole* but of a *message level*, a *neutral level of analysis*. It is a doubly neutral level in that it consists in a description of the phenomena in which the conditions of production and reception of the message are not involved and in which neither the validity of the transcription nor the tools used to account for it are called into question. So the delimitation and description of the neutral level are provisional: this is the beginning of an uninterrupted dialectic.

If we relate the neutral level to production and reception, a theoretical problem arises that is indistinct in its terms and yet inevitable, namely how to account for the process as a whole? It is a problem of stability, if you like: from thousands of individual exchanges springs a reality that, though indistinct, is nevertheless regular enough to be describable with a degree of approximation. Obviously that regularity can be 'explained' by the learning process, which is clearly a key factor in its operation. Learning, however, does not explain in any precise way the link that exists between the infinite individual variations and the relative stability of the whole: a linguistic system or a musical system that is very gradually and steadily evolving. Langue can then be regarded as a form, not in the algorithmic but in the qualitative sense of the term (Thom 1972). Symbolic processes would have to be compared to living *forms*, which would justify use of the expression 'symbolic forms' to denote these new types of living form that are cultural realities. In view of this, would it not be a good idea to abandon quantitative methods of analysis in favour of purely qualitative ones? The notion of structural stability plays a crucial role, for what is involved is precisely the property that a form possesses of tolerating minor disturbances without ceasing to be identifiable.

Whatever the future of the hypotheses advanced by Thom, one thing must be said: just as no model of description can claim to be exhaustive, so neither can any claim to be exclusive. This is a lesson not in eclecticism but in scientific toleration. Music and language still have much to teach us.

II.4 Analysis of the Total Fact

Analysis of the musical fact is an infinite process.

What, then, is musical analysis? It is this dialectic of scientific work that, starting with the 'neutral' analysis of the acoustic material transcribed by a

social practice that is already an analysis, progresses by defining fresh strata of analysis as it goes, either by incorporating data borrowed from other dimensions (production and reception) or by questioning the tools used for analysis and trying to forge fresh ones.

A question then arises: can this analysis be done within the framework of a single formalism? That was the old dream of those who thought with Durkheim that they could account for religion in terms of its origins, reduced to a specific type of relationship to the sacred: society gathered together worships society itself. To the reduction of the symbolic is added explanation by a single mechanism, the symbolic being simply a detour by which society finds itself again. But many theories of language, without being as immediately reductive, form the hypothesis of a single mechanism capable of describing and explaining linguistic phenomena as a whole. The most flagrant example is provided by generative-transformational theories, for which a single formalism, miraculously corresponding to a single mode of existence and description, by rights suffices to analyse language. However, even leaving aside the concrete difficulties that such a requirement comes up against, comparison with other domains shows how unacceptable the requirement is. There is not, nor could there be, a single formalism that exhausts the properties of a domain of what exists, of a distinct area of existence recognised as such by social practice. Could a single formalism account for all the properties of a table, a mountain or a living organism? If there is no single study procedure in the physical and biological sciences, how could there be one for language, music or religion? It is not enough to posit abstract levels of representation, linked by rules; there is no way of making sure that the levels always correspond in every case, once the number of those levels exceeds two. Subdivision of the object must not be confused with actual structuring of the world.²

So does that mean we are left with a fragmentation into separate specialities, each one carving out its domain in language or music? Note first of all that the sciences of nature themselves, as they evolved, saw the erection of frontier disciplines that took care of the links between the various formerly distinct disciplines. In the case of symbolic phenomena, however, synthetic disciplines are made necessary by the very properties of the symbolic. If, to resume Granger's analyses, the science of the human fact uncouples an area of experience and dislocates it in order to objectivise it, nevertheless the experience is always there. However, the validation and application of results in the human sciences necessitate their integration in a provisional synthetic model. That is the foundation of and the reason for methods of simulation in the human sciences. It is the revenge, if you like, of experience on the formal.

If we accept both the impossibility of a single formalism and the need for a provisional synthetic model, what are - and is it possible to anticipate - the modalities of such a model? A metaphor often used nowadays to describe the complexity in which human phenomena present themselves is

that of layers. The danger of the metaphor is that it may be taken too literally. If we take a cream slice, for example, made of puff pastry, the layers of pastry flake lie neatly one on top of another and match up from one piece to the next.

