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Keynote

Sound and Gesture

Abstract

The sound generated by bodily gesture holds in itself the intention that preceded its production, and constitutes in some way the evidence of an action that has occurred. The nature of the sound of an object that is placed on a surface reveals the purpose that led to that gesture: violence, for instance, or clumsiness. What is perceived and conveys meaning is the primary intent that is carried in the sound. This is - such as the timbre of the voice - an important clue for the interpretation of hidden meaning by the listener. These elements are at the heart of sound itself. The desire to listen is born out of surprise, which in turn originates from a sense of rupture and depends on the conditions under which discontinuity operates. It is this lack of continuity that captures our attention, and it is rupture that triggers the need to understand what has just occurred. This is precisely one of the driving forces behind the reactivation of our listening. Furthermore, what is really important in terms of listening is not what is defined but rather what is uncertain. It is the degree of uncertainty that triggers our attention. Our listening is constructed in proportion to its incompleteness. If what is offered is excessive, this will only arouse a fleeting interest. Any element that is clearly perceived and understood is immediately superseded, owing to our 'survival instinct', which necessarily intervenes so as to engage any subsequent event. Listening opts first for what is suggested rather than what is offered. All this naturally complies with the safeguarding of our libido, and indeed, how could it be otherwise? We all know that we no longer desire, and quickly abandon, what we are too sure of possessing.

Experience: Drawing as Gesture

In 1994 I was invited to teach sound practice to visual artists at the Fine Arts School in Paris (École de Beaux-Arts). I was asked to teach these students in the same way I used to at the Drama School in Lyon (ENSATT - École Nationale Supérieure des Arts et Techniques du Théâtre). I replied that it would be impossible for me to do it without taking into account the specificity of the visual arts. Then I understood that what the School Director was asking me was, like in theatre, to bring into focus the sound mise-en-scène. I suppose that he must have been given this impression from what he heard me saying about my teaching experience in theatre, in particular the fact that I wasn't happy to use sound to simply underline the drama work.

In fact, what truly interested me was to be at the centre of the 'plastic' experience. To be more precise, to be at the heart of the interrelation between material and artistic gesture,

and make these students aware of an aspect that is, after all, at the essence of their own practice. This was an area that I didn't know well (the field of visual arts) but where I felt able of pursuing, alongside these students, an approach that aimed at grasping the aural dimension.

I was soon going to be confronted with an unexpected opportunity that would allow me to take further my intent. In 1995 a student came to see me and said 'I would like to attend your sound workshop but the only thing that I am able to do is to draw'. This appered to me as the opportunity to seize. I replied that this seemed more than enough for me, and that it was indeed a chance to be able to start off from drawing, which is at the very core of the visual arts practice.

Drawing is the realm of trace - trace in the sense of, for example, a pencil stroke on paper - and I could not prevent myself of linking this to the fact that every sound is produced by impact or friction. Assuming that trace is based on friction, we developed the following experience: we began by listening to the sound made by various drawing tools such as pencil, charcoal, different brushes, and an inkless metal pen. Then we looked into aspects that were related to the quality of the paper, such as grain, texture or thickness, and compared it to canvas, plastic and glass. We quickly realised that the material on which we were working acted as a resonator or acoustic amplifier. At that point, we had the idea of working on large, well-stretched canvases, or on wooden or metallic tables that were reasonably heavy. The sound was recorded on multitracking (this was at the advent of computer recording software), and we used a quadraphonic recording system that I had put in place.

I suddenly realised that, despite the utensils that were used to draw, what was truly audible was the gesture itself. Even if we changed the drawing tool or the material on which the friction was being produced, the main aspect that remained was a repetition of the same gesture. Undeniably, sound is above all the sound of gesture. The student's movements were too simple and predictable, so I challenged him to draw with his left hand in order to overcome any automatisms. I asked him to draw small-sized figures that would be enlarged (amplified) - as it is frequently done with images - and this should allow for a new dimension to emerge, based on the thickness of the stroke.

