François Delalande (*)

La terrasse des audiences du clair de lune
An Essay in Esthesic Analysis

I - METHOD

Esthesic analysis

An infinite number of individual points can be noted in a score or sound object under study. For example, it is easy to construct a histogram of the number of G#s per bar, or the notes whose tait is turned downwards. If this is not done, it is because it is supposed that there is not much to be gained from it for the clarification of compositional thought processes or for the aesthetic pleasure of the listener. Each analysis is based on a selection of features depending on relevance, itself defined by a point of view.

We shall not return here to the reasons why we link the notion of point of view (and thus relevance) to that of behaviour (1). Music is considered a set of production and reception behaviour patterns which centre on an object. The object and behaviour patterns are defined together. This proposition is obvious in the case of production : the composer controls his behaviour towards the object being created at the same time as he gives form to the object. There is reciprocal adaptation. It is presumed that listening 'conforms' to the music, but what is less obvious is that in return it 'composes' the object in its own fashion, and it is the object of esthesic analysis and of this article in particular to show precisely that. The features and configurations which are necessary for the analyst to account for the behaviour of the listener (the producer in poietic analysis), whether he is aware of them or not, will be considered relevant.
More generally, the cross-referencing between objects and behaviour determine each other. This seems to trace the programme of analysis on the one hand, and the psychology of music on the other.

TERMINOLOGICAL NOTES

Object

The analysis can be of two types of material object: the score and the sound object (here the recording presented for listening purposes). Each gives rise to production and reception behaviour, namely composition and reading in the first case, instrumental performance and listening in the second.

Reception

The concept of 'reception' is distinct from 'perception' ; it is at the same time wider and narrower. Wider because reception can include psychomotor and physiological aspects ; dancing and trance are reception practices. Narrower, because perception is not proper to reception : the composer also perceives his music. Production and reception correspond to two distinct observable practives, one where one creates, and another where one receives.

Esthesic

Following MOLINO's terminology, the adjectives poietic and esthesic refer respectively to production and reception.

Behaviour pattern

Both production and reception are behaviour patterns in the sense that all the elementary acts they bring into play are coordinated by an objective. The notions of coordination and objective are obvious in musical behaviour. In instrumental performance for example, not only are motor functions, from the fingers to the eyebrows, taking in the shoulders and breathing, manifestly coordinated, but also thought, concentration, and affective attitude, as if polarized by this objective which is to create this particular sound object. The analysis of attentive listening shows that it too corresponds to an objective and brings into play strategies, physiological alterations, affective attitudes and finally emotions which are largely dependant on what the listener expects from this act of listening.
The terms of behaviour, strategy or process, are sometimes employed as alternatives for, but appear as particular aspects of a 'behaviour pattern'.

Real behaviour/behaviour types

The "real" listening of a given listener in given circumstances is highly personal and variable. Thus it would seem impossible to analyse listening without finding a means of reducing this diversity. One solution, often implicitly adopted, is to assume an ideal listener or an average listener, which is incompatible with the diversity observed in individual listening. The model used here is that of "behaviour types". Given a set of real hearings, in pratice constituted by a corpus of informant's statements, an attempt is made to link it to a set of behaviour types such that each real hearing can be considered a combination of these behaviour types. It will be noted that these do not need to be frequent to be types. They are the axes of an algebraic space, chosen by the analyst to allow the description of diversity. The

choice is valid if it is possible to conclude for such and such a listener he first carries out listening A, then B after so many seconds, then a combination of B and C, etc.

This abstract definition makes behaviour types an analytical device and does not imply that they have any psychological reality. It would seem however, that they do have some, at least in certain cases. Listening has its own logic. The listener who gives himself the objective of remembering the work he is listening to as well as possible, tries to divide it into sections on the basis of fairly summary morphological or semantic categories, which as far as he is concerned are only labels, practices internal verbalization, creates a sort of mental score, and in doing so, does not have the time to indulge in the contemplation of a detail of sonority which draws his concentration in another direction, and would make him forget the form. The study of incompatibilities, sometimes pointed out by our listeners themselves, brings out certain listening types as coherent exclusive organizations, within which the strategy adopted, the type of metaphorization, and of perceptive focusing, and the scale of segmentation, form a whole organised according to an objective. A listening type is then a behaviour pattern in the psychological sense of the term.

Procedure

Theoretically, the programme of esthesic analysis should take place in four stages :

a) listening experiments leading to a corpus of listeners' statements (or, more generally, observation, by some means, of a set of real reception behaviour patterns).

b) Analysis of the statements (or of the real behaviour) with the objective of isolating, by cross-checking, the listening types which account for the corpus as a whole, and which will be taken as points of view for analysis, and thus as layers of relevance for each point of view type, to determine which morphological features have been considered by the listeners.

c) Analysis of the piece according to each of the layers of relevance determined. The preceding stage will have provided fragments of analysis, features, local configurations, which will have to be extended to the piece as a whole according to the logic of the point of view considered. It is a reconstitution of the object as it would have "functioned" for a listener who had systematically adopted a behaviour type, that is to say, not only the features and configurations he has perceived, but also those which had influenced his behaviour, perhaps without him being aware of it. It is necessarilly an elaboration by the analyst with the object of modelling subject/object adaptation which has the epistemological value of a theory.

d) To be rigorous, it demands one or several verifications (which are never proofs) consisting in predicting and verifying certain consequences of the model concerning perception or the various replies of a subject with whom it has been possible to induce the behaviour under consideration.