If the layers do not match up, if there is no correspondence between strata, it is appropriate to construct models of the links between strata, which will themselves be regional models. Instead of a single system of systems we end up with a number of stratifications of strata, irreducible to a common format. The most typical example is provided in this case by the three subdivisions in terms of the production, the reception and the immanent properties of the symbolic message. Whether in language or in music, the major question today is certainly the articulation of the three analyses, like the articulation of the different 'levels' of a section through the phenomenon – phonology, morphology, and syntax and semantics, in the example of linguistics.

Beyond the analysis and synthesis of each of the symbolic forms, our inquiry may be directed at the relationships between the various fields of the symbolic. This is a far more fruitful study than the approach that consists in starting out from abstract definitions of sign and symbol and coming across their properties here or there. The starting-point is analysis of each of the symbolic forms. Of this kind of comparative semiology only one branch has been developed so far: the one that consists in starting from the properties of language and analysing the other symbolic forms with reference to language. 'As it [linguistics] scientifically brings out the defining characteristics of the natural languages, it is possible to verify whether those same characteristics are or are not valid with regard to the definition of systems of signs other than natural languages - which also makes it possible to begin to classify those systems of signs' (Mounin 1970: 68). That comparison in fact made it possible to obtain negative results but - if the phrase may be permitted - positively negative ones: one possible direction of analysis has been explored to the limit, and characteristics peculiar to each of the two systems have thus been brought to light (Nattiez 1975, Part 2).

How is it that linguistics and language are so privileged? The only possible justification for this would be the more advanced state of linguistic research. But that acknowledged privilege leads to a distortion of phenomena, either because people are looking for languages everywhere or because on the contrary language will be increasingly isolated among symbolic processes. On the one hand analogies are posited everywhere, almost all of them metaphorical and leading nowhere; on the other hand only differences are posited. So the thing to do is to steer comparison in both directions, because that is the only way in which the properties that are genuinely common to two or more symbolic fields may come to light. That would appear to be the result that may henceforth be expected from the study of systems of animal communication and their comparison with

human language. We are increasingly discovering that the resemblances and differences are much more complex than was only recently believed (Hinde 1972).

Developments in musical analysis also promise to be fruitful and to lead to a more precise understanding both of music and of language. We have already referred to the direct relations that exist between these two domains in certain cultures. We shall select only two examples of the fresh problems that have arisen out of precise comparison of the two domains. The first is a typical problem of one stage in comparative semiology: is there or is there not double articulation (in Martinet's sense) in music? If by that is meant the same organisation on two levels as in language, the answer is certainly no (Nattiez 1975, Part 2, Chapter 11, § 3). However, the question may be reformulated, taking account of two types of data. In the first place, is the distinction between the two articulations suggested by Hjelmslev and Martinet adequate to describe linguistic organisation? It is probably more accurate to follow Granger in speaking of language as a multiple-articulation symbolic system (Granger 1971: 79). Moreover, are there not several levels to be distinguished in a musical work, whether what is addressed is a traditional-style hierarchy - phrase, subject and motif - or the levels of a 'distributional' analysis – Ruwet's units of levels I, II and III? So there are units of different levels, constituted on the basis of units of a strictly inferior level. But if analysis in levels is an entirely relative approximation (cf. the analysis of *Syrinx* in Nattiez 1975, Part 3, Chapter 5), nevertheless the differential properties of the two organisations are complex and merit thorough study.

The second problem is that of 'mixed' or transitional forms between music and language. It would be appropriate first of all to draw up a list of these and to suggest a typology for them. The use of musical sounds as a system of communication instead of or in addition to language (whistled or drum languages); song in all its forms from singing exercises to opera and melody; epic or lyric diction; prayers, incantations, etc.; the existence of prosodic or supra-segmental features (tones, accents, intonation, rhythms) in language – all these things make encounters between the two domains obligatory. Those encounters may produce incompatibilities, exclusions or fusions. The key lies in the meticulous description of the encounters and of the borderline phenomena to which they give rise. The problem of the encounters between music and language would thus be based on less abstract, less metaphysical considerations. Anthropological description is more effective than philosophy. There are more things in this earth than in all of semiology. Musical analysis and semiological analysis are neverending.