We decided to play those sounds through the four speakers that had been placed on the floor, at each corner of the room where we were working. The amplification was particularly rewarding. I quickly realised that the visual image would slowly form itself by the overlaying

of various strokes, and that one trace could continue another to create a figure. However, in what concerned the recording things did not work this way: the various strokes seemed to come in a succession, one after the other. This was obviously due to the fact that a recording is based on a temporal progression. I tried to imagine what would be to reassemble these sounds and be able to listen to all of them together within a defined time frame. As a result, I had to find the average time of mnemonic persistence that would be necessary to maintain a recollection of the start of the event. I understood that such duration depended mainly on the number of events that had occurred during that time lapse: the greater the profusion of events involved in the stroke, the shorter the time during which we would be able to recall it. After having defined a short duration frame, I tried to render more perceptible the sound of simultaneous strokes by placing another four speakers at the corners of the ceiling. We now had eight speakers positioned in a cubic layout. We worked on both these projection planes, the ceiling and the floor, which allowed us to easily differentiate the progression of two simultaneous strokes. I suddenly realised that eight speakers positioned in such a manner did not just determine two but rather ten projection planes, if we consider the rim plus the diagonals.

We had built, without being fully aware, a magnificent sound projection device: a machine for sketching virtual figures. Consequently, I understood that it was not necessary to draw using tools that produced visual traces, so we started to develop a panoply of tools that only produced aural traces. We started by sending a jet of air through a straw on sand or water, and created bubbles on thick liquids such as oil, jam or porridge. We increased the jet pressure and then we changed the movements made with those tools. This was followed by the sliding of objects on the ground, and the spillage of sand, liquid or waste. It became clear that there was a complementary nature involved in the choice of the material and the type of gesture, and between the capture distance and the motion of the capturing device.

I understood that the placement of sounds in space, by increasing the volume through multitracking - rather than by doing just a rough mixing - changed the facts: we were now facing a sense of monumentality, in a sculptural dimension, and going towards an architecture of sound. Still, we remained at the centre of the visual arts practice, and not collage. Even more than in the work of Tinguely, we were in control of an object that remained ontologically specific to the domain of the plastic arts. I believe that such a retun to the essence of the factuality of the pair ‘gesture and tool’ enabled me to discover the

reason why sound should be brought into this realm. The student did not truly understand the scope of our approach but from that moment onwards I felt able to do anything. Sound had definitely a place in the visual arts and I had found the roots.

A second experience, with another student, made me progress somewhat further. She worked on video. She had filmed a sequence based on fluid motion and was in search of a sound counterpart to the flow of her visual material. The student worked hard, and every week we would listen to the result but this turned out to be always dispappointing. To try solving this dilemma I decided to replace her but it was all in vain. Like her, I was unable to find a solution. All the sonic material that we created seemed inadequate, and the sound/image fusion we were wishing for would not materialise.

By pure chance, I picked up a cardboard pipe that I found in the room. It was about the same size as a scuba diving mask and could contain both my eyes. When I held it against the screen I was surprised to realise that, all of a sudden, the sounds became wonderfully connected to the images. At that point I understood that the issue was not coming from the image itself, or from the nature of the accompanying sound: a further dimension should be taken into account, and this implied finding the right connection between these two elements. It is the nature of this link that allows fusion to take place. We now had the feeling of being immersed, of 'swimming' in this liquid matter that was coming in and out of our visual field. The sound became our environment and therefore provided an adequate ground for the partial viewing of our gaze.

The issue of installing sound and images, or other objects, in space became manifest through this experience. The link between sound and image was determined by the manner in which the perceiving bodies were placed. The listening conditions became for me an aspect that was closely related to the nature of the sound diffusion, the placement of the sound sources and the loudness. These elements were the variables that, through their interaction, determined and reorganised the viewing conditions.

The period I spent at the École de Beaux-Arts was a time for countless discoveries that, at each time, drove me further towards the essence of the sound mise-en-scène.

Listening, A Sense of Touch

The sound generated by bodily gesture holds in itself the intention that preceded its production, and constitutes in some way the evidence of an action that has occurred. The

nature of the sound of an object that is placed on a surface reveals the purpose that led to that gesture: violence, for instance, or clumsiness. What is perceived and conveys meaning is the primary intent that is carried in the sound. This is - such as the timbre of the voice - an important clue for the interpretation of hidden meaning by the listener.