> For the essay which follows, it has been necessary to temper our ambitions to the time available. The objective has simply been to show how, from a corpus of informants' statements, it is possible to isolate

behaviour types and layers of relevance which constitute so many 'entry points' into the analysis. The analyses themselves are scarcely more than a fairly safe extrapolation of the descriptions obtained, and

do not warrant verification. What is verified, and this is the important result, is that each point of view cuts the object up in a different way.

In practice, the programme, carried out with the collaboration of Jean-Christophe THOMAS, comprised only three stages.

a) Nine informants listened individually to *La terrasse des audiences du clair de lune* by Debussy, (recorded by Cécile OUSSET) (2). All are professional musicians in different fields, claim to like Debussy, but are not specialists (none are professional pianists).

Each session took place (in a soundproof audition room, with good quality material, at a fixed volume) according to the following plan :
1. listening to a different prelude (the preceding one in the second book) simply to accustom the subject to the sonority of the piano, the speakers and the room.

2. first hearing, after a brief silence, of the prelude on which the study was based (the title was given only after the session, the subject did not have access to the score).

3. interview on the first hearing (10 to 15 min.)

4. second hearing

5. second interview

6. third hearing, during which the listener was invited to stop the record when he wanted, to comment as it was in progress, or to situate in the work observations made in the preceding interviews.

The instructions were to listen attentively but without making any special effort to analyse or memorize (given that the third hearing allows for the inclusion of forgotten points), keeping as close as possible to the conditions of private listening. The interviews, which were free, were introduced by open questions about what had interested, struck or touched the listener.

b) The statements thus recorded and transcribed were first analysed separately, attempting to distinguish for each listener whether he had different orientations depending on the moment or the hearing ; conflicts if any. Afterwards the statements thus reduced to simpler and more homogeneous components were compared to see whether they could be considered listening types supplying an analytical point of view.

It is obvious that this textual analysis includes an element of interpretation which is open to criticism. It can only be claimed that it was to some extent confirmed by the work of two team members (J.C. Thomas and the author) which was the occasion of a fruitful dialectic which is known to be a source of rigour.
c) The features and configurations noted separately for each point of view thus isolated were then grouped and to some extent extrapolated to provide a starting point for the analysis of the piece.

Limitations

The approximations due to verbalization and the analysis of the statements are only too evident. A report after listening is a reconstitution in which parasitic factors like forgetting and the image which the listener wishes to give of himself intrude. It can be hoped that for certain psychological aspects of real listening, non-verbal means of observation, like the electropolygraph, can be used, but this would give no information about the symbolic dimension of listening. However, it is necessary to compare these reservations to the object of this stage of the research which is to construct an analysis with the status of a theory. It is rather at the stage of verification that it is realistic, and sufficient, to use non-verbal methods.

Other limitations to the scope of the conclusions that can be drawn are linked to the listening conditions, the group of subjects and the work.

Listening conditions. Hearing a piece three times with a view to talking about it obviously constitues a special situation, just as any situation would be. However, it is assumed that it is related to other attentive listening conditions to which the observations could be extended. It is to be noted that the professional musicians with whom we are dealing are scarcely disturbed or inhibited at all by this exercise with which they are familiar. All the same, attentive listening is only one of the reception conditions.

Group of subjects. Strictly the analysis is valid only for the corpus of nine informant's statements collected. In estimating the risk of extrapolating the conclusions, two factors have to be distinguished, the number of listeners and their characteristics. A previous experiment, using electronic music, convinced us that for a highly homogeneous group like this one, the number of behaviour types necessary to account for real listening is not raised significantly by increasing the number of subjects from seven (as in this case) to twenty five. This number seems to tend rapidly towards a limit.

The characteristics of the subjects on the other hand are a limiting choice. Listeners who were less musical would doubtlessly use different listening techniques.

The work. A priori, the behaviour types which appear are related to the piece under consideration. However, comparison with the previous experiment, mentioned above, suggests that certain listening logics, such as 'taxonomic' listening or 'figurativization' could be generalized to some extent. But that is a different study.

II - FROM BEHAVIOUR TO OBJECT

1. Taxonomie listening

Behaviour pattern

The type of listening to which this name is given corresponds to the listener's wish to give himself a synoptic image of the piece to understand it as a whole. He tries to get away from word for word concrete detail and to isolate an abstract structure or a generating

principle within which the intelligence can find an order. His goal, besides intellectual satisfaction, is to reduce the information so as to memorize the whole of the piece (3).

