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Listening from Within

Abstract: *This article is devoted to the description of the experience associated with listening to a sound. In the first part, we describe the method we used to gather descriptions of auditory experience and to analyse these descriptions. This work of explicitation and analysis has enabled us to identify a threefold generic structure of this experience, depending on whether the attention of the subject is directed towards (1) the event which is at the source of the sound, (2) the sound in itself, considered independently from its source, (3) the felt sound. In the second part of the article, we describe this structure. The third part is devoted to a discussion of these results and the paths they open up in various fields of theoretical and applied research.*

Keywords

Auditory experience, lived experience, pre-reflective, sound, structure of experience.

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Introduction

What is it like to listen to a sound? The auditory experience has been studied relatively little. Whereas other traditions¹ give prime importance to hearing and sound, in our Western culture, sight is considered as the noblest of the senses. As Aristotle wrote, ‘Seeing, most of all the senses, makes us know and brings to light many differences between things’ (Metaphysics, A, 980a). Most of our understanding of knowledge is based on the visual model. Philosophical studies on hearing are rare, compared with the very large number of studies about sight and colours in particular. When sound is studied, it is studied from a physical or psycho-acoustic viewpoint, but rarely from a philosophical viewpoint (Casati & Dokic, 1994), and even more rarely as lived experience (Ihde, 1976/2007).

In the study presented in this article, we look at the experience associated with listening to a sound. Our aim is not — in what would be the resurgence of sensorial atomism — to try to isolate the sense of hearing from the other sensory modes, but to describe what we live, in the whole of our experience, when a sound occurs. In our view a description of this kind, by drawing our attention to dimensions of perception which are difficult to detect when we focus on visual experience, could enrich our understanding of cognitive processes.

In the first part, we describe the method we used to gather descriptions of auditory experience and to analyse these descriptions. This work of explicitation and analysis has enabled us to identify a three-fold generic structure of this experience, depending on whether the attention of the subject is directed towards (1) the event which is at the source of the sound, (2) the sound in itself, considered independently from its source, (3) the felt sound. In the second part of the article, we describe this structure. The third part is devoted to a discussion of these results and the paths they open up in various fields of theoretical and applied research.

I. Itinerary and Explicitation Method of the Lived Experience of Listening

1. Itinerary

We have constituted a multi-disciplinary research group consisting of philosophers, psychiatrists, a doctor specialising in neurophysiology, a doctor / therapist specialising in coma emergence, and a psycho-

[1] As in that of Veda in which listening to sounds (nada) is considered to be a privileged way of gaining access to supreme knowledge.

therapist. What brings us together is the conviction, for both philosophical and empirical reasons, that it is essential as a matter of urgency to introduce the 1st person viewpoint into cognitive sciences and neurosciences, as well as in the clinical field. Our work was carried out in three phases, following a preparatory phase during which we practised lived experience explicitation techniques, more exactly the explication interview, with the help of three of our members who were already skilled in these techniques (JMN, CP, BP). On completion of this preparatory phase, we then decided to concentrate on the explicitation of a particular type of experience, the experience of listening to sounds and music. We first chose the experience associated with listening to 'bizarre sounds'. In connection with his research in sound semiotics² (Aramaki *et al.*, 2009), one of our colleagues uses synthetic sounds which imitate for example the timbre of metal, glass or wood as it is hit. Changing one or more parameters makes it possible to obtain sounds with a timbre which is hard to identify, for example at some point between wood and metal, or metal and glass, sounds that we call 'bizarre'. Then we continued the project by listening to natural sounds, and then music. The three phases are as follows.

Phase 1

During this phase we spent two days listening to bizarre sounds and then making these experiences explicit. The procedure was as follows: (1) The group listens to a sound (lasting about 2 seconds). (2) Immediately after listening comes self-explicitation, i.e. each person describes in writing the experience he or she has just lived while listening to the sound (explicitation instruction: 'What happened as you listened to the sound'). (3) Cross-explicitation interviews, in groups of three persons playing in turn the role of interviewer, interviewee and observer. We thus listened to three sounds, and this was followed by self-explicitation and explicitation in sub-groups. The first sound was a transformed metallic sound, the second a glass/metal sound, and the third sounded like a rustling. This initial phase was followed by: (4) work in sub-groups to analyse the descriptions, in order to identify possible common experiential categories, and then (5) work in a large group to compare the categories detected by each sub-group, in order to point to the existence of any possible generic categories.

The main result of this initial phase was the detection of a generic process of attempting *to identify the source of the sound*: each of us,

[2] The semiotics of sound consists of identifying the acoustic clues which enable us to recognise a sound, and the cerebral processes associated with this categorisation.

for each sound, immediately tried to recognise the source of these bizarre (unheard-of) sounds. This process consisted in particular of identifying the means by which the sound had been produced, the action which could have generated the sound. We then asked ourselves whether the detection of this source identification process had not been made possible by a sort of slowing down or 'distention' of this process, which is usually very rapid and pre-reflective, a distention resulting from the ambiguity of the sounds listened to. Two other salient categories were identified: the specific *attentional disposition* enabling this recognition process, which itself is immediately enabled by a *process of generating this attentional disposition*.

Phase 2

Other types of sounds were used as material for the second phase: sounds from nature (in a garden and in a forest), the sound of a Tibetan bowl, short pieces of classical music (Brahms, Bach, Gregorian chant). On each occasion the protocol was identical to the previous one: (1) Listening in a group, (2) Immediately afterwards, self-explicitation, (3) Cross-explicitation interviews, (4) Analysis of descriptions and pointing up of existence of descriptive categories, and then (5) Comparison of categories detected.

This second phase, while confirming the existence of the process of identifying the source of the sound, enabled us to reveal two other dimensions of listening, two other ways of listening to a sound. The attention of the subject may in fact turn to the characteristics of the sound as a sound, independently of its source. It may also turn to the bodily felt sound, independently of the sound's source and characteristics. These three modes of listening correspond to three different attentional dispositions, each of which seems to have a different impact on the *structure of the lived space*. As the temporal structure of the auditory experience (in the form of the protention-retention process) has been described in detail by Husserl (1893-1917/1964), we decided to concentrate our efforts on the explicitation of this 'spatial' structure.

Phase 3

In a third phase, we considered this threefold structure as a hypothesis to be confirmed or falsified by the explication of other auditory experiences. For example, we tried to refine our descriptions of the attentional disposition specific to each listening mode. To do so, we fine tuned the explicitation questions which could trigger a reflective

consciousness of each of these dispositions. One way of triggering this consciousness is to draw the subject's attention to the moment at which and the way in which he moves from one disposition to the other, in order to amplify the perception of the contrast between the two dispositions. This third phase — during which we listened to other natural sounds (such as that of a wood fire), and a short extract from a piece for 'Glass Harmonica' by Mozart — enabled us to refine the description of the structure of the listening experiences which we had identified during the two first phases.

2. *Auditory experience explicitation method*

To gather auditory experience descriptions, we used the explicitation interview method.³ As we do not have the space here to describe it in detail, we will set out its main principles.

The goal of an explicitation interview is to bring a person to become aware of the pre-reflective part of his experience and to describe it with precision. The pre-reflective part of experience is that which is usually hidden by the absorption of attention in the object or content of the experience, and as a result is not spontaneously described by the subject.

The first key to the interview consists of explicitating an experience which is precisely situated in space and time, and bringing the subject back to this singular experience when he moves away from it — as is very often the case — towards the expression of generalities corresponding not to what he is experiencing but to what he knows or thinks he knows about his lived experience (and thus interpreting it rather than describing it).

In most cases, there is a temporal gap between the initial experience and its description. The second key to the interview is thus to help the subject to recall the experience, whether it is in the past or only just over, i.e. to return to it in all its sensorial and emotional dimensions, to the point at which the past situation becomes more present for him, at the time of the interview, than the interview situation itself.