These elements are at the heart of sound itself. They persist in it as a sort of internal movement that is intrinsic to sound's own materiality. The perception of such sounds unconsciously awakes in us memories of déjà-vu, and this often induces prompt bodily reactions. Gesture responds to what is heard; we do it unconsciously and without any delay - and even when the ensuing protective gesture is not produced, the neural network that could steer such a response is already connected and ready to react appropriately (Berthoz 2008, p. 65).

The notion of inner movement - a subjective representation - is both the result and the cause of an infinite number of particular situations. The inner movement can remain in us merely at a sensorial level and never transform itself onto a gesture taking the form of outward expression. This movement is a driving force and most often it is the result of a desire to act. Such desire is itself fostered by the external perception that preceded it. However, this movement can equally be a direct response; and by this I mean a 'pure reflex' that is not the fruit of any type of analysis of the situation. For example, this is what the study of the function of mirror neurons has taught us. This movement can also be a place of sharing that brings together those who make the sound (musical or not) or the gesture, and those who receive it. The body emits flows. However, these flows initiate inner movements that do not always lead to specific actions; Berthoz tells us that to listen is to act but this does not necessarily mean that a response will take place (2008, p. 12).

An imaginary movement is like a catalyst that strives to reach its completion through a specific gesture. An orchestra conductor or a dancer, are typical examples of people who produce visible gestures which are part of a system of gestural impulses that emanate from a desire to produce meaning. All those who work with their own body - carpenters, ironware craftsmen, road workers and reapers - know what it is that drives the breadth of their gestures. This is equally true of dentists or surgeons whose gestures are smaller and finer. We all share this sense of inner movement which accompanies the desire to produce external motion outside of our body, and that is based on what has been conceived within us. This inner motion is developed from a desire that is often born out of an idea.

Incidentally, could this be the physical essence of every movement - including the act of listening - that happens at an unconscious level? (I will come back to this later). I am thinking here that when we listen we are often unware that we are doing it. It is also collectively, in festive gatherings, that this kind of motion seems to arise from these shared moments as a sort of necessity: the need to exhaust our bodies - and here I am referring to *The Accursed Share* (*La part maudite*) by Georges Bataille (Ed de Minuit, 2011) - because gesture arises from pure expenditure. It can often be excessive and created by exaggerated emotions, rendering the resulting movement clearly approximate.

I would like to confront these considerations with the reality of the practices that are implemented by the industries dealing creatively with sound. This does not concern exclusively the film or the music industry, but all artistic fields.

The Components and Their Variability

Rather than approaching directly the topic of sound production, it seems interesting to focus on its basic components, the various elements on which every production is based: **material**, **gesture**, and **space**. I should add here that the production procedures dispute the vitality and richness of these elements, and their ability to induce sensorial stimulation.

By procedure (or protocol) I am referring to the successive stages in the evolution of a project that correspond to automatic steps, inferred developments, and operational means conceived by procedural agreements in order to reach a calibrated result in a more or less definite way.

This succession of operations prevents the access to a vast palette of sensorial possibilites that should be made available in any creative endeavour. The procedures themselves, which regulate all the operations involving sound, are not even apparent to those who use them, so ingrained have they become in their everyday habits. The primary reason for this, of course, is that production needs to be swift owing to financial considerations. The second reason is that in any creative process, there are so many variables on the gounds of artistic uncertainty that the daily routine mentioned above represents a welcome haven of certitude and reliability. This is why these procedures are very rarely questioned. Consequently, asking ‘how do we do this?’ in view of the elaboration of new forms is hardly ever asked. The implementation of such production procedures concerns primarily the more technical sectors but they also tend to pervade the creative realm: we often hear people

saying ‘we should use a certain type of loudspeaker’, or ‘we should record sound in a certain way’… not only in the theatre but also in recording studios and in sound design departments.

Contrary to what one might presume, such procedures do not concern exclusively technical operations. Each step leading to the production of a work of art - because it is art that we are talking about here - from preparation to completion must be questioned in this regard. To consider the act of creation from a historical viewpoint, by listening for example to old radio productions, would enable a better understanding of how practice has evolved. Looking retrospectively into history allows us put into perspective and to perceive things that are not so readily apparent in a contemporary context.

The history of practice in connection with that of technology would also unveil other aspects regarding the evolution of sound writing, although it would be necessary to take a closer look in order to obtain a clearer understanding of how the production style has progressed.

