

# **Tactility, Traces and Code**

Towards a genealogic-problematic conception  
of sound composition

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## **Abstract**

Whenever a sound is heard not only its physical form is apprehended but a series of implications like the constitution of a spatial impression, the trace of embodied experiences involved in the sound and memories of associated sounds and understandings. These aspects condition the way we experience sound.

Within the realm of electronic sound, these implications involve qualities embedded in the chain of its production: particular technological characteristics and material conditions as well as contexts and practices developed within a society populated by electronic media.

Along the scope of this thesis a perspective is proposed which assesses sound comprehension as an event multiply determined by these aspects. A proposal for structuring sound composition on the problematization of this comprehension is developed.

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# 1. Introduction

The term *sound composition* conveys the idea of the composition of sound itself. While from a different, more vague point of view it could refer to an idea of composing *with* sound, which links to a traditional image of instrumental composition as the arranging of sound materials given a priori, sound composition strongly suggests the possibility of constructing the sound itself. This conception is tied to the experience of electronic sound manipulation, in a way which nowadays has already become quite naturalized.

This way of conceiving composition raises questions, not only regarding the diverse strategies to technically accomplish the composition of sound, but also on regarding the stance from where this practice is to be approached. This radical expansion of possibilities and radically different point of start from the traditional model of instrumental composition has imposed significantly new situations and challenges along its history. What are the objectives guiding the composition of sound, what criteria should be followed to conceive it.

The genealogic-problematic conception I intend to develop appraises sound comprehension as traversed by a multiplicity of instances and perspectives embedded in specific cultural circumstances.

Dealing with sound composition means to me, within this proposal, composing with the comprehension of sound. In our media populated age this means acknowledging comprehension as immersed in the complex configurations of mutable media contexts.

I start from claiming that, besides expanding the timbral horizon, working with electronic sound poses a new relationship with the codification process in our comprehension of sound.

Within our media age, the distinction between a musical sound and one which is not has become a blurred one. It is not still a clearly given one. Beside aesthetical concerns and more or less radical points of view, almost any kind of sound is present nowadays in media. This stems from the immense expansion of broadcasting situations which reproduce sound

recorded in a myriad of places, and which gets multiplied in a myriad of forms, as well as from the naturalization in the use of synthesis technologies and signal processing procedures in popular musics and massive audio culture. The codification process is thus more intricate and complex.

Electronically produced sound involves a range of referential layers specific and differentiated from purely acoustic sound. The range of conditions involved in electronic sound include, among others, the technological characteristics of the equipment used to produce the sound, the spatial imprint defined by a source location or a synthesis procedure, the spatial imprint of the reproduction technology, the set of aesthetical decisions involved in the process of production (for instance a kind of compression used, a recording strategy or particular synthesis tools). Besides, inhabiting a reality of mass media, it involves links to uses within a very complex network of electronic sound media and diverse social uses (diverse timbral characteristics attached to particular aesthetics, particular context and institutions like public announcement, radio, TV).

We relate to electronically produced sound involving our own threads of references and embodied patterns, our previous experiences and appraisals. As much as we could have related to a certain chord progression pertaining to a specifically codified music style or use, we tie specific timbral characteristics to specific uses. Our relationship with the timbral has changed as the amount of codification and traces involved in our experience of sound has widened since the advent of electronic media.

This becomes the material of the approach I intend to develop. The *Genealogic-problematic* conception assumes sound comprehension as determined by multiple instances.

The first three chapters in this thesis develop on particular perspectives which account for diverse aspects of sound's apprehension.

In Chapter 1, I account for the emergence of a focus on a tactile understanding of sound apprehension within certain practices of electronic music in the last 20 years. This perspective sets up a possible approach to sound experience which opens a direction into a non-figural kind of sound organisation.

In Chapter 2, I develop on the significance of traces for defining an experience of timbre. Timbre is constituted then on processual instances rather than as an abstraction of qualities from substances.

In Chapter 3, I elaborate on how the codification of sound experience is an integral part of its role within music history and how this implies different perspectives into the role and understanding of composing sound.

In the last chapter I propose the basis for a genealogic-problematic perspective towards composition as based on a certain understanding of our relationship to sound. I relate to how the first three chapters lay the tools for a particular assessment and put forward the basis for a compositional strategy that problematizes sound comprehension.



## 2. Tactility

### 2.1 Development of a tactile focus

In the past 15 years the category of the tactile has become prominent as an apt description of significant approaches to sound within electronic music production. This particular perspective has traversed specific genres like Glitch and Microsound, but has also been important in areas of free improvised music involving electroacoustic devices, sound art and beyond.

The tactile is in this perspective conceived as a mode of understanding sound's apprehension, rather than being tied to an emphasis in the kinaesthetic experience of manipulation involved in the process of production of the sound, which could be exemplified as a tactility "presented by sounds that seem to be manipulated or played with" (Barreiro 2010)

This tactile perspective is enhanced in the above mentioned practices through a suspension of a sound gestural discourse. It comes through on the deployment of static sounds, developing a particular focus on their iterative inner structure. It renders the tactile, at first instance, as modelled on the experience of the touch of a surface. Notions like "grain" or "amplified texture" are recurrent in these musics, linked as well to a conceptualization of sound as "sound matter", as could be read from quotes like: "Sounds crackle and fizz as they make contact, their jostling edges producing emissions of sound particles that aren't so much heard as witnessed via the constantly displaced perspective of the ear" (Whitelaw 2003). (See Appendix / accompanying CD, *Chapter\_1* folder for some examples of these practices)

This approach can be considered as a first step towards a possible organisation of sound which diverges from what could be considered as a figural organization of sound. At first instance, a figural understanding of sound relationships gives pre-eminence to comprehending sound as organised in singular objects identified by a particular morphology, whose organisation rationale arises from contrasting and relating these

specific morphologies and durations. The tactile approach shifts towards a perspective in which objectual-kind morphologies and beginning-and-end markers become secondary, prioritizing the emphasis on relationships between diverse types of globally static, iterative sound-structures.

## 2.2 Technological consciousness

Along these practices it can be observed that the tactile focus, though affected by certain technological innovations, has been more the result of a shift in perspective than the sole result of a particular technological innovation.

The genre known as Microsound portrays within the constitution of its own name a particular crystallization of a shift in the focus of attention. Conceived originally within technical circles as the reference to a specific sound synthesis strategy involving micro-time level operations, “the use of the smallest elementary particles of sound to build compositions” (Demmers 2010), the name was later appropriated by an aesthetic trend which took the “micro” in microsound not as referring to this approach to sound synthesis, but as a specific description of the kind of sounds that were being focused and used as primary material. The Microsound genre goes beyond the use of a particular technique, and names itself out of a concern on the microscopic and the “most minimal particles of material” (Demmers). It builds on a particular focus in sound “matter” as understood through the experience of a metaphorical “magnification” of sound, and deploys its discourse on a strategy that could be labelled as minimal in which the “micro” refers as well to an intended hearing attitude, to a focus on the enhancement of minimal differences.

Phil Thomson traces in his article “Atoms and errors” (Thomson 2004) the process of displacements from the origins of microsound as a technique into its infusion in particular aesthetic concerns. The term continues its cultural migration, furthermore overflowing the limits of the genre to become a signpost of common usage in diverse areas of electronic sound production, experimental as well as popular. This perspective overlaps with the genre of *Glitch*, which states as point of aural origin the “‘skipping’ CD of Oval” (Whitelaw 2003) and afterwards deploys the already well-known array of digital *failure* and *cracked* sounds,

in that they bring forward a similar kind of attention to minimal constituents in sound.