Confronted with *La terrasse,* this behaviour ends with a feeling of difficulty, or even failure, and dissatisfaction ;

> *- At the beginning, you don' t know where it's going.*
> *I said to myself: I'll find out eventually. I don' t*
> *know if I did or not (listener F).*
> *- For me this music is difficult to memorize, it is com-*
> *plex and very intricate (A).*

The listener is reduced to word for word listening

> *– You are forced to follow word for word. You have*
> *hardly any idea of what's going to come (F).*

The construction of the object

The first observation which the listener looking for a synoptic image notes is the construction by juxtaposed 'sequences', each one constituting a "theme" or an "idea":

> *– I hear juxtapositions of tiny sequences (...). You*
> *change subject all the time*
> *– It's rather (...) moments which follow each other (C).*

Sometimes the absence of formal marks which usually contribute to the organization of a work is also noted :

> *– You have the feeling of not having heard*
> *the beginning, of a false start. But the*
> *second element arrives without being*
> *marked by any punctuation (F).*
> *– There's no beginning (H).*

The piece is thus assimilated to a fantasia or an improvisation, which, since no internal order is found, is a way of situating it in a typological order :

> *– There's a bit of the fantasia about this piece. The*
> *thematic material is not exhausted (F).*

Although frustrated in their search for a perceptible organization, our "taxonomic" listeners (all Debussy lovers) do not judge the piece negatively. They perceive a unity and guess at the presence of a cohesive factor which defies listening :

> *– Why does this music hold together ? It can' t be ana-*
> *lysed rigorously. It's more a case of the magic of*
> *the music (F).*

Two hypotheses are put forward to explain the paradox which is central to this point of view and which can be summarized like this : 'it's disconnected but coherent'. One of them is that the interpretation constitutes a link. But since our subjects are intelligent and educated, they make use of analytical buzz words like 'duplication', 'response', 'oscillation', and various formulae according to which a morphological element once stated is taken up later in a variant form, thus bringing the memory into play.

First analytical possibility
An analysis attempting to systematize the construction which taxonomie listening of *La Terrasse* creates should explain two perceptible facts observed in this type of listening

a) the strict division into disconnected units (the scale of which has been supplied by the informant listeners) ;
 b) the feeling of overall coherence.
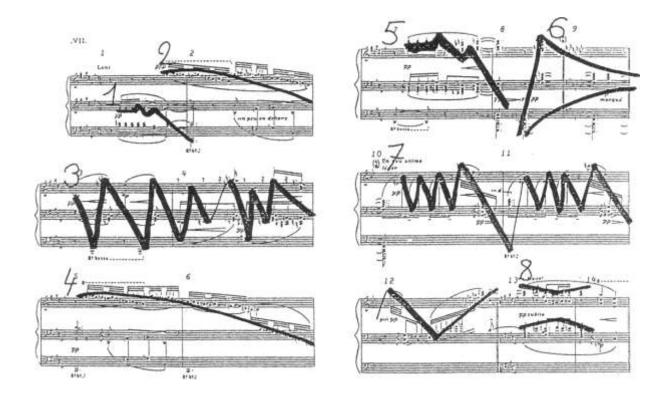

a) Division into disconnected units

The prelude juxtaposes, usually in simple succession (with some slight overlapping), morphological figures which are particularly well-formed and contrasted.

Figure 1 . Slight oscillation, whose amplitude grows as the movement slows (4) ; The formula ends with a fall (closing law).

Figure 2 . Downward curve rhythmically and melodically as 'smooth" as possible (continuity law). Note the contrast : the first figure is all chords, this one is purely melodic.

Figure 3 . Wide oscillation between low and high (between the two hands), whose amplitude diminishes, in this case, as the movement quickens. Contrast : just as the preceding figure was smooth and arrhythmic, this one has a saw tooth shape and rhythm.
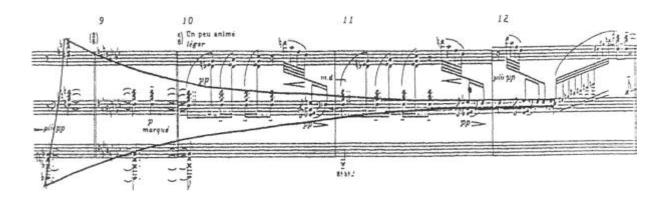
Figures 4 and *5* . Same morphology as 1 and 2 amplified, and same contrasts.

Figure 6 . Figure of natural resonance : the harmonics of ranks 1 to 4 appear first (in their disposition in the spectrum), the third intervenes only afterwards : the high frequencies disappear first (this law of harmonic appearance and disappearance is characteristic of percussion resonance). It is a single sound which spreads through the spectrum and through time. A static zone which cuts off the preceding oscillation and leads to an agitated figure.

Figure 7 . The same morphological principle of oscillation is used throughout this figure, even if the ploy of repetition divides it into three 'mini-figures". The first and its double are oscillations whose amplitude grows until the wide high/low sweep, which is an arpeggio : the third, V-shaped, is the paroxysm of the oscillation.

Figure 8 . This contrary chromatic movement is again a simple form. The upper line also forms a V, but a tiny V compared with the previous one.

The long central sequence (bars 16 to 24) has a figure well-formedness which is less immediately obvious because of its length (it is not a formed object in SCHAEFFER's sense), although the melodic line presents a highly marked morphological character : it is an oscillation whose amplitude grows steadily as the length of the arc diminishes. The melody advances with zero (repeated note) or chromatic intervals for three bars, then come intervals which are gradually wider and more varied, the repeated notes disappearing in the middle of bar 20. At the same time the length of the waves tightens from a bar-long initial V to quaver oscillation at the end of the sequence.