The third key to the interview consists of helping the subject to redirect his attention from the content of his experience towards its

[3] The four main references in English are: Depraz *et al.*, 2003; Petitmengin, 2006; Vermersch, this issue; Maurel, this issue. Interested readers will find in these articles numerous other references in French.

diachronic and synchronic structure,⁴ thanks to questions which are 'empty of content', which 'point to' the structure of the experience without bringing in any content. This questioning mode, which focuses on 'how' and excludes 'why' is based not only on linguistic indexes but also on non-verbal clues such as gestures which accompany (or replace) words in a pre-reflective way. The structure of an interview is an iterative structure which consists of bringing the subject to evoke again his experience several times, while guiding his attention towards a diachronic or synchronic mesh which is finer each time.

Once the descriptions have been brought together, analysis and comparison work is necessary to identify the structure of the experiences described, that is 'a network of relationships between descriptive categories, independent of the experiential content' (Delattre, 1971) and to detect any generic structures which are gradually extracted from the initial descriptions thanks to a succession of abstraction operations.⁵ For example in the work we are concerned with, the bringing together of several descriptions such as 'I recognised the chirp of a blackbird', 'It is the sound of the wind in the trees' and 'It's Lucie I can hear' enabled us to detect an experiential structure which we have called 'identification of the source of the sound'. The recognition of a link between several descriptions of the type 'My attention is directed towards the fire over there' and 'I let the sound come to me' also enabled us furthermore to identify a synchronic experiential structure which we have termed 'attentional disposition'.

3. Self-adjustment of practices

Throughout our study, we have been at pains to be attentive to our practice, to acquire a reflective consciousness of it and to constantly move to and from between theory and practice, instead of remaining in the natural attitude, which consists of being absorbed in the object of the activity, i.e. here the production of results, particularly the production of generic descriptions of the structure of the auditory experience. As the format of this article does not allow a thorough analysis of this practice, which would require an article in itself, we will only mention the aspects to which we have been particularly attentive.

[4] The diachronic structure of experience corresponds to the stages of its unfolding in time. The synchronic structure of experience corresponds to its configuration at a given instant (sensorial registers used, type of attention mobilised, etc.)

[5] For more details on these operations of abstraction see (Petitmengin-Peugeot, 1999) and (Petitmengin, 2001).

In the gathering of descriptions, this reflective reconsideration of our practice, as interviewer and as interviewee, has been carried out by the means of ‘interviews about the interview’.

— How does the interviewer understand the description, and thus the experience, of the interviewee? To try and answer this delicate question, we set up the following ‘experiential protocol’: an initial interview in which the interviewer elicits the evocation of an experience; a second interview in which the interviewer of the first interview makes explicit with the help of a third person his experience during this first interview.

— How does the interviewee evaluate the authenticity of his description? We have obtained some indications of an answer to this question by systematically gathering at the end of each interview a self-assessment by the interviewee, thanks to the following three questions: Does your description seem in your view to match up with the experience that you lived? (...) How do you know? (...) What did you do to answer my questions? These questions have enabled us to gather a description of precise evaluation criteria, for example, surprise because of the novelty of what is described:

I have even been surprised to find things that I was not really thinking about, for example, these double pulsation movements (...). Yes therefore, I couldn't invent that. (Jean, Bach)⁶

For the same person, but another aspect of experience, the criterion is on the contrary a feeling of familiarity with what is described:

All this is not at all new for me. I have always felt that. What I did this evening is to reveal the fine grain of what I have always lived. It is the musical experience I have *all the time*. I knew all that but I have got a finer consciousness of the music. It is as though things were taking on an extra dimension. (Jean, Bach)

This investigation has shown that throughout the work of explicitation, the subjects have precise internal criteria which give them information for example about the appositeness of a world, the effect of putting the experience into words, or the intensity of their contact with the experience. These criteria enable them to implement internal micro-regulations for example to adjust, continue or stop verbalisation, or to reactivate contact with the experience when contact is lost.

I let myself become completely fascinated... I have the impression that my very repetition of words (for example, when I repeat ‘filaments,

[6] Most of the interview excerpts have been slightly reorganised to facilitate the reading of this article: elimination of hesitations, redundancies, non-informative parts. A few excerpts are taken from interviews carried out with persons from outside the research group.

filaments'), finally almost makes me believe in the filaments, and I no longer give more than half my attention to what really happened. But as soon as I completely return to experience, I realise that 'filament' is not exactly the right word. I also realise that these filaments are sharp-ended filaments, filaments which make you scratch, and which are indeed associated with the impression of scratching given by the sound. (...) As soon as you asked me that: 'Does the experience match up with the description?', you immediately put me in the situation in which I absolutely had to return to experience, and stop describing it. This was a good way to return to the evocation, more intensely than before. (Michel, Brahms)

— We were also attentive to the impact of the modes of experience on its unfolding: for example, how the more or less 'constrained' nature of the experience — evoked experience or experience which is elicited in order to be made explicit (like listening to bizarre sounds) — influences the unfolding of this experience.

In the analysis of the descriptions, we were attentive to the following aspects:

— The process of emergence of descriptive categories and a shared vocabulary to describe the auditory experience: how did the abstract categories ('Source of the sound', 'Attentional disposition') emerge? How did we identify them from the descriptions gathered? In this phase of analysis, what did we do to 'understand' other people's descriptions? To what extent, in order to understand the description of another, did we have to access our own experience and through what process? How (and to what extent) did we arrive at an intersubjective agreement on these categories?

— The impact of the category on the experience, and the process of mutual refinement between descriptive categories and reflective consciousness of the experience: is the abstract category a vector of refinement or on the contrary of impoverishment or rigidification of experience? On numerous occasions, the emergence of a category describing an aspect of experience has enabled us to 'stabilise' in a way the reflective consciousness of this aspect, whose effect has been to further refine the consciousness of this aspect and thus to provide further details about its diachronic and synchronic structure.⁷ For example, the fact of stabilising through a descriptive category the reflective consciousness of an 'attentional disposition' has made it

[7] Note in this respect the remark made by James: 'The snow that had just fallen had a very strange aspect, different from the usual appearance of snow. I decided to call it 'micacé', and it seemed to me, as I chose this name, that this difference became more distinct and more fixed than it was before' (James, 1890/1983, p. 484).

possible to detect a ‘process of generating this attentional disposition’, and thus to refine the diachronic structure of this disposition. The act of stabilising the reflective consciousness of the ‘bodily zone where the sound is felt’ has enabled us to refine the synchronic structure of this dimension of experience by differentiating between ‘height of feeling’ and ‘depth of feeling’. What is interesting in the last example is that the ‘depth of feeling’ category has — in contrast to the previous one — emerged from the analysis of the interviews even before we had reflective consciousness of it: it is the category which, by drawing our attention to this dimension, enabled a reflective consciousness of this experience. In other words, the categorial refinement may precede and generate the experiential refinement.

It should be pointed out that one of us is a musician, and that two of us have regularly practised *samatha* and *vipassana* meditation for fifteen years.

II. Results: The Threefold Structure of Auditory Experience

The use of these interview and analysis techniques have enabled us to gather a description of ordinarily pre-reflective dimensions of the auditory experience, and to derive from these descriptions the following threefold structure.

1. ‘Source of the sound’

1.1 Identification of the source of the sound

A sound is produced. If I am asked to describe my experience of the sound, what I ordinarily immediately describe is the physical event which is at the source of the sound: ‘Someone has broken a glass in the kitchen’, ‘It is the sound of the wind in the trees’, ‘It is Peter who is sawing wood in the garden’. As Don Ihde writes: ‘Sounds are ‘first’ experienced as sounds of *things*’ (2007, p. 60). The sound provides me with information about the characteristics of the objects which have produced it: their direction, their distance, their speed, the matter of which they are made, their density, their solidity or hollowness, and the consistency of their surface. But what is the experience associated with this act of identification? How do I know that it is the sound of the wind in the trees? What do I do to recognise this sound? This type of question — asked in self-explicitation and in explicitation interviews — has enabled us to begin to describe the ordinarily pre-reflective process corresponding to the act of identifying a sound.