Though, where trends like Glitch based its identity on emphasizing a very narrow range of sound material, other practices have actually been fundamentally characterised by the inclusion of a very wide variety of technologies within this tactile perspective.

Free improvised music has been a case where appropriation of technologies and strategies regardless of their diversity and origin has been priority. Among these it is possible to count resources like: circuit-bending, lo-fi electronics (from the development of original devices up to the recycling of home-oriented devices), contact microphones (applied to everyday objects, surfaces or instrumental), loudspeakers used as physical sources of vibration, unconventional exploration of turntables, historical sound reproducer devices from tape machines up to early digital devices, and also the use of state-of-the-art digital processing strategies through portable computers involving software which includes delay-loop processes, conventional synthesis tools, granular synthesis and others. (Sherman)

This horizontal pairing of diverse technologies has proven to be more fundamental in this case than a criteria of technological innovation, highlighting the significance of a particular reassessment of these inherited devices. This diversity can be exemplified in the multiplicity of directions of diverse cases, like, just to give a few examples: the quasi drone characteristics of Rowe/Ambarchi/SachikoM/Yoshihide/Avenaim's "Thumb", the digital loop strategy of Kahn/Dieb13/Thomas Korber's "Zirkadia", the palpable investigation of lo-fi electric devices and turntables of Martin Tetreault and Kevin Drumm in "Particles and Smears" or the austere investigation of amplified surfaces of Akiyama/Nakamura/Sugimoto/Wastell in a record like "Foldings".

The multiplicity of technological resources involved reveals a newly acquired consciousness of technological history. It is through the lens of this highly technologized, digital culture that a conscious look can be taken on the diverseness of tools and devices of its history. In itself this radical digital expansion has been the responsible of having the whole history of 20th century technology "under our hands". The whole multiplicity of devices and strategies has arisen to a shared surface. The massiveness of the information enhances new ways of valuing the material.

Each technology is assessed as being involved in determining specific results and is heightened in value as their own “truths” become the chain of events that determine the evolution of particular technological standpoints and render particularly identifiable results. When placed next to each other in a horizontal, virtual grid, its multiplicity acquires a foreground character. Attachment to subjects and objects loses pre-eminence in favour of the possibility of shifting modes of sound production without a substantial effort, and thus being able to expose the inner differences in the process of sound production of each technology. This shift becomes of considerable importance within an aesthetics which seems to enhance the conditions created by each technology rather than emphasizing them as mediums of expression of a human will.

### **2.3 Media qualities in perception**

A considerable predecessor in the development of the strategy of suspension of a gestural articulation in the use of electronics can be found in the development of a loop-based strategy in “ambient music” as it started in the 1970’s. This landmark was responsible for imposing a certain way of dealing with electronic sound strongly deployed later in experimental and popular areas.

Even though the technological resources existed from long before (delay-loop systems) and very diverse strategies of repetitive based musics can be found back in ancient times and even cultures, the expansion of this practice implied a meaningful influence on the basis of development of many electronic trends and probably in seeding particular approaches to sound organisation. The delay-loop strategy as it developed on these lines implied a step into a suspension of figural discursivity which opened up a “near-physical shifting of [...] perceptions” (Siepman 2010) within the experience of electronic sound, specially within the areas of non-institutionalized practice. Its significant aspect was probably that it developed a loop-based music oriented towards a material focus in sound, which enhanced diverse aspects of its timbral content, rather than driving the repetitive strategy into objectives beyond the sound.

“The development of the microscope in the seventeenth century allowed the extension of

the powers of the eye into regions and dimensions that had previously been unavailable to it, but in provoking a new sensitivity to the swarming surfaces of things, it also extended or rarefied the sense of touch” (Connor 2004). Similarly, the tactile focus in sound arises at a time in which digital technology allows us to get into the “microscopic” aspect of sound. The radical expansion in signal processing capabilities has brought the minuscule aspect in the manipulation of sound to levels of concretion which haven’t been possible before. It has pushed towards an unprecedented experience of timbre handling. This experience has probably influenced the concretization of a shift in sensitivity towards a tactile conceptualization of timbre, towards a conceptualization of timbre as tied to a graspable concept of matter as opposed to a conceptualization of timbre strongly attached to a source or mechanism of production.

We can observe how Microsound’s use of the hiss or fuzz as sourced on the inevitable inaccuracies and challenges of recording technology (even in some very advanced states) builds a “Music as constructed out of previously neglected auditory sources and thus makes such noise apparent to the listener in a different way; the noise is defamiliarized” (Thomas 2006). Examples of this might include electronic artists like Alva Noto or Richard Chartier, or improvisers like Martin Tetreault or austrian group Polwechsel, among others. (See Appendix – Examples on accompanying CD). This practice delves into the surfacing of the materialities associated with the history of electro-mechanical and electronic media. The peculiar strength lies here in the recontextualization and defamiliarization of a sound material inherent in the uses of a technological device.

As pointed out by Seth Kim-Cohen, Muddy Waters’ 1948 recording of “I feel like going home” sets a precedent for a sound condition that will determine a great deal of our implications of hearing from then on. “An individual microphone is dedicated to each of the instruments: [voice, bass, guitar] or, more accurately, the guitar amplifier). The result is a new embodiment of sonic space. [...] The range of the signification that contributes to such perception is significantly expanded by Water’s amplifier and additional microphones. The amplifier conveys the buzz of the strings with the same fidelity as the major chord” (Kim-Cohen 2009)

In this example the artifacts embedded on the technology, coupled with a particular determination of perceived acoustic space, defines the sound experience. This content

becomes a sign, one component of the experience of the sound material. The buzz of the string and understandably the hum of the amplifier make up not the foreground figure of the music, but a material affectivity conforming the sound. It is a shift in perspective that allows for this material that inherently builds the conditions of production of the sound to be focused upon. “Noise is always subject to processes that render it non-existent” (Kahn 1999)

When Microsound or electroacoustic improvisation<sup>1</sup> operate on the hiss or hum of recordings, or manifest the diverse transient or frequency responses of a particular reproduction device, or expose the frequency response of a loudspeaker, they are focusing on a condition of sound production which has been embedded in our usual hearing without being foregrounded.

The attention paid to the specific differences between the diverse technologies of mediation becomes enhanced in this process of blurring of foreground and background arising from a non-gestural strategy. It is the process of “suspension” that interrupts the figural organisation of sound that allows to shift our attention into the multiple conditions that constitute our apprehension of this sound.

#### **2.4 Tactility as bodily involvement**

In “The Tactile Eye”, Jennifer Barker develops the project of carrying out an account of cinematographic strategies which can be interpreted as tactile. She uses the term “haptic visuality”, acknowledged as having been coined by Laura Marks, as “a way of looking that ‘tends to move over the surface of its object rather than to plunge into illusionistic depth” (Barker 2009). She concentrates on “a wealth of examples of this ‘look that moves on the surface plane of the screen for some time before the viewer realizes what she or he is beholding’ [...] This kind of tactile perception of the world manifests itself in art that emphasizes texture and materiality -the grain of video imagery, for example- and encourages the viewer’s gaze to move horizontally over the image” (Barker 2009)

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<sup>1</sup> Electroacoustic improvisation, also labeled EAI, applies in this case to certain particular strategies of improvisation mixing instrumental and electroacoustic devices of various kinds as they developed since the mid-90’s with particular aesthetic concerns. For an expanded account, see Sherman (2000)

The Marks-Barker proposal reveals the tactile as a category not exclusively ascribed to a particular sense. Tactility is put forward as a particular way of relating to the object of perception, in this occasion within the domain of the visual. It becomes structured more as a mode of apprehension than as a sense.