Example 1

Example 2

What follows, where writing in more highly formed figures returns, will not be gone into in detail, although the contrasts (in the sense of psychology of form, not of impressionist metaphor) are less sharp than at the beginning.

It is astonishing to discover the extent to which this prelude uses the perceptive laws of pregnancy and division : the laws of continuity, closing and contrast.

b) Overall coherence

Study of the internal play with duplications, responses, and melodic and harmonic variants is the delight of Debussy specialists. For this reason it will not be attempted here, but it is doubtlessly one of the keys to this paradoxical coherence which has been noted.
Two other factors of homogeneity can be pointed out, but they do not stem from the structural logic of taxonomic listening:
 1. the association of "ideas", one after the other, which listening with "practitioners" tendencies looks for, and which will be examined below (in 4).
 2. performance which will be mentioned in relation to 'pianistic listening' (in 4).

2. Figurativization

Behaviour pattern

This type of listening depends on a supple movement between different levels of metaphorization. Three will be distinguished in a fairly artificial manner.
At the first level, material metaphor, terms are found which can express the morphological characteristics for which no technical vocabulary exists, like 'space', 'transparency', 'stable', 'moving'. On this level, informants' statements converge.
They converge again at the second level, where the elements are organized into two opposed categories : the living, organic *v.* the inert, mineral. The living becomes a character, the inert a backdrop, and the music a production, theatrical metaphors typical of this type of listening :

> - *A space is outlined, like a box, and the important,*
> *living, organic thing goes on inside. The rest is ve-*
> *getable or mineral (D).*
> - *A regulated architectural space, something stable (..)*
> *there have to be creatures at liberty in this sound*
> *space (H).*

An action can thus take place, and at this third level, narrativization, the form is interpreted, with different variants and optionally, as a narrative.

The construction of the object
The narratives are here organized round the idea of approaching and distancing, but more precisely of approaching to see more clearly, for there is something to be discovered :

You approach a point in the image, when there are crescendos, and the painting, instead of being blurred, becomes very clear C..) and then you step further away again (E).
– You enter bit by bit into the crux of *the subject (like a film-camera advancing through successive rows of trees up to a charming palace in the films of Watt Disney): and the end is a gradual distancing (D).*

Without being divided into sections, it is at least possible to distinguish moments where the scene is clear. At one moment the image is 'very modest, very veiled', seen by 'transparency' through 'shimmering water' or 'foliage' :

> – *Like an image seen through water, diffracted in layers (E).*
> – *Very modest, very veiled (...) I thought of 'cloches à travers les feuilles' because of the foliage you pass through (D).*

It will be noted how far this blurred image is from the perception of contrasts in the previous listening type.
The converging metaphors of 'space', 'transparency', 'stable' and 'moving' will be retained for the analysis, and more precisely a stable element seen by transparency through some moving substance. The metaphorical construction represents a formal organization of the object.

Then 'a voice' appears, or 'a strange dance, neither oriental nor western', or a "ritual" (moreover, it's of no importance : "the palace and the ritual are the same thing. It's a fairy story, a brave new world : a universe of order' (D)), again perceived "through....
It is seen at last, before moving off.

Second analytical possibility

'Space' : recurrent dimension of figurativization. It's the space which becomes a stage. What are the relevant features which describe this space ?
First the range of the piano. The three registers are presented one after the other in the first five seconds : medium, very high, very low. Then 'presence', an overall descriptive feature, which itself depends on several pianistic parameters, intensity (p/f), articulation (stacc/leg), resonance (pedal), or writing parameters, use of registers, but which is defined by its own distinctive value. This enables 'planes of presence' to be distinguished, and will be better understood by the use which is made of it in the 'transparency' effect (since it's true that only a 'top down' definition of the relevant features can be given).

' Transparency'. Bars 3 and 4 are an example of a configuration in which 'a stable element' is seen by transparency through a moving substance' ; 'the stable element is represented by the chord E#-G#-B-C#, repeated five times, regularly on the beat, and the 'moving element' by the harmonic and rhythmic embroidery which surrounds it (the inert/living opposition is very clear here). The 'stable' is in the background, since it is played less loudly (pp) than the rest (this is

obvious for these two bars, in the recording used). Moreover it is located 'through' the sound space, that's to say in the medium range between the extremes.

An analogous configuration is found in bars 10 and 11 where the pedal chord F-Bb-D-F plays the part of the 'stable' element. The separation of the planes of presence is here realized through the staccato right-hand chords.

The 'transparency` of these two first pages is ensured in the other passages by the 'resonance' feature : cf. bars 1 and 2, and especially 5 and 6 ("he sets up a chord and makes that contraption tumble into the resonance of the chord") and 8 and 9.

Note how the division into 'planes of presence' is different from that into "morphological figures" in the preceding listening type (cf. example 1). In taxonomic listening, the extended resonance of figure 6 contrasts fundamentally with the agitated rhythm of 7. This time, in contrast, the Bb chord appears in bar 8, and continues in the background until bar 12 (where only the F remains), masked only for brief moments by chords in the key of G. It seems to be uninterrupted due to the effect of the staccato in the right hand.