If both ends of the production chain seem important, the middle part is just as crucial. In what concerns radio drama for instance, what could be the cause for the apparent disenchantment, and hence the lack of interest, of the listeners? The type of staging/mise-en-scène? The small number of directors? The stagnation of the studios? Lifeless sound recordings? Writers who are no longer able to stir their actors?

How could we revive the desire to listen? I would like to return here to the fundamentals of sound writing and try to demonstrate that the points mentioned above represent variables that are not difficult to reinstate.

Restoring the Conditions for the Existence of Wealth and Diversity in Sound Assembling

The properties of sounds depend primarily on their production conditions and manipulation. I am using here the plural form to bring out the idea of diversity:

- The diversity of sound colour in the acoustic spaces of the mise-en-scène;
- The diversity of positioning for both the sound sources and the capture equipment used in these different spaces;
- The diversity of the movements made by the sound sources themselves: in film the gestures are really carried out, for example speaking while working, or walking, has an expressive effect on the voice that denotes a body at work or in movement.

- The variety of movements made by the sound recording equipment: the boom microphone, for example, makes it possible to hear acoustic variations that are due to the physical motion occuring in the spatial environment.

Cinema is always reminding us that the distance at which sound is captured is constantly varying, by adapting it to the framing of the image. The concept of cutting and editing during, and even before shooting is a variable that radio should adopt. Similarly, it is necessary to define the physical movements in order to allow the voices to be emitted. Behind each voice there is a body, and the body changes timbre depending on the positions it adopts. What we hear behind a voice is a body in motion, and behind these movements, feelings can be perceived - and it is because such sounds inevitably refer back to the body through our own memory, that just any recording cannot be acceptable.

The flat post-synchronization of television serials, done with motionless actors in front of a microphone, immediately reminds us of how boring such a set-up can be. Without the visuals, listening to these detached voices would be quite unbearable.

The Meaning of Sound Capture

Recording sound is generally considered to be a neutral act, a sort of protocol that captures objectively the sound being produced. However, we tend to forget that what the microphone picks up is not truly representative of what we hear. The recording offers us far more data than what is heard in reality. Through our sense of spatial listening we are able to filter out the sonic chaos of the world that we inhabit. We also tend to forget that the 'sound image' reproduced by loudspeakers prevents our brain of making the selection that would have naturally been done in a real-life situation.

When we listen to recorded sound, there is a loss of that wonderful freedom that we enjoy when we are listening directly to the world around us, and which allows each listener to select from the environment what he or she wishes to hear. Instead, there is a sort of constructed continuity that makes our temporal perception resemble that of a clock. However, our perception is rather fragmented, and is produced by instantaneous samplings and withdrawals. It presupposes the freedom to let our listening wander around, taking and selecting at any given moment only what we wish to hear. Conversely, the recording of street sounds, for example, is a continual flow of fixed sonic events that reflects the choice

dictated by the microphone's placement. Such a relentless flow of events bears no relationship to our subconscious way of listening, which is non-continuous and subjective, and is constantly selecting what it wants to hear and leaving out what it considers to be of no interest.

The recording appears thus as a whole, as an entire slice of reality that presents itself as an absolute and all-encompassing value, along with the obligation to listen to the whole 'package'. Consequently, and in order to be able to create with sound, it is necessary to discard the excess that is offered to the microphone. It is therefore crucial to select and organise the recorded material in order to strip down the sound continuum to what is truly essential.

Sound is meant to affect us, and not merely to communicate words that express a certain feeling. Sounds can produce sensations even before producing meaning, so it is through our senses that the meaning can reach us.

When we listen to sound, we can perceive a certain 'plasticity' which is both related to the materiality of the sounding object and the nature of the event that makes it audible. This event can be a simple gesture, or the result of a natural element such as wind or rain. The sound of ripe wheat blown by the wind tells me as much about the malleability of the plant as it does about the flow of the wind. I can feel it in my body, conveyed through my ears, just as I would feel it on my skin if I were out in the field. Sometimes we say 'your voice touches me', and this is because the senses of hearing and touch share a similar space of fleeting perception.

Let us come back to sound recording: this act implies the desire to be heard and to designate, and it certainly is related to the ability to make a voluntary choice. To record sound means to lay designated objects on a medium, and from this viewpoint we can say that it is equivalent to writing.