The contrast of “surface movement” to the creation of a “depth of field” is one fundamental trait for defining this tactile perspective. The specificity of tactility is strongly established on its differentiation from the optical imperative, which emphasizes the distribution of entities within a dimensional field.

Marks’ emphasis on the moment happening *before* the viewer “realizes what she or he is beholding” brings us close to the “suspension” experience mentioned earlier in the sound domain. This is how the “grain of video-imagery”, not foregrounded within a conventional logic of the figure, becomes an object of perception, through this “suspension”. The tactile “mode” gets characterised by a suspension of the implications involved on a figural continuation: a scheme we take for granted on optical visual models.

The disconnection of a certain approach, the optical, opens up the emphasis on other aspects the sign’s comprehension. Deleuze and Guattari state, “ ‘haptic’ is a better word than ‘tactile’ since it does not establish an opposition between two sense organs but rather invites the assumption that the eye itself may fulfil this nonoptical function” (Deleuze & Guattari 1987).

The tactile perspective implies a mode of apprehension that, beyond the model of the surface, understands the whole body’s implication on the process of apprehension of a sensuous sign. It implies a bodily involvement on the conditions built into our perception. "Depth perception is a habit of movement. When we see one object at a distance behind another, what we are seeing is in a very real sense our own body’s potential to move between the objects or to touch them in succession. [...] We are using our eyes as proprioceptors and feelers. Seeing at a distance is a virtual proximity: a direct, unmediated experience of potential orientings and touches on an abstract surface combining pastness and futurity." (Massumi 1998)

We can rely on James Gibson in his then revolutionary account of the senses in

dissecting what we habitually call the sense of touch to deploy it as a series of a conjoint of diverse behaviours, acquired patterns, sensory data and functions. “‘touching’ is very often an indirect mechanical disturbance of the skin mediated by an appendage, not a direct impression of the skin by an object, [...] The remarkable fact is that when a man touches something with a stick he *feels* it at the end of the stick, not in the hand.” (Gibson 1966) Gibson departs from a conventional view of touch to articulate a *haptic* system, in which a group of factors coalesce to construct our perception of the tactile. There’s an active component to the construction of this perception, which organizes a group of information around certain axes of experience. Gibson’s account articulates how these different pieces of information get processed through a particular axis implying interactions between diverse aspects of the system: “The disposition of all the bones, at any moment in time, can be thought of as a sort of branching vector space in the larger space of the environment, specified by the set of angles at all joints relative to the main axes of the body [...] In this way a sitting man might feel the shape of the chair as well as the shape of his grasping fingers.” (Gibson 1966)

The haptic system is an elaborate perceptual apparatus, that furthermore implies the coordination of very diverse sets of informations like the proprioception of the inner muscles, the sensation of temperature, pressure, pain, kinaesthesia, equilibrium, and the list is continues.

“Touch is nothing other than the touch or stroke of sense altogether and of all the senses [...]Touch is the interval and the heterogeneity of touch” (Nancy 1994 ). The tactile seems to grow out of these quotes as a particular mode of comprehension of the sensuous, which, distancing from the optical emphasis on *localization* and *dimensionality*, yields a particular implication of the whole body on the constitution of the basic “differences” in sensory information, the “heterogeneity” previously signalled by Nancy.

Thus focus on tactility arises within an experience of suspension of functional extensions, the continuity usually implied in a dimensional plane by optical imperatives. This is how it asserts itself as characterising a particular mode of apprehension in the experience of sound.



## 2.5 Tactility and space

The tactile as this particular mode implies thus a detachment from a functional organisation inherent in the understanding of a sound object. The tactile asks more for a sign to be read in the multiplicity of conjoint characteristics that determine its possibility of apprehension, the multiple sets of information that construct the “elaborate perception” developed previously, and which therefore radically distinguishes itself from any sense of absolute localization.

The tactile invites for an integrative model of perception entailing the whole body’s involvement. This experience is built out of a “compound” of actions and constituting experiences. This compound links the concept of the tactile to a certain understanding of the spatial as embedded in sound. An understanding of spatiality as inherent in the constitution of any sound, differentiated from the usual implications of conceiving a relationship between a sound source and a particular spatial location. One first instance to exemplify this is the understanding of spatiality within a musical instrument as happening within the physical conditions of the instrument itself, not only within the resonance box, as traditionally conceived, but even within every aspect of matter involved in the relationship between exciter and resonance involved within it. The spatial gets condensed, in this example, into the very definition of the sound production.

When on the opportunity of visiting an echo chamber<sup>2</sup> for the first time, I was struck with a very strong experience. I had the impression of hearing for the first time electronic sound within an acoustic setting. These very short but surprising impression prompted a significant understanding. The impression of having heard a seemingly electronic sound produced with only acoustic resources had come from a very peculiar occurrence, not usual experience in conventional environments, in which sound reflections resulted not in sounding like any kind of natural reverberation, but actually like the result of a feedback process. The impression of uniqueness was clear, and this lead me to the possibility of understanding the specificity of electronic sound as the product of isolating acoustical properties of sound. This experience proved significant in enforcing an understanding space as an inherent condition of sound.

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<sup>2</sup> A hollow chamber designed to produce extremely long reverberation used for acoustic research.

These questions, as Raviv Ganchrow puts forward, deal with a problematic within the “common-sense notions of hearing: on the one hand hearing ‘space’ and on the other hand hearing a ‘characteristic’ of sound.” (Ganchrow 2012). The experience of space involves that “sound is rarely perceived to be occurring at that position on the body. Instead, sounds are projected unconsciously into locations from where they seem to be emanating.” “In the example of perceived reverberation, the impression of expansiveness depends quite literally on durational compounding of successive intervals, grasped as one continuous whole. It is not the sounding of mute walls but rather an activation of intervallic-timbral relationships that are heard. [...] the perceived spatial qualities of reverberation are not so much an ‘aural impression’ of the physical chamber, imparted upon the listener, as much as they are encapsulations of all the incidental relations between body, place and event constituent of that particular instance of hearing.” (Ganchrow 2012)

The spatial, elaborated in from this perspective, is understood in itself as a condition and a reality defined within sound, rather than as an external circumstance. “Each progressing instant of hearing tone, contains within it a build-up of immediately preceding moments, thus creating the sensation of a continuous flow with sustained qualitative attributes. More importantly, the perceptual process of compounding seems to be a key factor in the palpable articulation of qualities suggesting that there may be more than a casual relation between what is considered ‘timbral’ and what is deemed ‘spatial’ in sound.” (Ganchrow 2012)

Within this perspective, the experience of space becomes as well one aspect of the compounds constituting a bodily constituted experience. Along this axis, the tactile and the spatial seem to deploy as aspects of a same area of experience, pointing towards a particular bodily relationship to sound. Assessing sound from this perspective implies focusing on the process of sound cognition as a mutable process comprised of the multiple actions and adjustments within the body’s behaviour and interaction with the environment.

This perspective thus, enhances a particularly multiple model of understanding sound, which arises at the core of a suspension of a functional model.

## 3. Traces

### 3.1 Beyond sources

Within a historical perspective, timbre has been traditionally attached to the particular characteristics of sound emitted by an instrument. This conception also expands into encompassing the attachment to specific characteristics of physical objects or materials.