— What these questions reveal first of all is the *result of the identification process* in the form of inner speech and images representing the source event. The subject pronounces the name of the source in an inner voice and/or sees an image or a visual scene representing the source.

Very quickly, I imagine that it is air, wind. It is a powerful rush of air. I have the impression that it is something sweeping past. I saw a rush of air which was growing in force, from left to right. (Hélène, sound 57)

It may be an image which is precise in its size, location and colours:

I see a frog in the form of an image about 20 cm square, although the image does not really have any sides. It is situated about 1 m 50 from me and about 20° above the horizon. The frog is brown and is cut out, that is it does not form part of the decor. (Jean-Michel, sound Adrien 37).

It may be a detailed scene — in which the subject finds himself in a specific ‘perceptual position’ (Andreas & Andreas, this issue):

‘There is an image of monks... They have their hoods, they are contemplative, they are chanting. They are in the choir of a basilica or of a cathedral, it’s a small group, they are at the back, I’m a long way from them. I am in the basilica but I am at a side door, relative to the choir, the side door on the right.’ (Hélène, Gregorian chant)

...or an ‘atmospheric’ scene:

Silence, forest interior, deep calm of the night... an atmosphere of vegetation. I ‘recognised’ the song-trill-chirp of a bird. Not ‘this is a bird’, but a complete atmosphere of peace, of attentive listening, of an evening in the unthreatening solitude of an unlimited forest. (Michel, sound Adrien 37)

The source of the sound can also be identified without words or images appearing. This experience, which has been described to us on several occasions, has been termed by Hurlburt (2009) *unsymbolized thinking*:

This sound evokes the sound of a cow mooing. I didn’t say to myself ‘it’s a cow’, I did not see a cow, but I thought of it. But I don’t know how I thought of it. I didn’t say to myself, I haven’t seen it. But it was nevertheless very present, the moo of a cow or of an animal... a bovine. (Claire, sound Y23)

— The *process* which culminates in the identification of the source is hard to apprehend because it is usually extremely rapid and pre-reflective. But we have gathered some clues about it. First of all, it sometimes takes place by successive approximations:

I had the image of a flute. And immediately afterwards, of a creaking door hinge. Part of a door like that with the hinge... which opens. (Jean-Michel, sound Y17)

I have the mental image of a helicopter and then very rapidly the mental image of a microlight plane. (Jean-Michel, forest).

In the following excerpt, the subject also describes an internal criterion which gives him information about the fact that the first 'candidate' object is not appropriate:

I see a train, I have a feeling in my chest that it is not appropriate. So I see myself again with Claire in the forest at a moment when we heard this noise and we identified it together as the sound of wind in the trees. (Jean-Michel, forest).

In this last excerpt, the identification process is based on the *evocation of a memory*. Listening to 'bizarre sounds' has enabled us to detect another strategy consisting of *imagining the action of producing the sound*, in a constructed or remembered scene in which the subject can occupy several 'perceptual positions'. Here is the example of a constructed scene in which the subject is in 1st person perceptual position:

I can very clearly see the fingers move. In fact I cannot see the fingers, I *feel myself* playing the notes. I am at the harpsichord. It is not even the vision but the feeling of the gesture. (Jean, Bach).

In the following example, the subject is in 2nd person perceptual position, i.e. he imagines himself in the place of Mozart:

I can imagine myself perfectly in the process of touching this... this crystal and being him, and feeling the moment when pressure is just sufficient for the sound to appear. (Jean, Mozart).

Here the scene is seen in the 3rd person perceptual position:

I see the keys of the piano and a hand which is playing.... it is the pianist's right hand. But I can only see the hand and a very small part of the piano, the keyboard, with the blacks and the whites clearly delineated, and the hand. (Hélène, Brahms)

1.2 Attentional disposition

The source identification process is associated with a special kind of attentional disposition: this is directional attention, focused on the source of the sound. The subject is only interested in the characteristics of the sound as a way of identifying the source, whose image rapidly blots out the auditory experience itself.

My attention is directed towards the fire over there. The sight of fire blots out the rest of the experience. I forget the sound. It is as though the crackle becomes a quality of the fire, like its colour. (Claire, fire)

1.3 Structure of the experiential space⁸

In this process, the subject in a way is extended towards the source.

I am in contact with the trees which are I don't know how many metres high, but I am over there, almost literally ... because it is over there that the sound is. It isn't in my ears, it isn't inside my body, it is over there, up there in fact. (Dorothee, forest)

At a certain moment I identify the sound as the sound of wind in the trees. It is the forest. I quickly have an image of the whole forest undulating in the wind. I am over there, near the trees, at the top of the trees. I am going in this direction, I head over there, a certain distance away. (Claire, forest)

Instantaneously my lived space is extended, changing itself to go and touch the source of the sound in geographic space. (Jean-Michel, forest)

The imagination of the source extends lived space far beyond the space which is visually perceived. The sound itself and the sound medium become as though they were transparent. The subject 'leaves himself' in a sense, to extend himself towards the source, and the body is in a way 'forgotten'.

To sum up, the process of identifying the source of the sound can be characterised as follows: (1) its result — the source — which appears in a verbal, visual or non-symbolic form; (2) an identification process which consists either of evoking a memory, or imagining the action of producing the sound (in a scene in which the subject can take various perceptual positions); (3) an attentional disposition which is focused on the source; (4) an extension of the experiential space in the direction of the source, with the sound and the body seeming to become transparent.

[8] What we are attempting to describe here is the way in which hearing a sound modulates the space experienced, while putting into parentheses what we know or think we know about geometrical space and bodily experience — notably the concepts of bodily scheme and the distinction between 'inward' space and 'outward' space. In other words, it is a matter of moving from 'the thought of the body or the body in idea', to 'the experience of the body or the body in reality' (Merleau-Ponty, 1945, p. 231).

2. 'Object sound', 'heard sound'

We have gathered the description of a second listening mode, consisting of listening to the sound independently of its source. The sound is not considered as a clue, a sign, a means giving me information about something else, but it is perceived immediately for itself. We take an interest in the characteristics of the sound independently of the event and objects which produced it, and of the meaning it may have. If it is a voice, we take an interest in the voice as a voice, independently of the meaning of the words. The qualities of sound as such are traditionally listed as volume, pitch, timbre⁹ and persistence.

2.1 Characteristics of the sound

In the following excerpts, the subjects are trying to describe their experience of the sound as a sound:

This sound is very difficult to characterise because it is a very special sound, there are high notes, there are low notes, there are many tones in this sound. It is a sound in which there are several sounds. (Jean-Michel, Tibetan bowl)

A very pure sound, with these piano notes which are very clear, which come in to me through the right ear, with an impression of clam, because the notes are clearly distinct, and with a pretty and very sweet harmony. (Hélène, Brahms)

When I hear the glass harmonica, I am surprised by its slight, fragile character, like a little garland, so fine that it could break with the slightest breath of air. And this little garland emerging from the magma of the other notes, subtle, I turn my attention towards it. (Jean, Mozart)

— When the sound is listened to as a sound, the *auditory qualities* seem to be closely associated with *qualities of a quasi-visual order*: the sound may have a certain luminosity, a certain colour, a certain form, and it may occupy a certain part of the visual space and move inside this space.

Quasi-vision of the musical undulation. (Michel, Brahms)

There is something visual, but without colours, it is more like transparencies which are more or less ... dense. (Claire, Brahms)

I imagine a texture of glass, it is... a little transparent, bluish, slightly bluish, like crystal. It has colours yes, bluish white. (Jean, Mozart)

I really see something like a kind of triangle which is growing from left to right, I see it. (Jean, Mozart)

[9] Timbre, which is very difficult to characterise, is what differentiates the sound of a piano from that of a clarinet, for example.