The whole passage (at least in the version used here) has to be listened to using two attitudes one after the other, to understand to what extent the orientations of different types of listening organize the object differently (5).

'Approach'. The form is not divided into sections, but is seen as a continuous development of "approaching" and "distancing". The allegory of the movement of a film-camera which approaches a palace through foliage will be used as an analytical point of view. The formal configurations metaphorized by "gradual unveiling" and "zoom-effect" will need to be discovered.

'Unveiling' assumes that the *same* element passes gradually from the background to the foreground of presence. It is first the 'stable element' seen twice by 'transparency' in the examples analyzed above (bars 3-4 and 10-11). Then it is the 'strange dance, neither oriental nor western - of bars 16 to 27, it is finally the 'palace' or the 'groups of voices' of bars 29 and 31 : 'the palace and the ritual are the same thing, it's a fairy story... a universe of order'.

Seen intermittently in the first two pages, this "same thing" is then gradually revealed by the relevant play of planes of presence. It is seen again by 'transparency', 'through' the pedal chord C#-B-G#-C#-C# which covers all the registers (bars 16 to 18), and only passes into the foreground in 19 (upper register) and more clearly still in 25 (the two extreme registers): the interior has become exterior while on the other hand the setting has passed to the centre. (Note that in 19 the double high C#, hitherto 'inert", comes to life and takes up the theme. Metamorphosis of inert to living : metaphor of the fairy).

The *"zoom-effect"* is realized by the parallel development of several morphological features (lengthening, crescendo, and increase in rythmic dynamism, form part of it), of which, in the case of "zoom-effect', the variables of 'space', and thus occupation of the instrumental range, will be retained. The zoom-effect, already foreshadowed in the first two pages, becomes continuous in bars 16 to 27 and is related to three features

1. the amplitude of the oscillation of the melodic line from unison to a fifth (cf. 1st analytical possibility).

2. thickening of the melodic line, first with octaves, to which sixths are added then a fourth and bass doubling.

3. general widening of the musical range by an octave upwards and another downwards (the 'zoom-effect' is completely different to a simple crescendo).

It will have been noticed that unlike the previous listening type, derouted by division into sections, this one sees the form as a continuous progression (tracking forwards and backwards) and discovers a thread which runs through the whole work : the different listening types construct the object differently...

Note on interpretation

Although the material collected here is insufficient to draw statistical conclusions, it can be predicted, and this is obvious with our informant listeners, that the perception of planes of presence linked to figurativization gives greater satisfaction to a listener than division into contrasted morphological figures, even if it is only because it gives an order and a logic to the whole, which is absent in the other case. Without having yet envisaged other points of view, it can be supposed that the performer would be more astute to conceive the piece as a 'mixing' playing on the balance of planes, rather than as 'editing' underlining the breaks. From this point of view, the inversion of the figure and the background, which occurs in 19, is a strategic moment. The 'living' element, which is the "ritual dance" should be thought in the background from 16 to 18 behind the 'inert' grid (C#-B-C#-C#-C#). One can even wonder whether the indication pp written between the two phrase marks (16) don't apply particularly to this melody.

3. **Empathic listening to the material**

Behaviour pattern

Here, the listener practices a sort of contemplative reverie, in which there is no effort of memorization. He thus listens step by step, for the present moment, and sees the morphological material as a play of forces, tensions. But he experiences these forces himself, by empathy, rather than simply describing them as features of the object. For example, here, where the theme of weight appears recurrently in our statements, he will not say : 'the material is drawn downwards' but 'I feel a certain heaviness'. It is this subject/objet confusion, marking the abandonment of distantiation, a way of giving oneself over, as if to let oneself be carried along by the music, which is characteristic of this behaviour.

> – *I continually see myself in a situation where I'm going to escape from a certain heaviness, but I'm brought back to it. However, it doesn't' t hold me down: it's only the opposite of weightlessness (B).*

> – *The work of composition consists in expressing this feeling of heaviness (..) There is really a physical feeling of fluidity and downward movement (J).*

The construction of the object

The feeling of weight is given at the beginning:
> *- I was aware of it right at the beginning, with these
> bright shining spots, which go downwards (...) If you
> lay it out flat (that 's to say without any order)
> there is that which rises forcibly, and that which
> goes down graciously, that which stabilizes, and some
> free spurts (J).*

It is easy to situate what "rises forcibly" (bars 16 to 24) :

> *- This theme didn't' t seem to me, at the previous hearing,
> to suggest such a tiring walk (...) something phy-
> sical, experienced physically (...) - towards a peak
> which is a relief (E).*

It is for us to isolate the morphological features which determine these
sensations and the particular form they give to the object.

Third analytical possibility

Up/down directionality is obviously relevant here. But it is put into
practice in precise configurations.

Lengthening. The prototype is the group of the first five chords (bar 1)
: a) an 'attracting pole' is first confirmed by repetition ; b) the melodic
line then moves away by a related melodic movement ; c) to finally
return. All the lengthenings are constructed on this model.
Upper lengthenings are found, bars 1, 7, 10 (the attracting pole, Bb
chord, central stave, is established in bars 8 and 9) 11, and lower
lengthenings in bars 13 (attracting pole established at the end of 12),
16+17, etc.