By its ability to capture a fleeting moment photography draws our attention to its variables: axis, distance, lighting, depth of field. Sound recording should use this as a model not only to make sounds 'visible' but also to create a vocabulary of montage that could be adapted to each work. A lexicon of sound recording must be specific. Sound capture becomes lifeless if it claims to be 'neutral'. There is no such thing as a neutral presentation – it simply does not exist. Any approach that consists of rendering neutral an artistic production always harms it. Painting and photography, both figurative arts that can freeze

time, made it possible for cinema to understand how to construct an image amidst a series of differing viewpoints.

In its early days, cinema found itself constrained to join end to end the excessively short reels of film which manufacturers were able to produce, making it impossible to film an entire theatrical act in continuity. In this way, film makers were forced to invent not only editing but also the continuity cut (axial cut) in order to bridge the transition from one reel to the next - in other words, this temporal ellipsis corresponded to the time required to change the reel. In this way, and due to the change of axis, the spectator could 'forget' the position occupied by the characters in the preceding take.

The problem with sound is precisely the opposite: any gap can be bridged too easily. Even if editing takes place in the same axis, this will not be heard. Unlike image, there is no visible motion jumping in the characters' faces or bodies. Therefore sound does not have to worry about cuts in space or changes in axis, even if this could provide a good opportunity to invent new kinds of transitions that could contribute to revive listening.

Sound emerges in us in the form of homogeneous spaces. In compliance with our basic need to spare our energy, our imagination produces within us a continuous performance space. I would like to refer here to the recent work of Alain Berthoz, professor at the Collège de France, and in particular the book *La simplexité* (2009).

The desire to listen is born out of surprise, which in turn originates from a sense of rupture and depends on the conditions under which discontinuity operates. It is this lack of continuity that captures our attention, and it is rupture that triggers the need to understand what has just occurred. This is precisely one of the driving forces behind the reactivation of our listening.

Furthermore, what is really important in terms of listening is not what is defined but rather what is uncertain. It is the degree of uncertainty that triggers our attention. Our listening is constructed in proportion to its incompleteness. If what is offered is excessive, this will only arouse a fleeting interest. Any element that is clearly perceived and understood is immediately superseded, owing to our 'survival instinct', which necessarily intervenes so as to engage any subsequent event. Listening opts first for what is suggested rather than what is offered. All this naturally complies with the safeguarding of our libido, and indeed, how could it be otherwise? We all know that we no longer desire, and quickly abandon, what we are too sure of possessing.

What sound recording must do is to enact situations, to promote physical confontation. What I wish to hear in a recording - and in the details of the actions made available by sound production - is the quality of the desire to share that is brought into play. The slightest movement triggered by hesitation, or on the contrary by certainty, will nourish the quality of the sensation, regardless of coming from a voice, an object, or even the microphone that is capturing the sound. These seemingly minor details are at the heart of what is truly at stake when we listen.

Space and Staging

In the same way, the complexities and wealth of acoustic spaces are essential variables in terms of our listening tension. The plethora of diversity and detail conveyed by a physical movement that occurs in the intricacy of an acoustic space is one of the driving forces behind listening.

A sound that seems inadequate in relation to its normal environment can attract attention even if this is only an element of mise-en-scène. Placing sound events in unexpected spaces can be quite surprising, especially when the unsuitability of such spaces is not directly perceived. Even if there is a clear perception that something unusual is happening, the listener might not be able to attribute it to one particular element. For example, listening to the sound of a motor scooter within the acoustics of a church is certainly an association that will not go unnoticed. All of a sudden we feel the need to reinterpret each of the elements at play but, above all, we question the reason behind such a confrontation.

The acoustics of an indistinct space do not remain for long in our memory. Our listening aptitude will quickly fade away. If we choose to place the elements at play, or the sound capture device, at the threshold of two different spaces this will make them appear in direct juxtaposition, and thus persist in our consciousness. What is primarily perceived is the moment of rupture in space, the passage from one acoustic space to another. The most perceivable location is therefore at the threshold separating or uniting the two spaces. In this way, we become aware of the differences in quality between those two spaces, both in terms of volume and construction material. When bodies in motion, or any sound-producing objects, are confronted with a particular volume, the sound of their actions (or movements) is perceived differently and reinterpreted in relation to the acoustics of the space.