Its chant appears to me like bowls which are enmeshed into each other, in growing sizes, parallel to the intensity of the sound. They are brown in colour, and start out from the lower left hand corner of my image. (Hélène, sound SA37)

I see something as I hear the sound, I see something... angular. I cannot really say that I see it, but there is something visual and angular. I had an impression also, now it comes to me, also at the same time of... oh, of... it was accompanied by a kind of quite violent luminosity. Like a... beam of light. Like the sound, a beam. Like the sound which rises like that, with a kind of openness, it was also a beam of light, you see. A little angular, you see, like that [gestures]. The sound did not occupy all the space, it was as though it was closed up in an angle, in the space over there, you see.' (Claire, sound Y23)

These quasi-visual auditory qualities also sometimes seem to be associated with *qualities of a quasi-tactile order*:

In fact it is difficult, this sound... it is intriguing.... Because it is at once breathy, rough, shrill... And when I say shrill, that means piercing... like small needles. (Jean, Mozart)

The sound unfolds little filaments, which are rather like a scratching. Here again it is a little visual, that is from time to time I see small filaments of scratching which infiltrate to the left, to the right [gestures]. I see it very clearly... slightly low on the right. Small silver and white filamentous growths. (Michel, sound Y23)

As soon as the sound starts I have the impression of something sharp, aggressive, grating. (Claire, sound Y23)

We may note a very clear difference between these auditory feelings, which are quasi-visual and quasi-tactile, and some very precise images whose content may be symbolic (scores, texts), elicited by listening to the sound as a sound, and particularly to music:

The music appears, the melodic structure appears, with the rhythm, but there is neither a key nor lines. What appears very clearly white, pearl white, silvery white, are the notes... which unfold, which advance like that. They appear to my left. I see three or four notes and the vertical and the horizontal, three four notes and I see the two voices or the three voices depending on the case. I see the score. I see the essentials of the harmonic relations between the notes. (Jean, Bach)

— What *process* does enable the *identification of the qualities of a sound*, for example the differentiation of the timbre of two instruments or the appreciation of the volume of a sound? Although this process is particularly pre-reflective, we have gathered some fragmentary descriptions. For example, in the following excerpt, it is a

change in the perceptual position which enables a classical pianist to evaluate the quality of the sound she produces during a concert:

I become two in a way, in order to be present in the auditorium, as a spectator. I see myself play, I hear from a distance the sound which fills the auditorium, I can have a demanding ear, control the sound, and make people hear what I wish to hear. (Charlotte, piano concert)

2.2 *Attentional disposition*

The mode of attention required to listen to the sound as a sound is less directional, more open, more diffuse than the mode which is focused on the source.¹⁰

My attention is directed towards the space between the fire and me. (Claire, fire)

I hear the sound, not over there [at the location of its source], but I hear it in space, in a more diffuse way. The sound fills the space in a far vaster way. (Claire, forest)

This mode of attention however remains deliberate. It requires a tension, a slight effort.

I stretch out towards these sounds in space, I make a slight effort to identify them. (Claire, fire)

I go and look for the nature of the sound. I push my attention. It is a relative... effort. (Jean, fire)

The zone of the body mobilised is the region of the ears.

It's as though I was going to meet the music... I don't know if you can say attention, my hearing... I listen out with my ear, that's it, I listen out with my ear. (Hélène, Brahms)

Listen out with the right ear. Small movements of muscles inside the right ear, from the interior of the body to the exterior. Sensation of a rush of blood in this zone. (Jean-Michel, fire)

To characterise the sounds, it seems to me I have to concentrate on my ears, in a movement which starts in my neck, moves up into the nape of the neck and then moves behind and in front up to the top of my skull. Like an internal periscope, like an internal horn of a snail which rises. I concentrate on opening my ears, as though the auditory canal became larger. (Jean, fire)

[10] Don Ihde describes the transition from a directional listening mode to a less focused listening mode as follows: 'The sparrow's song in the garden presents itself *from* the garden. But if I put myself in the 'musical attitude' and listen to the sound as if it were music, I may usually find that its ordinary and strong sense of directionality, while not disappearing, recedes to such a degree that I can concentrate on its surrounding presence.' (Don Ihde, 2007, p. 77)

— This listening mode enables the discernment of nuances which remain unnoticed when the attention is absorbed by the source of the sound.

I hear nuances, different ‘layers’ of sound, irregular cracks which are more or less loud, and more continuous hissings, to which I was not paying attention. (Claire, fire)

2.3 Structure of the experiential space

This listening mode seems to cause a sort of ‘densification’ of the space situated between the ear and the source. The medium, which is as though it were transparent in the previous listening mode, takes on a certain density, a certain thickness.

It is densified a little towards the sound. (Jean-Michel, Mozart)

A rhythmical densification of the space. (Claire, Adrien 37)

The source of the sound, which in the previous listening mode masks the sound, fades away, it is as though it had been forgotten.

I’m no longer interested in the fire. I don’t even know that it is a fire. (Claire, fire)

But the sound remains ‘external’, on the surface, listened to only with the ears and not with the whole body.

After reaching the top [of the hill] I try to concentrate on the sounds. But all these sounds remain in a way on the surface. They stay in my ears and in my skull, as though they are external to me. They never go down into my centre. This is absolutely not equivalent with music. It does not grab me like music. (Jean, forest)

There is part of the music which does not penetrate, which I cannot succeed in feeling. It remains on the surface, outside me, an exterior sound which I listen to only with my ears. (Claire, Mozart)

To sum up, listening to sound as sound is characterised by: (1) identification of the qualities of the sound, auditory qualities closely associated to quasi-visual and quasi-tactile qualities; (2) an attentional disposition which is less directional than the disposition directed toward the source and yet deliberate, which mobilises the region of the ears, and enables the discernment of nuances which are not perceived when the attention is absorbed by the source of the sound; (3) a densification of the space between the ear and the source, and the occultation of the source of the sound.

3. *Felt sound*

A third listening mode consists of taking an interest in felt sound, ‘what it does to me’ when the sound is listened to. I divert my attention from the source of the sound (‘what is this sound’), and from the sound as a sound (‘what this sound is like’), to direct it towards the felt sound (‘what the experience of this sound is like’). To use a visual analogy, I am no longer interested in the blue vase, nor in the blue of the vase, but I am interested in the felt blue, what it does to me to look at this blue.

3.1 *Bodily felt sound*

The sound ‘resonates’ in our body. This resonance is sometimes very easily perceptible, like that of the bass in a rock concert or a nightclub, or that of a pneumatic drill. But a certain amount of practice makes it possible to become aware of more subtle resonances, such as that of the voice (whether someone else’s voice or my own voice), of music, of the sounds of nature, or of any other sound. Talking of ‘bodily felt’ sound is however an initial approximation. To describe the experience of felt sound, particular vigilance is required in order not to allow the description of the known bodily schema surreptitiously cover the description of the lived body.

Felt sound is characterised by the *zone of the body mobilised* and by the *sensorial qualities* of this felt sound.

— The resonance of the sound may be experienced as global, penetrating the whole body:

The sound penetrates into us like the air we breathe. (Jean, garden)

The music fills me. (Michel, Brahms)

I feel the sound in me, I listen to it inside myself. (Claire, fire)

This resonance may also be felt at different levels of the body:

The notes fill my head, and then it moves towards my plexus. It’s a kind of undulation which fills my head from top to bottom and from right to left and then from left to right, and which gradually moves downwards. (Hélène, Brahms)

I feel sense of slight tightening which begins at the top of the stomach and spreads upwards towards the centre of the chest before disappearing instantly. (Jean-Michel, Y17)

This resonance can be felt more or less deeply in the body:

Each time there is a sound, I am transfixed. In fact sometimes it goes through me, sometimes I am transfixed, and sometimes I am just lightly touched, on the surface.' (Jean-Michel, Mozart)

It can be experienced as correlated to the intensity of the sound:

The intensity of the bodily feeling is correlated to the intensity of the volume of the various sounds. (Jean-Michel, fire)

A sharpened attention enables the detection of a correlation between the pitch or the intensity of the sound, and the zone of the body which enters into resonance:

Each crackle of the fire passes pleasantly through my body. The deep sounds go through the stomach. The high sounds go through the chest. (Jean-Michel, fire)

The sounds go through my body: the high notes, the chest and the head, and the low notes, the stomach. (Jean-Michel, forest)

This sound, I feel it at the level of the heart, and I have the impression that it is opening up my heart, that it is opening something up, a space in the middle of my chest. (...) When the vibration becomes very very weak, I feel it at the summit and in the centre of my skull, inside. (Claire, Tibetan bowl)

— Sensorial qualities of felt sound. Most of the descriptions we have gathered of felt sound call on several sensorial registers: not only the auditory, but also the visual (transparent) and the tactile (smooth, fresh, sharp, prickly).