CONCLUSION

If music is a symbolic fact, if musical analysis has a rightful place in the framework of methods capable of accounting for symbolic operations and products, perhaps it may be permissible to speak of a semiology of music. Mauss saw the symbol as belonging to sociology: 'For the notion of symbol is entirely ours - is it not? - stemming from religion and law. Durkheim and ourselves have been teaching for a long time that communion and communication among men are possible only through permanent common symbols, external to individual mental states that are quite simply successive, through group signs of states that are then taken for realities.... For a long time we have thought that one of the characteristics of the social fact was precisely its symbolic aspect. In most collective representations, what you have is not a single representation of a single thing but a representation chosen arbitrarily, or more or less arbitrarily, to signify others and to control practices' (Mauss 1950: 294-5). The evolution of linguistics has shown the limits of that kind of sociological reductionism. If there is a sociology of language, there is also an independent linguistics without which the sociology of language could not be constituted; or rather, the sociology of language carves out part of the field of linguistics, which loses none of its autonomy as a result. The same could be said of all '-ologies' of language, and the situation is identical as regards religion or music. Symbolism belongs to no one - neither to the psychologist, nor to the sociologist, nor to the psychoanalyst, nor to the anthropologist, nor to the historian of the sciences.

By that we do not mean to say that symbolism belongs to the semiologist as the latest incarnation of the prophet of totality. Quite the contrary, because there is no such thing as a general semiology, if by that we understand the kind of global science that would account for symbolic facts as a whole. The (provisional) project for a semiology can only consist in the recognition, here and now, of the proper consistency and specificity of symbolics – based at least in part on the triple dimension of its existence: poietic, neutral and esthesic. The symbol, 'origin and basis of human behavior' (White 1969: 22) is the starting-point of the science of man.

Semiology – if it exists – threatens no one and embodies neither the socalled 'one-dimensional' rationalism of the structuralists nor the muddled pathos of the pseudo-linguists tinged with psychoanalysis and/or Marxism. It simply seeks, by drawing on all the resources offered to it by all the disciplines dealing seriously with the symbolic, to carry through analysis. Music, being simultaneously so like and so unlike language, can only help us all the more to understand it and other symbolic practices. But the ultimate goal of the semiology of music is of course to understand – that is to say, to know about music. Which has never stopped anyone making it, listening to it or loving it.³

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Rather than repeat the usual 'If I were writing this article today I should certainly not do so in the same way', I can perhaps more usefully cast a glance both backwards and forwards. Where did the semiology of music come from? What has happened to it in fifteen years? Where is it going?

Where did it come from? Jean-Jacques Nattiez, the man who must take all the credit for having built it up, published his *Fondements d'une sémiologie de la musique* (Foundations of a Semiology of Music: Nattiez 1975) at a time when he found himself at the confluence of three currents. Firstly, he had a passion for music and for Wagner, which predestined him to pay particular attention to the relations between language and music. Secondly, having from a very early stage taken an interest in the findings of linguistic structuralism, he then came across the semiology of G. Mounin and the distributional and paradigmatic methods that Ruwet applied to the analysis of monodies (cf. Ruwet 1972b). Finally, chance directed his attention to an emergent general semiology that I was then beginning to outline in Aix-en-Provence.

Adopting a wider perspective and a change of scale, we can say that the semiology of music as conceived by Jean-Jacques Nattiez was a response to the challenges of the time, and that is the state I set out to describe in 1975. There was the state of music, where explosions and ruptures both internal and external were calling for the creation of a general framework of thinking that would make it possible to integrate the scattered fragments of music – practices, theories and analyses. There was the state of epistemology, where the examples of linguistic structuralism and generativism suggested basing the traditional problems of analysis – explicitness, distinction of levels and of variables – on fresh principles. And finally there was the state of musical analysis in France, where it was a private, marginal discipline with no well-established tradition, often confining itself to trite reflections on the organisation of sonata form, on modulations and on one or two striking links.

The semiology of music was thus gradually worked out to culminate in the 1975 book, which brought the theory into the public domain, as it were, and placed it before the community of specialists. Quite properly, it was criticised, praised and defended; it stood the test, gained a place in the sun, became established and has developed, benefiting as always as much from criticism as from eulogy.

What, then, has become of these ideas for whose birth I bear a share of the responsibility? It seems to me that, debates and modifications notwithstanding, a certain number of points have become established. The notion of 'tripartition' has, I feel, proved its validity and its fruitfulness. From an intuitive point of view, it corresponds well to distinct and complementary aspects of the 'total musical fact'.