Fall. This assumes a low attracting pole confirmed by repetition which
various mainly descending melodic motifs are going to join. The first
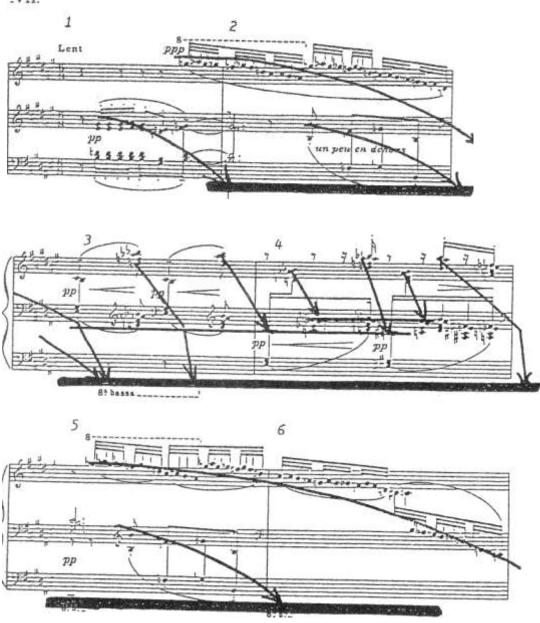page has six falls to a deep bass C#.

Staircase. This is the doubling or tripling of a melodic formula with
upward transposition of one or two degrees.
The identity of the formula before and after transposition can be
approximate as long as it remains clearly recognizable. The melody in
octaves of bars 16 and 17 is thus repeated at a higher step in 18 and
19. Similarly, the formula (right hand) of 21 is imitated higher through
22 then 23 ; note also the double staircase in 24 (begun in 23).

The role of 'attracting poles' (repeated notes or chords on which falls
and lengtenings pivot) has been noted. Notice also the role of 'brakes'
played by chromatic intervals in the rising or falling movements which
slow the 'falls' (bars 2, 5 and 6; last two chords of 4) or the climbing
of stairs (16 to 19).

These three configurations give rise to the form (from the point of
view which interests us) from the beginning to the end of 24.

The first eleven bars are directed downwards, the last twelve (of this
part) upwards after the changeover which takes place in 12.

Example 3

The low polarity is very strong up to 6. The use of double falls is to be noted : parallel falls in 1 and 2 (both hands describe the falls), falls in sequence, then intertwined (in 3 and 4) towards two attracting poles, the bass C# (main pole) and the medium chord on the beats (secondary pole), first used separately then simultaneously (beginning of 5). (A third pole is distinguished in bar 4).

The main polarity is suspended in 7 ('broken' fall, by analogy with a broken cadence, of the chromatic descent which does not end on the attracting pole and temporary repeat in 8. In 10 and 11 the alternation of lengthenings (augmented) and falls is noted.

In 12 the polarity passes at a high level (doubled chord D#-D# which permits lower lengthening 13), although only slightly confirmed at the beginning : bars 14 and 15 are a 'free spurt'. The linked lower lengthenings round G#, then A#, then C# (16 to 19) can be heard in reverse at certain moments (for example the upper lengthening on Fx at the end of 17).

It is the staircase configuration which dominates, going from the theme (16 to 19) to the accompaniment (20) to return to the main melody until 24.

What follows (which will not be gone into in detail here) comprises a landing before a second staircase (28+29, 30+31), then configurations already seen, often "broken".

Here only the up/down directionality has been examined and it is supposed (before verification) that it goes towards the feeling of weight. This sensation vocabulary still has to be refined by making precise the way in which the descent is 'gracious' and the climb made 'forcibly'. Perhaps a harmonic relevance will be discovered linked to the directionality, as is suggested by the enharmonic changeover which accompanies the directional changeover in the middle of 12 and the sudden relaxation in 24 at the end of the 'difficult climb'. But enough is known to confirm, once more, that another point of view gives yet another form to the 'same' object.

4. Complementary points of view

The 'practitioner' component

> *- This progression indicates a strange thought. I am interested in the effect it has on me, but also in the idea of this effect. The interest of the music rests on this double satisfaction (H).*

When production is contrasted with reception at the level of practice, the interference which exists at the level of the imagination is neutralized : in fact, the producer, whether composer or performer, puts himself in the listener's place, to predict and direct his behaviour ('rhetorical' component of poïetic behaviour), just as the listener puts himself in the producer's place, assuming what it is : this is what we call the 'practitioner' orientation of reception (6).

Is it possible to speak of 'practitioner listening' as a behaviour type linked to an objective, a specific strategy and a resulting organization

of the object ? It would seem not. The 'practitioner' point of view seems compatible with any other point of view, which it colours differently. It does not lead to a division of the object which would be proper to it, but only to additional appreciation. For example we shall again take the division implied by taxonomic listening and see how a practitioner point of view reinterprets it as an association of ideas and thus as the path followed by the composer's imagination.

It would be wrong to see here an attempt at poietic analysis seeking to reconstruct production strategies from traces left on the 'material object'. It is not the material object which is interpreted in poietic terms, but an object organized by reception behaviour, and thus a collection of esthesically relevant configurations : an 'esthesic object'. There are as many 'practitioner' analytical possibilities as there are 'esthesic points of view'. Two will be given corresponding to taxonomic and empathic points of view.

a)In a practitioner perspective, the morphological figures of taxonomic listening become 'ideas', and successions of figures associations of ideas. It must not be forgotten that the music is assimilated to an improvization, which develops from one part to the next, by contact.