A happy, round, transparent freshness. I feel myself refreshed by the sound. (Claire, Adrien 37)

Welcoming, not warm because it was not in terms of temperature. Cosy. With a quilt, feathers, wool and all that, cotton... There is a thickness, a roundness. (Dorothee, Tibetan bowl)

It is a round rhythm, a round sound whose rhythm is smooth and round. (Claire, Brahms)

More precisely, we have noted that the submodalities most frequently used to describe felt sounds are movement, intensity and rhythm, i.e. 'transmodal' characteristics, which are not specific to any of the senses, but can be transposed from one sense to another (unlike for example temperature and texture which are specific to touch, or colour which is specific to sight).¹¹

[11] Plato (*Théétète* 185a-186a) and Aristotle (*De l'âme*, II, 6, 418 a12 et 418 a18-20) had already noted these characteristics, which they termed 'common sensibles'.

Straight away, I feel the pulsation of the music, and I feel it in my body. I feel inside myself something which is... sort of jumping... with the rhythm of the notes in my upper body, in my thorax, at the level of my heart and my solar plexus, something which is agitated like a dance. Inside myself it is as though there were... a rhythmicity which was completely in tune with the music and which meant that in my innermost being, muscles... or things contract, exactly as though I was dancing this music inwardly. (Jean, Bach)

The felt sound is a rhythm, a pulsation. It is what in music is not encoded by notes, but by dynamic notations such as ‘crescendo’, ‘staccato’, ‘piano’, ‘forte’...

In this famous solar plexus there are things that happen, which are pulsations which are those of the music, movements... of which I do not know the nature, pulsations which are those of the music and in fact there are two levels of rhythm. The intellectual rhythm is the succession of the notes themselves, quavers, semiquavers, etc., which I see in the score. And then at the same moment, there is this profound rhythm, which is the pulsation, which is not written in the music. There is this extraordinarily profound pulsation, which is absolutely not intellectual, that is not in the notes. I feel profoundly the pulsation in my innermost being as something which rises and falls, which contracts, like a sort of big heart that beats, but which is not going at the frequency of my heart but at the frequency of the specific pulsation of the music. A whole rhythmicity inside me which is in tune with the music. (Jean, Bach)

These inward movements, which are infinitely more subtle than emotions, and are described here as something of a ‘pulsation’, are easier to perceive in the experience of music. But fine attention also enables becoming aware of them in the feeling elicited by a voice:

This song wraps itself around me and penetrates me, it is as though it were massaging me inside. (Claire, chant)

I feel the vibrations of my patient’s voice on my face, like a sort of weak electric current, a slight prickling. When the volume of her voice increases, my sensations increase in intensity. When the tone and the rhythm of the words change, my sensations are also modified. [Later in the session] her voice vibrates differently, I feel these vibrations and their variations in my chest, my stomach. (Jean-Michel, therapy session)

...or by a sound in nature:

This poplar over there, it is as though radiated from it something, a shiver, a diffuse light, a very slight, very fine sound, which comes to me and touches me indescribably. (Claire, forest)

In this listening mode, the sound seems to lose its identity as a sound.

I feel this shiver in me. It loses its 'sound' identity. (Claire, forest)

3.2 *Attentional disposition*

— Special attentional disposition is necessary to become aware of the felt sound. This attention is unfocused, peripheral, and also passive and receptive:

When I put myself in this disposition and that 'there, I am ready to listen', I feel like saying that my experiential space is my body and the whole room. (Jean-Michel, Mozart)

There is openness, welcoming. You don't go looking, you wait for it to come. (Jean, fire)

I let the sound come to me. (Claire, forest)

This attentional mode is easier to describe by contrast with the previous mode:

Firstly, it's as though I was going to meet the music... I don't know if you can say attention, my hearing... I listen out with my ear, that's it, I listen out with my ear. And then the music penetrates me, penetrates into my head, that's it. It's as though at the start, I was going to meet the music, and that afterwards we met and it was the music which was penetrating me. (...) The passivity comes afterwards, once the encounter has taken place and the music is penetrating me. At that moment, I no longer need to... I am penetrated. (Hélène, Brahms)

In this listening mode, the bodily zone mobilised seems to be the front, and more particularly, the upper part of the body:¹²

At the outset I am in a listening posture, my centre is open and ready to receive the sounds. (Jean, fire)

And at that moment, I realise that what is mobilised in me, what is listening, is not only the ears, but a zone which is much vaster. And immediately, it's quite well delineated, it comes from there, in the middle of my chest, up to the head and even a little bit beyond the head, on the sides. It is as though my head was a little... bigger and I was listening with a sort of triangle, like that. (Claire, moped)

For the vibration to be fully felt, it seems important that this part of the body should be exposed to it, with no screen coming in between:

The sound almost imposed... that I should put my back against something, not to relax or something like that but rather to open myself up... and it was really physical, it had nothing to do with a mental position. It

[12] The importance of the frontal zone of the body in this listening mode has been pointed out in particular by Don Ihde: 'The other, when speaking in sonorous speech, presents himself (...) as a 'presence' who is most strongly present when standing face to face.' (2007, p. 79)

had... become uncomfortable to feel this vibration in the stomach with the stomach compressed like that because I was bent over... So... to leave space for the vibration to spread out, or something like that. (Dorotheé, Tibetan bowl)

I prepared myself, it was important for me to prepare myself physically... by adopting a listening position which for me is very physical, that is that I really need the sound to reach me... that there should be no screen between the sound and me. I was almost embarrassed to be seated because in fact there was the table which takes up space, which comes up to there, so all the lower part of the body does not receive... that is, it forms a screen. It's a little bit as though I needed my whole body to listen... to be really attentive to what it does to me to hear a sound. (Claire, Brahms)

— This attentional disposition is sometimes consciously prepared by a *process of generating this disposition*:

It is as though I was opening something up, which could be closed at certain moments, but that I open up to the maximum by making myself a little bit vulnerable, a slightly fragile zone that I am going to open up. (...) Before listening, I breathed deeply several times, I took breaths that were slightly bigger than usual... precisely in order to open up this zone and put myself in this position. (Claire, Brahms)

I am standing up, I absolutely needed to stand up to face the music, with both ears identically active, in an almost prayer-like attitude. My body has disappeared. All that remains is the centre, a yawning, open cavity, which awaits the sound, somewhat impatiently. I oscillate slightly around myself, as though to listen better. (Jean, Mozart)

Whereas in the previous excerpt the consciousness of the body is hidden, in the following excerpts it is on the contrary intensified by a systematic process of making contact with bodily feelings, validated by a very precise internal criterion (deep breathing).