What about the neutral level, which has caused so much ink to flow and

provoked so much discussion? I repeat: the idea is intuitively clear. As far as Western music as we see it from the sixteenth to the nineteenth centuries is concerned, there are scores, a composer and an audience. More generally, music appears as an object – a succession of acoustic events – that can be more or less arbitrarily separated from the person producing it and the person listening to it. But the tripartition schema has only an overall validity – there is no Aristotelian concept defined absolutely by type and specific difference – and has to be specified each time according to the specific case. To use a notion that is gradually gaining acceptance, the *prototype* of tripartition is the case first mentioned, the one that corresponds most closely to our experience as people of the twentieth century: we buy, we analyse scores in the manner of Dubois, Schenker, Meyer, Forte, Lerdahl; we wonder how Boulez composes his works; and we listen to Bach, Mozart or Berio.

The legitimacy of the neutral level also comes out when we compare it with the other two constituents of the tripartition, and the very evolution of analysis and of 'analytical modes' bears witness to it. Nowadays all the talk is of cognitive sciences in music. What does this change of paradigm signify? It corresponds to the shift we see at work in the human sciences – linguistics, anthropology and now music: having been interested in structures, in the configurations present in text, speech and score, we are realising that those configurations are not necessarily relevant as regards the listener or the composer and are beginning to look towards strategies of production and perception. What better confirmation could there be of the importance and reality of tripartition and of the dialectic between the study of the three dimensions of the musical fact?

One question springs to mind fairly naturally today as it did fifteen years ago: what is the *status* of the semiology of music in relation to the models of analysis? If we accept that the two major models in use today are Schenker's model and Forte's 'set analysis' (cf. Dunsby and Whittall 1988), what is the place of musical semiology? I believe it presents itself as a theoretical framework within which the models can be located, understood, evaluated and modified. What the Germans call Systematische Musikwissenschaft (cf. Dahlhaus and de la Motte-Haber 1982) and what I. Chailley calls *philologie musicale* (cf. Chailley 1985) are exactly what the semiology of music seeks to offer: a theory and principles making possible a coherent placing of the various musical disciplines in the form of an authentic 'general musicology' (cf. Nattiez 1987). It is in this framework that the contrasting and complementary orientations of knowledge and practice come together in a well-founded manner: production and listening, internal study and external study, synchrony and diachrony, and so on. Let me take just one example illustrating the necessity for that framework. Models of analysis evolve, give way to one another, are forgotten... Must we then settle into a history 'full of sound and fury', constantly punctuated by revolutions and changes of paradigm or

characterised at any given moment by the clash of irreconcilable paradigms? I believe that Jean-Jacques Nattiez's musical semiology, which does not claim to have all the answers, is the one most likely to ask the right questions. And first and foremost the question of the status of analysis and of the analyst, as it appears clearly with the aid of the notion of *analytical situation* (cf. Nattiez 1987: 171ff.), but also that of the scope of each paradigm thanks in particular to the *comparison of analyses*. This is the only way in which the past (history of analysis), the present (coexistence of paradigms) and no doubt the future take on coherent meaning.

So, to recall Wagner, how will the semiology and the analysis of the future present themselves? No one knows, of course. Among a host of problems pending, I see one wide open workplace: that of the interface and reconciliation of analysis, history and anthropology. That interface has always tended to be coloured by reductionism, with social context as origin of the musical. Here again musical semiology has something to say: there is an urgent need to bring together within a single framework both ethnomusicology and the analysis of Western musics and, among the latter, Gregorian chant as well as the polyphonies of the ars nova. Homo musicus (cf. Blacking 1973) has existed for the '40,000 years' (Chailley 1976) that human beings have played and sung. In 1975 I argued for a theory of music simultaneously systematic, historical and anthropological, and capable of integrating music with its context and with the variables and constants of its evolution. For this task, I still believe that a semiology of symbolic forms applied to music is the most powerful force (cf. Nattiez 1987; Molino 1988, 1989, 1990 and in preparation). Music is a symbolic product, and analysis is inseparable from the 'total social fact', a musical *experience* that is the alpha and omega of practice and theory.

NOTES

- 1. I use the word 'commutation' here in a broad sense. But it is appropriate to point out that, contrary to appearances, commutation in linguistics is not a clearly defined operation. In phonology and morphosyntax it is not the same operation that is involved, and it is virtually impossible to give a strict definition of it. So it is legitimate to extend the term, and the use of commutation in music ought to give us a better understanding of its value and function.
- 2. The same objection may be made against stratificational theories of language (cf. Lockwood 1972).
- 3. I should like to take this opportunity to thank Jean-Jacques Nattiez, who agreed to read and annotate the first draft of this article. I benefited greatly from his observations, as I did from our long conversations on the subjects of semiology and music.

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