Experience on the listening to electronic sound throughout more than half a century of mass media and culture has showed us that it is not necessary to rely on an *imagined* or *implied* source for a sound to achieve a significant identity. Individuations of timbre happen through the conjugation produced by specific technical strategies, by specific common uses (ring modulated sounds, granulated drum machines can be examples of this) and require no specific source to become identified as a particular timbre, a graspable landmark, or become a resourceful axis of variation.

The perception of materials created through electronic procedures directly puts us in a realm in which sources as fixed objects disappears. With it goes the idea of a latent subject behind the responsibility of a sound.

We had learned in the past to relate to instruments as fixed sources and to use the concept of timbre as an ascription to particular material/spatial qualities. The massive exposure to electronic media throughout a century has nurtured us in a world of attributions not necessarily tied to objects.

In electronic sound production, the creation of a timbre doesn't happen through the result of a particular physical action, but as a result of a specific set of information processes resulting in the vibration of a loudspeaker, thus thinking timbre as adjoined to a source is not necessary anymore. We can consider traditional conceptions of timbre getting gradually dissolved, through the electronic and cybernetic realm, as a result of a process leading towards this a kind of individuation not organised around the physical object. We can identify a particular combinatory method, a particular delay, without referring them to a specific space or cause, but actually to a specific use. Without the univocal ascription to a

source, we relate to a conjugation of traces.

### 3.2 Timbre individuation

In the assessment of timbre we commonly use adjectives like the following: “hollow”, “bright”, “warm”, we identify three different “sensual descriptions” of timbral characteristics that interestingly show their peculiar reference to three very different categories of experience, one “spatial”, one “visual” and one “tactile”. It becomes clear how the processes involved in our grasping of “timbre” in a perceived sign involve the conjugation of different categories of experience and previously trodden paths. The act of apprehension itself involves the register of the other senses.

A first level of the trace could be deployed on the area of imbrication of the senses. “Sensing and the sensing-oneself-sense that *makes* for sensing itself consist always in sensing at the same time that there is some other (which one senses) and that there are other zones of sensing, overlooked by the zone that is sensing at this moment, or else on which this zone touches on all sides but only at the limit there it ceases being the zone that it is.” (Nancy 1994).

Jean Luc Nancy goes through the questioning of the common-sense division in five senses, as “envisioning [...] the senses of acceleration or the tension of organs; what is more, one can attempt to take in the whole of the animal kingdom and envision distributions via “mechanoreceptors” (pressure, contact, vibration, stretching, etc.), “thermoreceptors,” “photoreceptors,” “chemoreceptors,” “electroreceptors,” or yet again, according to different criteria, via “exteroceptors,” “proprioceptors” (actions of the body on itself), “interoceptors” (digestion, arterial pressure, urogenital sensations, etc.)” (Nancy 1994) to constitute the category of “zoning”, where “Rather than focusing on the function or object of a particular sense, the motif of the sensuous “zone” allows Nancy to stress the quasi-heterogeneity and discreteness of ‘zones’ ” (Landes 2007)

“Difference proliferates, not only among the major sensorial registers, but across each of them: colour, nuance, paste, brilliance, shadow, surface, mass, perspective, contour,

gesture, movement, shock, grain, timbre, rhythm, flavour, odour, dispersion, resonance, trait, duction, diction, articulation, play, cut, length, depth, instant, duration, speed, hardness, thickness, vapour, vibration, cast, emanation, penetration, grazing touch, tension, theme and variation, et cetera, that is, multiplied touches ad infinitum” (Nancy 1994).

Our experience of a stone (visual, tactile, kinaesthetic) will infuse our experience of a certain sound as the sound of a stone. It would not exist without our previous experience of it. The rendering of the timbre of the sound as “stone-like” refers to a multiple set of sound qualities which we have experienced as emanating from certain qualities of the stone, it implies spectral as well as time-domain characteristics, a complex pattern of behaviours that coalesce into one “timbre” by way of our own experience. Without this, there would be no “stone” timbre. Several categories are agglomerated within one individuation event.

The same kind of coalescence happens with our exposition to a synthesis strategy. We don’t need to know the particular technical details to be nurtured, through a repeated exposition and hearing of multiple instances of it, on a particular synthesis procedure which becomes a tool within sound discourse, like amplitude modulation or granular synthesis.

For Nancy, “art isolates a zone of sensing from ‘the lived unity of perception or action’ [...] rather organizes a multiplicity of relations into a ‘world, not a visual or a sonorous world but a pictorial or musical one’ ” (Landes) “Art [...] establishes the synthetic unity and the continuity of a world of life and activity. In the final analysis, that world is less a sensuous world than an intelligible world of markers, functions or uses...” (Nancy 1994)

These interaction of zones of sensing and “markers, functions, uses” renders the experience of a sensuous sign as one imbued by the traces of its diversity. It is not an issue of apprehending an object within one area of sense which will refer to other area of sense, but rather that the imprint of the diversity of interacting zones impregnates the apprehension and constitution of the sign.

Our assessment of timbre is constituted by a series of previous experiences “the loose collection of the traces of a lifetime” (Landes 2007). Timbre implies in itself a process of recognition and organisation.

### 3.3 Multiple layers of traces

Going beyond this first level, each apprehension involves an agglomeration of various and manifold traces. The amount of these is not quantifiable in advance, and is strongly dependent on the peculiar conditions. There is, for example, on a basic level of *material* experience, what could be exemplified by considering the “metallic” in a sound, which comprises the trace of several microscopical behaviours which get conjugated by our experience of metal. There can be the trace imposed by a certain organization of characteristics which are inherent in a certain process, like the “zapping” hard-edged quality of a concatenative synthesis approach, or there can be the trace of a certain pattern of congruence determined by a cultural use, like those agglomerated around a traditional instrument, as for example, the inclusion of *pizzicato*, *arco* and *col legno* techniques can be identified as violin playing even though they imply very different characteristics.

Traces could be plurivocal. We can think on the one side of traces implied on the production process, in the basic aspect of its facture, where a trace is “contiguous with its cause, but it does not have to resemble its cause” (Summers) or could consider the traces involved in the uses and experiences that take part in the reception, as it can be exemplified by an account like the one put forward in “the tactile eye”: “[animation children movie] *Toy Story* recalls sensual memories of a particularly urban, consumer culture. Its texture is completely manufactured and processed, and even if we didn’t know that this film was the first feature in history to consist entirely of computer-generated imagery, we would feel it. This film’s skin has no grain to it, no roughness, no messiness [...] The tactile memories this film evokes are historically and culturally specific: through its setting is contemporary, it recalls the America of the 1950s, the era of Formica, Frigidaire and the Radio-Flyer Wagon, of smooth textures and bold colors designed to soothe and brighten the american landscape after a rough and dismal few years at war.” (Barker 2009)

The traces of a certain history can become embedded in the value of the material, as art historian John Gage puts forward: “The materials of the artist cannot be regarded simply as tools, for they were often repositories of values in their own right. [...] One example is the blue pigment manufactured from lapis lazuli, early described in Europe as ‘ultramarine’ because it had to be imported from the Middle East beyond the sea’. [...] in Italian contracts for paintings, until well into the sixteenth century, ultramarine together with gold was

frequently specified for use in the most important designated areas of the work. [...] The reasons for this emphasis on a particular pigment-hue are complicated, but it seems likely that more important than symbolism, which is, of course, conveyed through the purely optical qualities of the material, was the fully justified belief in the durability of this pigment in contrast to its chief rival, azurite (basic copper carbonate), which too readily turned green on exposure to damp. A stable blue was thus a costly blue. "(Gage 2000 )

Addressing timbre from this perspective opens up the values and resources of timbre's value and resources as a multifarious domain, arising in the confluence of these traces. Timbre can be conceived from this perspective as a layer of individuation. The implication of diverse traces will alter the way information is conjoined and read as timbre. As within the example of the stone, our experiences of the stone will make us conjoin a series of aspects of sound into one single apprehension, or within a stabilised practice like glitch, its familiarity will influence our way of organising and segmenting our apprehension of the sensory information.