The neutralisation of acoustics is not devoid of interest but it will function better if it corresponds to a specific requirement to create a space depleted of sound as, for instance, in the plays of Samuel Beckett. The studio as a neutral space makes it possible to eliminate the intrusive background noise that we find too often in the real world. However its lack of presence as a sound space can be a limiting factor to the expression of sound creativity. We should therefore consider other quiet spaces that have a more vibrant acoustics than a studio, and that could provide a livelier sound environment. The complexity of such spaces, due to their architectural diversity, can enable a succession of flexible, vivid and ever-changing situations that can bring back a sense of surprise to the listener - for the time being, convolution reverb has not yet reached a standard of quality similar to reality.

We are all aware of this, at least intuitively. However, we must keep it in mind at all moments of our activity - and despite the job position that we occupy - in order to make available to the listener the most desirable element of all: the perception of liveliness.

The Tool Vs. the Hand

To what extent might new tools aid us in preserving the sense of touch that is essential to the sharing of our sensitivity? Few shortcuts are possible between thought and gesture: it is always the body, or that of another, that will execute - even by an indirect path - the gesture that is originated in thought. There is no shortcut between thought and action.

A trace, resulting from a specific desire, becomes apparent - just as a sound is the trace of the intention at the origin of the gesture that produced such sound. That gesture is deeply rooted in the materiality of sound. We have fully grasped it: what is really crucial in the perception of a sound is the intention being conveyed, and this is the foundation for any meaning carried by such event. If the sound-object seems to carry meaning, this derives from the intention of the gesture that drives it. The intonation in the human voice is a clear example of this.

When I hear an action, this has already been controlled by the ear of the person who produced it. A carpenter uses his hearing to measure the force needed to hammer a nail into a piece of wood. It is the sound that he produces, and which he hears, that enables him to measure his next gesture. His own ear is the regulator of this inner movement via feedback. It is by listening to the sound produced by the hammering of the nail that he is able to adjust the strength of his gesture.

This inner movement is not necessarily at the root of sound. The sound originates on the outside, the place that nurtures all desires, in the same way as the silence of another person impels me to respond. It is between perception and affect, together with a desire to reply that such response emerges – but it is always adjusted.

Regarding the order of priorities of our perception, when a glass is put on a table, at first we don't get the impression that the sound produced by the glass conveys the meaning of the object that it represents. This is equally true for the table that is hit by the glass. What becomes apparent in the first place, is the relationship created by the glass/table association that is perceived in the gesture. The only real sound is the sound that is born out of an inner movement. Anyway, it seems clear that the material existence of an intention is situated outside the body: this appears to be, in fact, the only place where such an event exists. Otherwise how could we deem, for example, clumsiness, a missed punch, stumbling and falling, or missing a target?

What kind of gesture has brought together the glass and the table in order to produce that sound, and what was the prevailing intention? The event that led to placing the glass on the table in a slightly violently manner will be the first aspect to be perceived behind the sound: a sound that will only secondarily appear as the sound of a glass because the gesture – which could have been made on any other object – expresses, in the first instance, anger. What is first heard is the sense of exasperation. However, for those of us who work in sound or are stage directors, it is at the moment of fracture that the sound becomes meaningful.

Therefore, it is exactly at this point that we should question the nature of the sounds that are juxtaposed to cinematic images - what kind of material should we choose: Foley sounds, an isolated sound event, or a sound library… since they do not contain the same gesture or, sometimes, even no gesture at all. I should listen carefully to the nature of the touch that is reaching me, since it's unbearable to be touched in just any way. It is at this stage that my connection to others starts to materialise. Gentleness, tenderness or violence begin here and will gain my body through gesture: via sound as air displacement, by traversing the ear. An initial inner pressure coming from a sound-producing body (emitter) will lead to a final inner pressure in another body (receiver).

To place oneself on the tactile realm is to dispose the conditions under which such a contact can occur. To establish a space of contact is to create an environment where bodies can be placed. We must question the function of a loudspeaker, and examine the

scenography of space. The touching space is the place for body-to-body interaction, and it is exactly at this point that the sensorial is shared and art can emerge.

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