We will seek to extend remarks such as :
the aride separation of the hands which gives orchestral force to the piano naturally results in dynamic amplification (bars 25 to 30).

this cescendo aborts and gives rise to this huge very slow rocket (32) ; an effect of a phenomenon which should be rapid slowing down, a sort of crescendo by amplifying the durations. It's more surprizing, more wonderful. It indicates a strange thought (H).

At the same time as a morphological opposition is perceived between two consecutive figures, a conceptual link is established between the amplitude of the musical range and the dynamic amplitude ; between dynamic amplification and the amplification of duration.
It is thus possible to point to some progressions in which the relationship is conceptual rather than perceptible, in the sense that it really is the same "idea" which is present, that is to say the same formal characteristics run through both figures, but they are masked by morphological clothing which is so different in other ways that a practitioner's attention, searching for the path of the imagination, is necessary to go out and find it.
Thus between figures 1 and 2 (cf. example 1). The individuality which marks the first is its upper grace note : it is immediately imitated by figure 2 and serves as the seed for its development.
Then there is the deep bass C#, a dominant pedal, which becomes a dominant chord, just 'animated' by figures 3 to last 2 bars.
Between figures 4 and 5, the duration amplification becomes amplification of the musical range. The huge sweep 4 required that something be reached (anything fairly new, with improvisation in view, to compensate for the high predictability of the fall). It falls on an unexpected lightening of colour ; whence the perfect chords of figure 5. And since the piano has to sound, figure 6 plays on pure resonance.

Figure 7 animates the Bb chord (as 3 did for C#) and the arpeggio figure falling under the fingers ('it's a feature of the piano'), the link between 7 and 8 is established by a V-shaped idea, as has been seen, which from being a capital becomes a small letter.
It can be seen how the practitioner viewpoint can make out (in a rather dubious way) an imaginative thread in the taxonomic

A practitioner dimension added to empathic centering on the feeling of weight reinterprets the object it constructs in a completely different direction. There is no need to find a thread because the units are not separated out. On the contrary, a feeling of fluidity dominates, and the 'it falls graciously' becomes 'it follows naturally' enabling the fluidity of the object to be transferred in the direction of the composer and signaling the ease of the creative act. It is the morphological features of fluidity which now characterize ease and mastery:

> *You don't feel like structuring this sort of music*
> *which advances with no apparent effort, which follows*
> *on naturally. Everything works towards ease. It's the*
> *sort of feeling you have watching a great dancer. You*
> *feel it's a master taking what he's doing wherever he*
> *wants. It's absolutely supple (J).*

Sol-fa Listening

> – Three listening possibilities with too few examples in the corpus to supply further analytical directions, will merely be mentioned here. They are however valuable for understanding the conflicts and choices which intervene in the dynamics of real listening. *There, I looked for what that might evoke for me, but usually when I listen to something I listen mainly to the notes. Is that because of my perfect ear ? I have this awful listening habit, I wish I could get rid of it (D).*

This listener (who indeed gives a mass of tonic sol-fa comments) obviously feels a conflict between the habits of musical dictation which is second nature to him, and the figurativization which he pratices elsewhere.

Melodic listening

> – *If I listen to this beautiful theme three or four*
> *times I will remember it by heart and it will be the*
> *only thing which matters. I would feel like singing,*
> *and that is where my pleasure comes from (E).*

Pianistic listening

> – *I now have an approach to the piece (at the third hea-*
> *ring) as if I were going to work on it at the piano.*
> *There is perhaps one type of listening directed*
> *towards verbal analysis, and another towards the ins-*

trument. Seeing witch elements stand out, feeling the
rise and fall of bodily energy, holding back the em-
phasis for later (G).

Here we discover a facet of the object which does not coincide with those of which the analysis has been sketched.

III - THE COMPOSITION OF LISTENING TYPES IN REAL LISTENING

The plurality of points of view which leads to a plurality of analyses, which themselves make evident the various *forms* which the object takes, has been greatly insisted on. For example, considering only the division into successive sections, the feeling of weight in 'empathic listening' organizes the object round the high/low polarity swing of bar 12, and the relevance of the 'figurativization' planes of presence makes the inversion of the planes in bar 19 the symmetrical centre of the piece, while 'taxonomic' listening establishes frequent cuts (neither of which coincide with the two previous ones).
So what is *the* form of the work ? One reply would be : the work is all that at the same time. Another is : the same material object has several forms depending on the point of view from which it is considered. What should be thought of this plurality, or in operational terms, should the information obtained from different paths be gathered together in a total object, or should they be kept carefully separate ?