### **3.4 Traces in media**

When exposed to the products of a medium we apprehend a group of characteristics embedded in them by the medium itself, traces which are independent from a source or a specific exciter of the medium.

As it was referred to before, a particular loudspeaker will impart on the sound a specific spatial diffusion quality, a particular frequency spectrum or amplitude behaviour, regardless of the source information which is supposed to be coming "through" it. The conditions imposed by its particular use do not limit themselves to the shortcomings of a technology. They will also constitute themselves as a signifier of a particular condition. As an example, the rendering of a voice through an old microphone or old set of loudspeakers will provide a particularly recognisable, "non-realistic" result identifiable mainly by its reduced frequency range. Nevertheless, a "digital" rendition of the voice as we might get accustomed today in modern broadcasting situations, bears frequently other traces of "non-realism", by the combination of close miking and particular amplification procedures, as it frequently carries

high frequency information we wouldn't normally hear at conventional distance due to filtering of this information through air.

The traces implied in media not only involve the material characteristics of the transducer equipment, but also the conditions that come up within the human-technology interaction, rendering specific results in the process of its use. "Our writing tools are also working on our thoughts" (Kittler) also applies to the process of sound production, as the particular possibilities of a system will imply certain practices and will call for particular articulations in sound. An extreme case can be the articulation we could find in some analog produced music produced by the pressing of successive buttons, but it can go up to more elaborate situations in which a certain algorithmic processing possibilities determine standardised practices. "Technique means knowing how to go about producing what does not produce itself by itself. Technique is a –perhaps infinite- space and delay between the producer and the produced" (Nancy 1994)

As a last layer it is possible to involve the traces arising from the consequences of sound's circulation in media culture. A very determined example within visual culture could be the Polaroid. This kind of photograph became an identifiable landmark through its peculiar technical characteristics. Not only the instantaneous quality of its use implied within cultural history a certain practice, and therefore brings forward specific connotations of everyday "reality", but moreover its particular shape, colours, and distribution of colours became an identifiable "quality", agglomerated by this technical device in itself. The interesting thing lies, as in the previous examples of Toy Story and Lapis Lazuli, that this particular agglomerations, as they become uses, bring forward affective imprints and form part of a chain of references that allows for the articulation of a sensuously meaningful experience.

In the domain of sound it is quite frequent to find examples of these "imprints" as they appear in the use of particular microphones, synthesizers or even processing units. A certain synthesis procedure like FM will define a particularly recognizable quality. Certain combinations of this even define a trajectory of uses which gets particularly enhanced and even constructs particular frameworks.

Going back to an example put forward earlier in the practices of glitch and microsound,



we can observe how, even as the raw matter of this microsound/glitch example is a “purely electronic” sound, it embeds in itself a certain history and brings forward certain affective impressions. It relates to a certain “aura”, which, using Helmut Lachenmann’s definition of this concept could be put forward as “our own intimate relationship with the sound” (Lachenmann 1983). Cranfield explains that “by using the sound of skipping CDs, something prosaically and familiarly unwanted, Oval’s work self-consciously explores the socially mediated nature of noise and the outward indifference of technology” (as cited in Whitelaw 2003)

This sound is extracted from a known context, trailing uses and senses. The use of the hiss or fuzz (see example / appendix relates among others to those experiences in which, for example, after the appearance of the image at the beginning of a movie, it will be the start of a static noise which will give us the notion that the “action has started”. Stan Link elaborates on the role of noise in the construction of particular experiences along the history of reproduction technology. “Noise was inherently faithful to the circumstances of the listening relationship to the documented event” (Link 2001), that is, it implies the “perspective” of the process of documentation as a strong imprint on the history of media.

Furthermore, microsound brings forward other aspect of traces involved within cultural circulation. It is possible to ask how much the abrupt, pristine, only possible through digital technology, sound “cuts” so integral to the characteristics of glitch-type sound articulation have become meaningful as an expression medium within popular musics for a generation which has grown nurtured on the discrete jump-cuts of digital operation, through the manipulation of digital interfaces from buttons up to digital imagery, through gaming or graphical interfaces. This constitutes a muscular-tactile trace, a behaviour inherent in diverse aspects of media that becomes integral to the sensitive value of this sound material. It is interesting to point this out as this kind of sound behaviour would have been inadmissible, and considered a mistake, within previous aesthetics, even within the likes of popular rock culture of 30 years ago.

Media builds its own identifications. That’s how particular technical imprints become landmarks and through this process become carriers of affective and meaningful information. It is through this process that the sound of a reverberation tool can become a particular sign referring to uses and aesthetic landmarks even more, in cases, than yielding

a spatial quality to a sound “object”. We can “read” the particular “echo” of a sound object, but, having been exposed to the use of reverberation process in massive culture, the echo in itself can acquire the value of a sound event in itself.

### **3.5 A note on traces and instruments**

In instrumental music sound integrates a compendium of experiences which get articulated as dimensions of the sound experience. These dimensions are embedded on the construction of what we learn to identify as instrumental sound, even if some of them are not seen or perceived completely every time we hear it performed. The traces of the physical action that produces the sound become part of the expressive experience of it. They become embedded in its comprehension through a non synchronical apprenticeship of the means of sound production. We grow nurtured in the relationship between plucking, bowing and hitting through diverse instances in a process that renders them integral to a particular history of practice of musical expression.

When we attend a classical musical performance or any performance involving traditional instruments, the gestures of musicians and tools in use (bows, beaters, the devices of the instruments themselves, isolated parts of the body of the performers) become another layer of the same experience. Any concert is in that sense a multi-sensuous experience. The layer of visual/haptic experience is a layer diverse from sound, which in many cases helps us focus in certain aspects of the musical discourse. It becomes almost analog to lip reading, a behaviour that constitutes a frequent aspect of our perceptive actions. “We are aware that the hearing impaired use this method of recognizing speech extensively. We are less aware, however, of how much the normal listener also employs it. It is much easier, for example, to follow the speech of a particular talker at a crowded party when you can see the person's face” (Bregman 1994). Similarly, we are less aware of how much the discourse of traditional music implies our real or imaginary “lip reading” of this other layer.

Within the experience of instrumental sound all these perceptual dimensions point into each other, get condensed in a perceptual “thickness” of the sound, they become a set of traces embedded in our experience of it. The source of the sound is apprehended as

meaningfully embedded in it, it cannot be separated as a subject that could be detached from its imprint. In instrumental music the gesture is embedded in the sound, it is inherent to it and is part of a sound organisation which gives to it a prioritarian value.

In purely electronic music where that layer is absent, the situation actually brings forward other group of layers and traces as involved in its experience. The particular conditions embedded in technological media and their particular uses and implications will constitute the layers of traces which will define the reading of electronic sound.

Electronic sound practice constructs a particular articulation can become “naturalized” through its specific use. An example could be the sound of a “granulated” piano sound. Besides the physical non-naturalness of this sound, through its regular use it becomes accepted as a landmark material in itself. It stops referring to a “distorted” natural situation to point into a culturally charged sound type perfectly natural in contiguity with others. Its internal behaviour becomes acknowledged as part of a wealth of regular expressions.