I put myself into my body, I go down into my body. My whole body is mobilised. Breathing plays a role. I breathe in deeply which helps me both to enter into this state and indicates to me that I am (almost) in it. The breathing takes place on its own, at a very precise moment. (Claire)

I make contact with my sensations. It begins at the summit of the skull, and it ends with the soles of my feet. It is accompanied by an eye movement [eye movement in a downward direction]. In fact, I go to look for the feeling from the top of my head with my eyes, and I move down very very fast, with my eyes too. (...) And it is also accompanied by a movement of relaxation. That is to say when I do that I have a wave... an awareness of feelings which is accompanied by a wave of muscular relaxation. And while remaining in contact with my interior, with these feelings, I open up. I open up my ears, I open up my eyes. And I am in

contact with what I see and what I hear too, and then at this point I wait, I wait. (...) This relaxation is validated by a deeper breath, which informs me about the fact that 'OK that's it'. At the end of this breath which comes like a sigh of relief. (Jean-Michel, fire)

3.3 *Experiential space*

— Sound vibration has an impact on the structure of the experiential space, it *transforms the texture of this space*. This transformation may be experienced as a relaxation, an opening, a softening:

I become relaxed [when music haunts me]. That is to say, I let myself be carried, I relax, in muscular terms, I relax. (Hélène, Gregorian chant)

This sound (...) I feel it opening my heart, opening something up, a space in the middle of my chest – that it is 'distending' it, 'tearing' it would be a little too strong. (Claire, Tibetan bowl)

I feel the first notes in my chest. It is as though something was softening in my chest and in my throat. (Claire, Mozart)

... or as a disruption: a tearing, a constriction. Felt sound may be unbearable¹³ :

There are two sounds: a continuous gust and explosions. The explosions have a very strong impact. At the outset I am in a listening posture, my centre is open and ready to receive the sounds. The explosions attack me, they destabilise me rapidly, as if I had been struck a blow. (Jean, fire)

It is as though the sound went through the whole of the triangle [the body zone mobilised to listen], and it is like lightning, it scrapes and tears the triangle, from left to right, from end to end. *It is not even a sound, it is a disruption*. (Claire, moped)

Experiential space may retain a trace of this disruption:

Afterwards, the triangle is instantly formed again... But I have the impression that in this triangle, a small scar remains. (Claire, moped)

— This transformation of the texture of experiential space seems to be the result of a *process* of rhythmic attunement with the sound vibration:

It was really a... synchronisation of the rhythm with the vibration of the bowl, something like that. It was a vibration, it was an undulation which came from the bowl to me, and once it was in me, it was more a rhythm of... like a beat perhaps... but very very very small. And this

[13] 'This presence [of sound] is also a penetrating, invading presence. (...) This penetrability may be shattering, ultimately painful. The sudden scream at the moment of highest tension in the Hitchcock movie upsets my composure, and it is rightly described as piercing.' (Don Ihde, 2007, p. 81)

synchronisation was really interesting because the bowl vibrated increasingly slowly, less and less intensely, and thus, knowing that it was synchronised, that... it is as though my bodily functions had slowed down at the same time, that really gave this feeling... of going more gently from the interior. (Dorothee, Tibetan bowl)

It is as though the music entered inside me, got hold of me somewhere inside myself and forced me to follow, led me to follow on the rhythmical level. (...) I really feel an attunement between the sound and myself. (Jean, Bach)

—This synchronisation between inward space and outward space weakens, and makes less rigid, the distinction between the two:¹⁴

It is as though the exterior became denser and the interior more vibrant, less dense, and gradually the texture becomes identical. (Claire, Tibetan bowl)

This vibration abolishes the limits of my body. There is no interior and exterior, there is only this vibration. (Claire, Tibetan bowl)

The sound, it abolishes the limit between me and the outside. (...) There is no more skin, or a skin which is much more permeable. (Claire, forest)

The synchronisation of the two spaces may have the effect of removing the personal ‘envelope’:

There are pieces, moments when truly I am no longer there... (...) There is a coalescence at a given moment between what I am and the music. (Jean, Bach)

To sum up, felt sound is characterised by: (1) an attentional disposition which is unfocused, receptive, prepared by a process of generating this disposition which mobilises breathing in particular; (2) the bodily resonance of the sound, itself described by its level, its depth and its intensity, and its transmodal character; (3) a transformation of the texture of the lived space, associated with a synchronisation between interior space and exterior space, which makes the frontier between the two spaces more permeable.

[14] This synchronisation can be very gradual. Sometimes it can be immediate, which has the effect of instantly ‘cutting through’ the distinction between inward space and outward space. It is this experience which is remarkably described in the following lines by Rilke: ‘He evoked the memory of the hour, in this other southern garden (Capri), where there was, outside and inside him, and putting one in tune with the other, a bird call which, in a way, did not break at the frontier of the body and reunited both sides in a single uninterrupted space where only remained, mysteriously protected, a single place of the purest, of the most profound awareness.’ (Rilke, 1966)

Evocations

In the analysis of the interviews, we have noted many evocations generated by the sound, which themselves are associated with particular emotions or feelings. For example:

Music elicits something old-fashioned which I connect with my grandparents, with the atmosphere I experienced in their home. A living room appears, it is the living room of my grandparents. With colours that are a little dull, faded. The living room is there, and the music makes me feel a sensation which I had when I was a child entering this living room. (Michel, Brahms)

The evocation may even appear before the source of the sound has been recognised:

Something comes in through the skylight. Immediately, before even recognising it as the cooing of a dove, a particular atmosphere comes back to me of an abundance of plants and calm, with a hint of an earlier time. I recognise this earlier time as an earlier time which is not very distant, that of the time when I bought this house, ten years ago, when I discovered spring in the country. I realise that my body has just taken on a different texture, with a greater density in my back, with a particular sensation in my chest. (Claire, dove)

In these experiences, the evocation immediately elicits a bodily feeling which surreptitiously hides the felt sound – as one of us pointed out:

It is the evocation which induces a bodily feeling. The evocations take me away from the experience of the sound. (Bernard, fire)

This is why we have noted these evocations, but have decided for the moment to leave them aside.

Interpersonal variations

For some of us, or at certain moments, the source of the sound, heard sound and felt sound are difficult to dissociate or stabilise:

The source of the sound was it really first, or rather not first, it was... there were not two moments, not 'hey a sound, what is it' or 'hey a fire, that comes with a sound like this and like that', it was really all one I think. The sound itself, stripped of its source, that was difficult for me because for me it was really intrinsic to the sound to have a source: 'it's a tree', 'it's a car', as opposed to 'something produced a sound'. And so I have not necessarily succeeded in separating them, and I have tried to concentrate on my bodily feeling, on what I can feel when I listen to these sounds... which is even more difficult than the rest. (...) I don't think have succeeded... in listening to the sound as a sound. The sound

of the crunching of sand under the foot, it was not the sound that interested me in itself, it was the sound as contact with the foot.' (Dorothee, forest)

It is particularly difficult to abstract one's attention from identifying the source of the sound:

When there is a rumbling, a crack, I immediately have a question about the origin of the noise. Why this noise. I cannot manage to abstract my attention from the question of the origin. (Bernard, fire)

For others, the distinction between the three modes and their stabilisation is easier.

I carried out the experiment of listening by straining my ears to the outside, a little as though to seize sound outside, there, towards the loudspeakers. And it is very different from putting myself how I put myself at the outset, that is to say in this highly receptive position in which I open up to let something come, to let come something which does in fact come... into my heart, here in the middle. (...) I forget this zone (the heart) and what was happening there, to carry myself in a more intentional way towards something which is happening outside. And there, I hear *a sound*. I don't feel anymore, I don't see anymore, I hear a sound. I feel it much more outside. At that moment, I have the impression that the 'round rhythm' aspect, to sum up what I was feeling then, is transformed into a sound, into a simple sound if you like. In space. An auditory rhythm... gentle and pleasant... but it is something on the outside. Whereas in the first part of the experiment, it is happening inside me, and it is as if the music... was caressing me, yes in a sense was caressing me. (Claire, Brahms)

In 1 the sound is over there. In 2 the sound is in the air, in the middle. I am no longer interested in the fire. I don't even know it is fire. In 3 I no longer know that it is a sound. I forget the sound, I forget the fire. (Claire, fire)

Some of us have developed a second-degree consciousness, i.e. a consciousness of the changes resulting from an increased consciousness of their sound experience.¹⁵ For example, Jean-Michel realises that the attention given to the intrinsic properties of the sound strengthen the felt sound.