The reply should be sought in the definition of relevance. Esthesic analysis has the objective of accounting for the construction which reception operates. The question thus is : does the listener practice the listening types which have been isolated *at the same time,* or are they on the contrary incompatible. If they are, the total object is a 'munster' which corresponds to no real reception behaviour, and has no esthesic relevance.
Or more simply : in the study of the subject/object relationship which is established in listening, it is a less powerful, and less analytical instrument of description than the collection of distinct "esthesic objects".
So, while some elements necessary for a complete certain answer are still lacking, it would already appear that certain listening possibilities are mutually exclusive. This is sufficient to suggest a model of real listening in which two possibilities are allowed for. Either two listening possibilities lead to two different constructions of the object they exclude each other and can only combine in succession or in conflict ; or they are compatible, and they complement each other to produce differentiated replies (the case of the 'practitioner' component).
The exclusive listening patterns which combine in real listening give rise to psychological events which are sudden mobilizations associated with changes of direction and the emotions which determine conflicts and their resolution. But it seems possible to 'date' and even differentiate these events in the chronology of real listening, thanks to the psychological responses they determine (7). The possibility of empirical confirmation of the theory of listening types is glimpsed, and ultimately of a verification of esthesic analysis by the non-verbal means.
The hypothesis of the incompatibility of listening types is extremely

powerful for a psychological theory of reception. It opens up distant possibilities which it is not invalid to evoke;

– The dynamic of direction changes, conflicts and their resolution, which is translated by emotional responses, can supply an element in a psychological theory of aesthetic emotion.

-If it were confirmed that the listening types have a degree of generality, a tool for the study of aesthetic preferences would be at our disposal. Indeed, certain listening types are more appropriate, on the one hand to certain objects, on the other to certain subjects. On the objects side, it has been remarked for example, that when taxonomic listening is applied to *la Terrasse,* it leads to dissatisfaction, because it does not attain its goal which is to give a synoptic image of the object (it would doubtlessly be more satisfying applied to a BACH fugue). On the subject side, it can be expected that certain individual factors, such as personality and culture, create a predisposition to certain types of listening.

Thus the possibility is glimpsed of an overall theory of reception, in the sense of a scientific theory, that is to say a body of related hypotheses which enable the prediction of empirical facts, of which esthesic musical analysis would be one element.

(Traduction David Banks)

REFERENCES

AROM (Simha) - *Polyphonies et polyrythmies instrumentales d'Afrique centrale,* Sélaf, Paris 1985.
DELALANDE (François) - Pertinence et analyse perceptive *in Cahier Recherche/Musique,* n°2, I.N.A.-G.R.M. 1976 (reprinted in *La Revue Musicale* n° 394397), Richard-Masse, Paris, 1986.
DELALANDE (François) - Le bipôle objet/conduites, réflexions sur l'objectif de la sémiologie musicale *in La Culture et ses signes, Etudes littéraires,* Université Laval, Québec, 1989.
DELIEGE (Irène)- La perception des formations élémentaires de la musique in *Analyse Musicale* n° 1, Paris, 1985.
SCHAEFFER (Pierre) - *Traité des objets musicaux,* Seuil. Paris, 1966

NOTES

(1) Cf. Delalande 1976, 1989. There are other ways of defining the notion of relevance, for example by linking it to that of system, as AROM (1985) does. The features which are relevant are those whose combination is governed by the system, whether it is the tonal system of a particular period, or a more precise style, or the rules for the polyrhythmic music or central Africa. This leads to considering features such as tempo, nuance and sonority as irrelevant. This limitation of the field of study would be unacceptable for the esthesis analysis of the sound object. At another level, it can be justifiable to analyse a score from a purely graphic angle. This would widen or go

outside the musical field. The definition of a point of view is a choice, on which depends the definition of relevance, and which expresses the objective set for the analysis.

(2) Ref. EMI, CDC 7476092. We would like to thank the musicians who agreed to undertake these listening experiments. Eugénie Kuffler, Liliane Mazeron, Yann Geslin, Philippe Mion, Christian Zanesi, Denis Dufour, François Bayle, Bernard Parmegiani, Florence Lethurgez, Hugues Vinet.
It would be an understatement to say that this study owes much to them : they have supplied all the "leads" followed up here.

(3) No distinction is made here between two fairly similar strategies which aim to abstract and simplify : 'taxonomic listening' (which divides the piece into sections), and that which we called in a previous study 'the search for a law of organization' (which tends to uncover a generating principle). They both fail here and create the same unease in the listener.

4) The linked variations of the parameters are often considered as factors explaining the pregnancy of the form of the sounds of concrete origin (in contrast to the sounds of synthesizers). For example, in the resonance of a cymbal, the harmonic timbre weakens as (and according to a precise equation) the intensity diminishes.

5) The division into planes is related to that studied by BREGMAN and CAMPBELL under the title of 'division into auditive currents' (dependant on the register) cf. DELIEGE 1985. There is a perceptible conflict here between two laws of grouping (morphological figures/planes of presence) analogous to those which have been studied in the visual field. The role of meaning in the solving of these conflicts has been shown. Here it is more valid to talk about the role of behaviour. If it really is meaning which governs the perceptible organization in 'figurativization', 'taxonomic' listening (which determines the strategy for division into successive figures) is rather induced by a goal : memorizing more easily. Meaning appears as a special dimension of behaviour.

(6) Expression borrowed from SCHAEFFER (1966 ; 120).

(7) An electropolygraph study of the indicators has been undertaken at G.R.M. with Jean-Luc JEZEQUEL