### **3.6 Timbre paradigms**

Many strategies build the conceptual appraisal of timbre in electronic sound around the concept of the source: “Timbre is a general, sonic physiognomy through which we identify sound as emanating from a source, whether that source be actual, inferred or imagined” (Chion 1986). Being that the source is not anymore rooted on the instrument, the source becomes a “perceived”/“imaginary” source, a certain quality implied by some aspects of the sound discourse that refer to a perceived “force/energy/material quality”. The model of the source tends to constitute our apprehension of sound on the model of a sound “object” under specific circumstances.

Following a focus on the traces embedded in sound’s apprehension puts the stress on the mutability of timbre’s comprehension. It values its possibilities of identification as immersed within a reality of circulation within the cultural domain. Timbre is conceived as the result of diverse operations and processes.

The abstraction of timbre into “timbral spaces” bypasses the inherent mutability of the recognition process. The fact that the peculiar agglomeration of data in this process is determined by a pattern of previous experience. This perspective on timbre cannot be realised on a scalar perspective as it cannot be “abstracted” into a dimensional grid.

Complex dimensional grids are constructed on the isolation of particular groups of data which render very useful information on the possible morphological description of sound and its inheritance in timbre. What these grids cannot do is account for the singular individuation of timbre comprehension which is grounded on a mutable genealogic conditions. Timbre is a layer of individuation. What will determine that a sound is individuated as the sound of a stone or not implies an organization at a certain time-level, individuated through a particular set of acquired patterns and traces.

In instrumental sound, a clarinet playing in a small hall, a church, a garage or a long corridor, would be "the same timbre", "coloured" through diverse acoustics. Just by recording those 4 sound instances and operating on the electronic mediated result, we would easily think of 4 different "timbres" which result from the overlapping of the characteristics of the source of the sound and those from the particular acoustics of the room, rendering thus a different regime of timbre individuation.

Timbre could be conceived, rather than as a “quality” of a substance, as an “event”, in a parallel to Gilles Deleuze conceptualization of the event on his account of Stoic ontology. In his characterization of Stoic thought Deleuze stresses the fact that the Stoics generate a “new distribution” of beings and concepts (Deleuze 1968), distinguishing between, on the one hand the realm of the bodies, the “*real and profound being, force*” (Brehier, quoted by Deleuze 1968) where the mixture of bodies occur “like a drop of wine in the ocean, or fire in iron”, and the realm of “*facts, which frolic on the surface of being, and constitute an endless multiplicity of incorporeal beings*” (Brehier, quoted by Deleuze 1968). “These effects are not bodies, but, properly speaking, “incorporeal” entities. They are not physical qualities and properties, but rather logical or dialectical attributes. They are not things [...] but events.” (Deleuze 1968)

Within this conceptualization, the particular, parametrical physical qualities of a sound would fall on the side of the bodies and mixtures, “mixtures determine the quantitative and

qualitative states of affairs, the dimensions of an ensemble - the red of iron” while timbre would be understood on the side of the incorporeal. Where Deleuze suggests, “it is not possible to say that they exist, but rather that they subsist or inhere” he is enhancing their mutability. This concept allows us to model of our assessment of timbre as always in a process of definition and concretion. From this stance timbre complicates in its mutable nature all the layers exposed previously.

The perspective of the traces involves embedding the process of recognition in the comprehension of timbre. Furthermore, it allows for an enhancement of a “problematic” perspective on timbre. A perspective in which its essentially multiple nature is exposed through a form as a process of analysis which takes this plurality as the axis of its development.

## 4. Codes

### 4.1 Framing

In defining the specificity of “dramaturgic space”, Darko Suvin apprises theatrical performance by stating that this “bodily and imaginative attitude is a quite extraordinary cultural creation, a kind of benign abnormality which suspends the spectator’s power of changing the environment to enhance his/her exclusive concentration on communication and cognition” (Suvin 1987).

He emphasizes this as a “central practical or ontological contract between theatre audience and theatre stage” where spectators are unable to experience “mechanical physical consequences from events within the dramaturgic space”. Such a “contract” establishes a bracketing, a particular situation isolated from the responses and practical interaction with the environment within which the signs of the artistic proposal are constructed.

Much of their meaningful capabilities arise in the play of relationships with the specific boundaries and axis established by the medium. "Everything that gets onto the stage tends to become saturated by meanings superadded to the empirical function of that thing" (Lotman, quoted by Suvin). The “framing” embeds into the material meanings internal to the practice, comprising physical conditions of the medium as well as those inherent to cultural habits tied to it.

Visual, cinematographic practices deeply embedded in our cultural experience are a clear example of the relevance of this framing process and how it builds specific readings. We rarely focus on the fact that much of the knowledge produced through this medium is developed following rules that arise specifically on this relationship, and which constitutes a sense we ascribe to the apparent visual “source”. Rules which determine criteria of montage within a “realistic” paradigm depend more on the way certain internal characteristics of the medium are handled. Criteria like the “space” between the figure and the limits of the frame, or the line of horizon and the height of the frame determine the

priorities or coherences of certain shots or sequences more than the actual “content” of it. A sequence which can be experienced as believable is usually grounded more on respecting certain conventions like the reverse shot (where shots of two persons are interpolated representing a dialogue) or issues of continuity dependant on variables inherent on the camera.

The significance of a particular technique or statement within an artistic practice lies in what it proposes in relation to an existing code. This certainly is the case within western musical history, “Music does not signify society. It does not signify literature. And most of all, it does not signify ‘reality’. Musical codes are proper to music.” (Monelle 2000). It is actually the code that shapes the relationship between the practice and what lies beyond it. The material of this tradition comprises a continuous deployment of codes and practices, which involve the physical possibilities of the instruments as well as the trails of specific cultural practices and paradigms.

Examples of this range from the gradual transformation of harmonies from the baroque first constructions of tonality up to altered harmonies of the romantic period. Or the expansion of formal codes that the diverse instances of the sonata form derives the classical paradigm into Beethoven and onto its subsequent developments. How a particular harmonic material resonates not only within the boundaries of a specific work, but within the traversed trajectory of previous expressions.

#### **4.2 Rhetoric and absolute music**

The concept of absolute music got consolidated as fundamental within the romantic paradigm of the 19<sup>th</sup> century, though its roots are to be traced back to the renaissance. These are deeply imbricated in the particular cultural stances and development of the worldview of those times.

Absolute music grew within a certain practice and a within a certain assessment of music’s value. The role of instrumental music was modelled on rhetoric and was integral to the arousal and development of the tonal paradigm of sound organization.

As Daniel Chua elaborates: “Giulio del Bene said as much in 1586 [...] proposing that music should be transferred from the quadrivium to the trivium, that is, from the immutable structure of the medieval cosmos to the linguistic relativity of rhetoric, grammar and dialectics. In the trivium, music becomes human and can be made infinitely malleable by the power of rhetorical persuasion.” (Chua 1999). The possibility of developing meaningful expression through the articulation of sound units gets consolidated through the constitution of a code. This code, tonality, grounds the construction of musical form. Each unit is, within the boundaries of each work, a manifestation of this relationship between code and form.

“The principle of order which grounds a certain hierarchy between the different degrees of the scale of pitches and defines the gravital forces of this tonal space can be found even more frequently at the level of the overall form of the work, the spatial tonal skeleton becomes then the matrix of musical forms: this is how the tonal plan of a fugue or the organic structure of the ‘sonata-form’ for example, with their modulation rules [...] actually only brings into concretion, at the level of macro-form, the presence of those same forces of attraction which we find already at the level of the micro-structures... “  
(Bayer 1981)

As Daniel Chua develops, the “absolute” in absolute music is defined on a particular basis.