When I try to distinguish between the different sounds, low/high, rhythm, my bodily sensations become more intense. That is when I focus on the characteristics of the sound, my bodily sensations intensify

[15] Shusterman (2007, p. 81) precisely identifies this sur-reflective level of bodily consciousness or 'soma-aesthetics'. At this level, we are not only conscious of being short of breath, or even of the way in which we breathe (for example, quickly and superficially by the throat), but we are conscious of the way in which our consciousness of breathing influences our actual respiration.

and become more precise. That is to say that I can locate the impact of a particular sound on my body. (Jean-Michel, fire)

Recapitulative table¹⁶

	Perceived result	Multi-modality	Attentional disposition	Experiential space
Source of sound	Object and/or procedure which could have been used to produce sound	Visualisation of the source	Focused on the source	Extension towards the source, transparent body
Object sound	Auditory qualities of the sound	Auditory qualities sometimes associated with, or translated by, quasi-visual or quasi-tactile traits	Non-directional but voluntary, centred on the region of the ears	Densification of space between source and ears. Obliteration of the source
Felt sound	Bodily resonance of sound	Transmodal feelings with visual, tactile, olfactory, kinaesthetic, somaesthetic resonances	Unfocused, receptive, prepared by a process involving the whole body	Synchronisation between inner space and outer space

III. Discussion

Our work of description and analysis thus leads to the hypothesis of a threefold structure of the auditory experience. The striking coherence of this structure with that revealed by the genetic realization method (*Aktualgenese*) — devised by Werner and his successors in order to obtain a description of the early phases of a perception — lends them both an element of mutual confirmation: ‘When you play a series of notes on the piano, it is possible to show in the apprehension several stages in which a sound is heard more inwardly or outwardly. The

[16] This table sums up the descriptive categories of listening identified here, except for processes of evocation of scenes triggered by heard sounds (which is currently being analysed in more detail).

most frequent mode of apprehension is that in which the listener hears the sound as completely outward, as though coming from a determined sound source, as though linked to a certain object (for example an instrument). Such a sound may be called objective sound (*Gegenstandson*). On the other hand, there is often another variety of state of consciousness; the sound is not placed in the object, but it fills the auditorium; it is no longer an objective sound, but a spatial sound (*Raumton*). But there is still another way of experiencing a sound impression; the sound may be felt by the body of the listener; it is like a vase which resonates when it receives the sound. ‘I am, says a subject, filled with this sound material, as though I had become a violin or a bell on which one might play.’ (Werner, 1934, p. 199).

However, this structure does not provide us with any information about the nature of the relationship between these three dimensions. Is it a static relationship of composition, with the auditory experience being constituted at each moment by the three dimensions? Is it a relationship of specialisation between three listening modes which are different and exclusive? Or is it a dynamic relationship, with each ‘dimension’ or ‘mode’ corresponding to a phase of a microgenetic process? A possible path towards answering these questions seems to lie in the distinction between several temporalities, which we hypothesise on the basis of our results: the double temporality of *becoming aware* of the experience on the one hand, and the temporality of the *unfolding* of the experience on the other hand.

Let us begin by looking at the first one, which is in fact a double temporality, that of the process of obliteration and of the reverse process of becoming aware of the auditory experience. The descriptions we have gathered have led us to make the hypothesis that the three dimensions we have detected — the identification of the source of the sound, heard sound and felt sound — correspond to aspects of experience which are increasingly pre-reflective, and which are hidden by one another. Ordinarily, when a sound is produced, attention is only directed to the heard sound to the extent to which it enables the identification of the source of the sound, an image of which quickly hides the heard sound. A sound is produced, and in a fraction of a second, I recognise this phenomenon as the song of a blackbird which comes in through my office window, without taking any further interest to the particularities of the birdsong.¹⁷ The sound itself is as though it were transparent, I only have a pre-reflective consciousness of it, rather like

[17] ‘The hunter intent on bagging his game misses the musical sonority of the birdsong, not because it isn’t there, but it is the direction and location of his prey which motivates him.

a blind person who explores an object with the tip of his walking stick, but has only pre-reflective consciousness of the contact of the stick in the palm of his hand, to refer to a well-known example.

Directing one's attention to the characteristics of the sound consists in no longer considering the sound as a means of obtaining information about something else, as the sign of something, and taking an interest instead in the characteristics of the sound as a sound. For example, I listen to the blackbird's song as a sound, forgetting even that it is the song of a blackbird. Like the blind person who directs his attention from the object explored to the tactile characteristics of the stick in the palm of his hand. This redirection of attention towards the qualities of the sound enables me to acquire a reflective consciousness of them, and to discern nuances which are usually obliterated by the absorption of attention into the source. The French musicologist Schaeffer calls this listening mode 'acousmatic',¹⁸ it is focused on the intrinsic qualities of the sound as a purely auditory object or 'sound object'.¹⁹ This listening mode, which consists of parenthesizing or suspending the spatio-temporal causes of the sound to 'reduce' it to what one hears, Schaeffer also calls 'reduced listening',²⁰ (1966, p. 270). So, he writes, 'often surprised, often uncertain, we discover that much of what we thought we were hearing, was in reality only seen, and explained by the context' (1966, p. 93).

The absorption of the attention in listening to sound as sound occults an even more immediate experience: that of felt sound. But special circumstances enable the attention to be directed towards this feeling to acquire a reflective consciousness of it. For example, several of us carried out the experience of physically feeling the arrival of an aircraft or a boat several minutes before the sound was audible.²¹

So, too, with most daily concerns, directionality is that which stands out and is sufficient for ordinary affairs.' (Don Ihde, 1985, p. 79)

- [18] The term comes from the Ancient Greek akousmatikoi, the name given to the disciples of Pythagoras who listened to their master through a curtain. The physical body of Pythagoras was hidden from them, and only the sound of his voice reached them. Schaeffer defines the term acousmatic as 'referring to a sound that one hears without seeing the cause of it' (1966, p. 91).
- [19] In a recent article, Schmicking, following a suggestion of Husserl, proposes that the sound, considered independently of its spatio-temporal causes, should be called 'tonal phantom' (2008).
- [20] Schaeffer has made of this listening mode the basis of his Musical Research Programme, whose aim was to discover the essential structures of sound, and to construct a taxonomy of sounds capable of organising not only the sounds of instrumental music, but all the sounds of the universe.
- [21] This phenomenon has been related by Don Ihde: 'In Vermont while lying in bed at night my son often asked what the strange vibration of the earth was, until we noted that this

A certain attentional disposition makes it possible to become reflectively conscious of feelings which are even more subtle, such as that elicited by the voice of someone else, the song of a blackbird or even the rustling of foliage. Instead of going in search of the sound, 'listening out' towards it to characterise it, this disposition consists of making oneself receptive to it, of letting the sound come to you, of letting yourself be 'touched' by the sound. Like the blind man who could turn his attention away from the tactile characteristics of the stick ('smooth', 'cold') to internal sensations felt in the palm of the hand, who instead of touching the stick would allow himself to be touched by the stick.²²

Pulsation, beat, caress, shiver... the dimension of the experience which is then discovered is made up of imperceptible dynamic modifications of intensity, orientation, amplitude, texture and rhythm, of a transmodal nature. 'These elusive qualities are better captured by dynamic, kinetic terms, such as 'surging', fading away', 'fleeting', 'explosive', 'crescendo', 'decrescendo', 'bursting', 'drawn out', and so on' (Stern, 1985, p. 54). This dimension, which Stern calls 'vitality dynamics', although 'hidden in full view' - he says - seems to be the very texture of our experience. The auditory experience and in particular music enable the drawing of our attention to these subtle transmodal bodily rhythms, which in fact are constantly with us.²³

During the turning of attention away from the source towards the heard sound, and then from the heard sound to the felt sound, the effort made to seize and characterise an object is relaxed to make way for an attitude of receptivity and welcome. The process of becoming aware of increasingly deeply pre-reflective dimensions of auditory experience seems to be associated with a gradual loss of intentionality. This loss of intentionality is accompanied by a gradual synchronisation between the space perceived as 'interior' and the space perceived as 'exterior', a synchronisation which makes the distinction between the two spaces more permeable, and can go as far as to dis-

vibration modulated into the clearly heard approach of a high-flying jet airplane some minutes after the first 'felt' detection of its approach. Later we all recognized the transition of 'felt' to 'heard' sound that the jet displayed.' (2007, p. 44)

[22] To take the celebrated example of Merleau-Ponty of the hand which may be touching or touched (for example *Phénoménologie de la perception*, pp. 108-109, *Le visible et l'invisible*, pp. 164-165).