“Prior to the Reformation, music was not ‘pure’ music as if it were a separate entity of pitches and rhythms. The ancient concept of ‘vox’ (voice) incorporated both vocal and instrumental sound. [...] Far from being a pure sign, music was a hidden signature, embedded in the world through a system of resemblances where it could articulate the diversity of the cosmos within the unity of the octave. [...]

What the Romantics discovered as absolute music was a mere shadow of what Pythagoras formulated two thousand years earlier, for the absolute music he bequeathed to humanity was not so much a music to be composed as a music that composed the world. [...] If music was ever absolute then this was



the only time in history that music was genuinely absolute music. It harmonised everything” (Chua 1999).

The renaissance constructed a particular plane of sense for instrumental music. It involved making audible this “disembodied [...] ‘invisible interior’ that is the modern subject; it negates the ‘scriptive space’ of resemblances for the sung speech of self-representation” (Chua 1999). Part of the shaping of the musical codes implies a rationale and a function inserted in the standpoints of a mode of thought and expression. The development of this anthropocentric paradigm of expression also run parallel to the construction of a dramaturgical tradition in music and the model of the frontal. It amounted to a strong shift on the grounds of previous paradigms of sound organisation rendered in the conception of music-making. "The score rationalises the fissured and layered patterns of medieval notation by containing music within a geometrical space that pictures the totality as a map. [...] Thus scores objectify music for the gaze of an ego that no longer requires the multiple vantage points of communal participation that the notated ritual of, say, Ockeghem’s *Missa prolationum*"

The path initiated in the instrumental emancipation of the renaissance extends into romanticism, constituting the model of autonomous sound. This path is bounded together by tonality, which provides the scheme for the constitution of polarities, hierarchies, directionalities and tension. Autonomous music built this plane infused by the possibilities latent on the tensions and structuring principles within this scheme. Each morphological unit (note, cell, motive, phrase, section, movement) had a function within this articulated system. The idea of a purely structural understanding of music was built around the grounds of this practice. This paradigm was strongly attached to its assumptions.

#### **4.3 A figural paradigm**

In his book *“Essais sur la notion d’espace sonore. De Schonberg a Cage”*, Francis Bayer develops the concept of “sound space” (espace sonore), a concept that specially after the 1950’s became widely relevant within the frame of contemporary music composition thought.

As we read in his introduction: “we talk of melodic line or curve, of a conjoined or disjointed harmonic interval, of parallel movement, ascending, descending. All terms borrowed from a spatial vocabulary. [...] for he who is reading a score, the mere spatial vision of signs can turn into an interior hearing of the piece, a sort of ‘substitute’ of audition” (Bayer 1981).

Bayer’s account involves a certain concept of space, and a certain value of sound organisation. It conveys a figural emphasis on sound’s comprehension. That is, an account of sound experience which primarily values a morphological differentiation of sound’s parameter variables. Bayer’s conception imposes a grid model where trajectories and contrast between points in each dimensional plane of sound parameters defines the musical statement. On his project of accounting for an understanding of 20<sup>th</sup> century music which can encompass a wide range of proposals and which can surpass the crisis of criteria implied by the dissolution of tonality, each composer’s way of “distributing” this sound space becomes the paradigm of musical organisation. The sound space articulated by Bayer presupposes a model of co-ordinate space. “The principal features of modern Western co-ordinate space are homogeneity, divisibility and infinity” (Summers 2003). Firstly exposed as a model for the organization of pitch, the grid-like space of Bayer’s account of sound gets expanded into the other parametrical dimensions.

In 1958 Hungarian composer Gyorgy Ligeti wrote two essays that critically analyzed total serialism and put forward his own solution out of what he conceived was their intrinsic problem. These essays have remained influential cornerstones of a commonly shared critical assessment of total serialism.

Ligeti’s diagnosis implies his own proposed solution and his perspective towards sound and composition. He grounds the criticism in diagnosing that the problem of serialism was the “flattening out process” (Ligeti 1960) produced by the accumulation of evenly distributed differences which dissolved the internal contrasts within the musical form.

He gives the image of “playing with plasticine” to express this problem, signalling how “The distinct lumps of the various colours gradually become dispersed the more you knead the stuff; the result is a conglomeration in which patches of the colours can still be distinguished, whereas the whole is characterized by lack of contrast. Knead on, and the

little patches of colour disappear in their turn, and give place to a uniform grey” (Ligeti 1960).

Ligeti’s plasticine image is eloquent as a depiction of understanding composition as the shaping of a homogeneously conceived space. Ligeti’s proposed solution involves the achievement of contrast through the use of a more effective statistic distribution of agglomeration points within the parametrized time-space.

Ligeti’s proposal implies a figural conception of sound apprehension and organisation. It focuses on sound as the product of defining values on a reduced set of variables which result in a contrasting coalescence of figures against a homogenous background. Whether these figures have short durations as in a “classical” rhythmical discourse or extended durations does not alter its concept. The figure is based on the definition of a contour or a trajectory within any or diverse parametrical planes.

Ligeti’s proposed solution to come out of the diagnosed problem of total serialism complete dissolution of form, lies in the constitution of a model of form based on a figural or morphological value of sound, assuming the ground of a sort of “natural” code.

Form is thus conceived as the subsequent development and contrast of morphological instances, much like in tonality each unit articulated the tension-release relationships of its code. The fact is that within tonality the morphological units were bound by a harmonical code. Since such a thing is not at work in this context, the transparency in the apprehension of morphologies is taken as sufficient to construct a meaningful experience of trajectories and directionalities based on the figural contrasts between morphologies.

This construction realises the model of homogenous space put forward previously. The criteria of transparency, malleability and transposability of the figural approach is essential for the conception of form as an articulation of morphologies.

In contrast to this conception, it is possible to articulate an approach to sound comprehension that renders a diverse idea of form. This other perspective focuses on the complexity of sound’s inherent referentiality as a non-dimensional aspect of it.

Helmut Lachenmann's development of the concept of aura can serve as a lead to assessing this perspective. Lachenmann defines aura as "each listener's particular familiarity with a sound" (Lachenmann 1983). Lachenmann elaborates on this concept around the example of the use of the cowbell, highlighting the absence of attention to this aspect of sound experience in the parametrized perspective of serialism: "What is a cowbell doing, as it was used still within the music of Mahler as a gust of fresh air, far distant from the modern world, this everyday object of life in the hills, within a piece like Stockhausen's *Gruppen*, between that salon toy which is the celesta, and that instrument of the last judgement, at the same time warrior and religious, which is the trombone?" (Lachenmann 1983). He goes on to expand on how aura is a mutable aspect, as "On the other side, the sacrifice of this aura is certainly justified, as *Gruppen* has represented precisely, from the point of view of the artistic message, a decisively new experience, and the sound of cowbells has become recognisable as evidence of a new aura: that one which characterises the orchestral sonority of Stockhausen." (Lachenmann 1983)

Considering sound individuation from the point of view of the Aura invokes a different kind of individuation, implicating genealogic processes which cannot be ascribed to a set of scalar dimensions. It is a non-dimensional kind of individuation. Each sound is valued as a multiple instance traversed by diverse historical layers, each sound apprehension carrying a complex of uses and possible grammars associated with it.