[23] This dimension has also been identified by Werner who called it 'physiognomic' (for example, in Werner, 1956).

solve it completely.²⁴ In other words, the more attention is detached from its absorption in outward objects to enter into contact with the inner experience, the more reduced is the distinction between 'interior' and 'exterior'. When listening becomes fully reflective, it is not listening 'from within' any more.²⁵

In this hypothesis, the three dimensions of the auditory experience would be the phases of a gradual process of obliteration — the source of the sound masks the heard sound which masks the felt sound, together with a reverse process of becoming aware or gradual 'reduction' of the source to the heard sound, and then of heard sound to felt sound.

Let us now turn to the temporality of the *unfolding* of the experience. When a sound is produced, are the various dimensions of the sound — felt sound, heard sound and source of sound — given from the outset? Could they not be considered on the contrary as the successive moments of a process? In this hypothesis, which is suggested to us by the descriptions we have gathered, felt sound would be an early phase of a very rapid and pre-reflective microgenesis, of which only the latest phase — the recognition of the source of the sound — usually appears to reflective consciousness. This early phase is characterised by a less clear, or non-existent, differentiation between sensorial modes, between inward space and outward space, between knowing subject and known object. This phase is very rapidly followed by a differentiation process, which leads to the separation of an 'object' pole — the source of the sound — from a 'subject' pole. This separation is therefore not 'given', but created and maintained moment by moment by a pre-reflective micro-activity, constituted by tiny gestures of identification, recognition, categorisation and appreciation ... of which we have gathered an outline of description. In this perspective (adopted in Petitmengin, 2007), the process of becoming aware previously described would correspond to a process of gaining reflective consciousness not of elements which are given beforehand, but of

[24] 'The music is even so penetrating that my whole body reverberates, and I may find myself absorbed to such a degree that the usual distinction between the senses of inner and outer is virtually obliterated.' (Don Ihde, 2007, p. 76)

[25] We nevertheless use this expression in the title of this article to refer, not to a distinction of a spatial order between and outward world and an inward world separated by the limit of skin, but to a particular perceptual mode. In this we follow E. Behnke: 'The term 'from within', as used here, refers more to a manner of givenness than to a class of givens. (...) 'From within', then, can serve to indicate, not something spatially 'inside' something else, nor even a class of sensations belonging to a single privileged 'object' (e.g., my own lived body), but rather a 'style', 'attitude' or 'approach' that may be manifested in various modes of experience.' (Behnke, 1984, pp. 60-61)

the successive phases of this microgenesis, with each new stage in the reduction corresponding to the recognition of a more primitive phase.

In this context, several of us have sometimes caught a glimpse, particularly at the moment of waking, or when the sound surprised them, or on hearing an unfamiliar sound, of an instant of indifferentiation which is even more primitive: something happens, and for an instant, you don't know who you are, where you are, you don't even know that it is a *sound*. It is just an instant of consciousness which is neither inward nor outward, but which is nevertheless very vivid and clear, and is immediately followed by the unformulated question: 'What's going on? What is it?'

Another question raised by this structure is that of its transposability. Can this threefold structure be transposed from one sense to another? Could it not be a generic structure of perceptive experience? The following interview excerpts suggest for example its transposability from the sense of hearing to that of seeing (and perhaps to the sense of smell).

I rediscover these 3 positions at the visual level: (1) I can look at the trees as trees; (2) I can look at the colours, the nuances of colours. (3) And then I can let the colour come to me, come and impregnate me and wash over me. I stop straining my eyes towards it. I let the colour come, it impregnates me like a perfume. When I remain for a long time in this disposition I have the impression that the limits of my body do not stop at my skin. Sound in this phenomenon, it abolishes the limit between me and the outside. And so does colour. (Claire, forest)

In the following excerpt, Jean realises that he cannot feel inside himself the sounds of the forest, but that on the other hand this experience takes place with colours.

All these sounds remain in my ears without impact on my centre, as though external to me, not really interesting. And I become conscious that what music is, what en-chants me, what chants in me, what comes into my centre which the sounds of nature do not at the moment reach, is the spectacle of the forest. The harmonies are not sonorous, they are visual, coloured. The symphony here is almost silent, made of multiple greens, intense yellows, flamboyant ochres. (...) this musty odour, of forest mushrooms, combined with this admirable palette of colours. And it is towards this that my centre is open, it is with this that it is filled. (Jean, forest)

It is interesting to note that during his exploration of inner experience using the DES method, Hurlburt ('Sensory awareness', this issue) has noted many spontaneous descriptions of a phenomenon of focusing of

the attention on the sound as a sound, which corresponds to the dimension of the experience we have termed ‘heard sound’ :

Carol’s friend Candy is telling Carol how to log into a computer web site. Carol is paying attention to the sweetly longish *a* sound in Candy’s slight drawl; at that moment, Carol is not paying attention to what Candy is saying about the log-in procedure.

Stella was on the phone with her father, who was screaming at her. Instead of hearing what her father was screaming, she was noticing the distortion of the sound as the speaker was being overdriven by the screams.

These excerpts illustrate the auditory version of an experience which Hurlburt has identified in all sensorial modes, an experience which ‘involves the individual’s being immersed in the experience of a particular sensory aspect of his or her external or internal environment without particular regard for the instrumental aim or perceptual objectness’, and which he terms ‘sensory awareness’.

This threefold structure of auditory experience is a hypothesis based on the descriptions we have gathered, which itself suggests further hypotheses. How can this set of hypotheses be tested, that is how can observations or experiments be devised which would enable them to become verifiable or falsifiable? The first possible path is to continue the work of description we have begun, for which this set of hypotheses and questions constitutes a fertile heuristic framework:²⁶ (1) by refining the description of the auditory experience in its various temporal unfoldings;²⁷ (2) by varying the experience and interview conditions: evoked experience freely chosen by the subject, experience immediately preceding a ‘beep’ as in the DES method, or experience carried out following a detailed protocol just before the interview; (3) by varying the type and level of expertise of the interviewees in the fields of music, meditation, etc.

The second possible path forward consists of creating a ‘virtuous circle’ of mutual enrichment and refinement of the 1st person analyses of the auditory experience and 3rd person studies of hearing. One way of doing this would be to use the experiential variables we have identified as neuro-physiological analysis criteria: for example, looking for the neuronal signature of the three attentional dispositions detected.

[26] ‘The phenomena do not just ‘speak out’ themselves - they ‘speak to’ a question addressed to them.’ (Ihde, 2007, p. 219)

[27] For example, the awareness of the dynamic of the auditory experience may be facilitated by devising ‘experiential procedures’ to disrupt or interrupt the process (such as listening to unfamiliar sounds). This type of procedure has similarities with the genetic realization method (*Aktualgenese*) devised by H. Werner (1956) and his successors to obtain a description of the early phases of a perception, which are usually hidden by its later phases.

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Conclusion

What do we know about what it is like to hear a sound? Actually very little. Each stage of the reduction unveils an even more unnoticed dimension. The vastness of what a little sound may reveal is an inexhaustible wonder.

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