This perspective reassess the axis of sound comprehension and opens up codification as a mutable process defined by diverse configurations and contexts. In another text, Lachenmann points into the fact that the codification of a certain sound within western tradition as musical or not is constituted out of uses, rather than being strictly determined by its compliance to the grid like organization of the classic sound parameters. "This energetic aspect is not new, but in classical music, it had a more or less aleatory function (the harp in Mahler as a deformed timpani, the brass in Bruckner as a superhuman lung, the high-pitched pizzicato of the violins in the *Ouverture for King Lear* of Berlioz, that Richard Strauss used to compare with an artery that exploded in the head of the sovereign" (Lachenmann 2003). He is addressing how what could be conceived as "extra-musical", the "energetic" aspect which crops up in the noise content of accepted traditional musical resources, like any pizzicato-Bartok could attest, is a matter of code within a practice. The

boundary of the referential and the purely “musical”, following a criteria of a pure structural conception of sound organisation, is not self-evident, but actually constituted through the diverse sound practices and their configuration of particular frames.

#### **4.4 Timbre and code**

The consensus on timbre conceptions since the advent of electronic sound has profoundly evolved from earlier models of timbre as a single parameter of sound, “in contrast to the interval, the definition of timbre is very complex, needs many dimensions for characterization, and is not suitable for a simple arrangement on a scale or other clear and complex hierarchical organization” (Lerdahl 1987).

Nevertheless many models for thinking timbral composition are very much influenced by a parametric conception of it. Several strategies for its organisation are inspired on realising the same kind of principles associated with the “sphere of pitch relations” (Malloch), bringing up models of formal organization like “timbral trajectories” or the idea that “timbre can be organised hierarchically based on the idea of timbral consonance and dissonance” (Malloch 2000). This path enhances a morphological understanding of timbre, focusing on those dimensional aspects in the experience of timbre that can be translated to a plane of scalar relationships. It brings forward a figural assessment of timbre’s value in composition.

Even though the conceptualization of timbre involves a more complex individuation process than the single point value on a grid of a scalar magnitude like frequency or amplitude, these strategies model its manipulation on a translation to a field of neutral relationships. Neutral as defined by a kind of relationship that can be expressed as quantitative or as a trajectory from a point of tension to a point of release. Timbre gets moulded on the paradigm of an absolute musical space.

The strategy of conceiving timbral “spaces” or “features” as a tool for compositional approaches usually starts from isolating particular aspects or sets of aspects with the objective of determining scales (gradients) of relationships. These approaches are

immensely resourceful in rendering complex timbral operations, though they are most frequently used towards a criteria of organisation arising from the isolation of particular aspects of timbre individuation (“like “brightness” or “roughness”) as points in a scale, in a model which determines a trajectory kind of organisation. Its axis is the development of gradient like relationships and thus implies an understanding of form as neutral relationships within a field, an example of which are tension-release directional relationships. This perspective on timbre disregards the singular individuation of timbre as described in chapter 2. The transformation of sets of values into the coalescence of the experience of the “stone” sound will be only determined by our previous experience of the stone. The individuation of a group of sound variables or behaviours will arise as a consequence of a use or practice, like in the example of amplitude modulation, opening up a different perspective into handling timbre’s value. Similarly, the value of timbre in Lachenmann’s reference to the aura of certain sounds, as an approximation to timbre’s inherent referentiality cannot be explained through morphological relationships.

Figural logic assumes a dimensional space in which sound materials are deployed as units within a previously assumed *musical* space. This assumption of a musical space is to be found, interestingly in its simultaneous apparent disparity, in both Schaeffer’s and Boulez’s 1950’s claims around the use of “concrete” material. Schaeffer’s reduced listening asked for a quite “musical” (absolute, abstracted) experience of concrete sounds. Boulez’s claim argues that concrete sounds are for him not malleable enough as they are not sufficiently detached from real cues to operate on them as an abstract, malleable rough matter. For both there was a line to draw which separated the musical from the non-musical, even though the line was drawn at a different points.

Within this defined dimensional space, materials should be “coded” as musical, and as such, remain always within a absolute dimension of music perception, even while they could refer, in a second instance, to external associations.

Schaeffer’s gestural/spectromorphological project aims at an attribution of timbral invariants to shape models, rendering any electronic timbre as describable as a concretization of a shape model, while constructing a taxonomy of possible sound shapes.

This taxonomy invites for a possible translation of any sound structure into a grammar

like organization of figure positions within a grid. Within this scheme any material could be considered and developed in a musical meaningful way as soon as we can read its morphology and thus conceive it as a “transposable” object. This transposability fulfils the need of a neutral, homogenous space within this conception of musical form.

It bypasses the fact that, besides the feasibility or not of a pure non-functional hearing of the sounds in *reduced listening* (i.e.: not relating the sound to the practical world function of a sound), the apprehension of timbre already implies diverse degrees of referentiality which define it. As proposed earlier, it will be a group of previously acquired patterns and conditions that will shape the way I segment and individuate a sound perception.

#### 4.5 Genealogies of electronic sound

Media creates a reality of signs and understandings particular to itself and their circulation. That’s how particular materials acquire a determinate impact, like the experience described previously in which white noise works as sign of recorded testimony (Link 2001) and through this process can become an affectively or meaningfully charged signal. Or the way the imprint of the qualities of public media or television conditions us in a certain compression of the signal’s spatial information in the filtering of a group of sources through a same resonance pattern that also alters their dynamic balance, constructing a particular, planar model of the sound sign.

This is how the imprint of particular technologies constructs a perceptual material which becomes integrated to our habits of media expression.

Even the hearing of recorded “spaces” is present in our culture, massively through radio and television broadcasts that diffuse the ambience of particular locations through their medium, or in their presence within cinema practices. We’ve grown used to hearing spaces in a certain way, what predisposes us in a certain way to the hearing of a field recording, rendering to this experience an extra layer besides the exposition to a source material.

A model of sound apprehension based on sources and causes claims an understanding that could be exemplified by this statement: “For instance if an apparently ‘struck’ object

resonates for a duration beyond normal physical expectation, such that the resonance appears to take on its own continuous energy profile, we are likely to contend that another energy source has supplanted the attack or, where a recognisably vocal or known instrumental attack develops into a sustained spectrum that does not equate with the source, we predicted from the transient, the exact nature of the source will remain ambiguous” (Young 1996).

It is possible to argue that, besides this model, the patterns of comprehension are shaped and can be completely altered through a process of cultural codification. This could apply, for instance, to the impact of the popularisation of granular and shuffling techniques applied to classical instruments like the piano. The sound of a “granulated” piano has become a quite common aural unit in popular musics, which then contradicts the priority of the causal model of the previous example as a fundamental understanding of sound. The “extension” of the resonance becomes naturalised, and constitutes then a new code. Both models will coexist, but what becomes clear is that diverse uses shape different sound individuations, as the identification of the granulated sound as a unit alters the axis of its recognition. The “altering” of the piano resonance as referring to an “original” source that has been varied is not foregrounded as a characteristic of the sound anymore, as the granulated piano has become an entity in itself. Furthermore, as stated at the beginning of the thesis, the technique itself has imposed a mark which can become in itself a source of variation. This will happen as the subtleties of approach into granulation technique will furthermore refer to previous uses of the same technology, in a similar way that an altered chord could refer to previous, more plain versions of the same harmony, or that a word defines its meaning, or even its impact, in its singular differentiation from other words. Timbre becomes a layer traversed by process of codification. This process achieves a much complex and intense status in the realm of electronic sound.

While Schaeffer’s spectromorphological proposal is grounded on a clear definition of what is taken as reference in a sound and what is not (even as both categories could be used in the same composition), it could be argued that referentiality in itself, the point where the line is drawn, rather than being self-evident, is a completely variable fact, and thus integral to our comprehension of the sound. This is where the experience of electronic



sound is traversed and shaped by the codes of the particular contracts which arise in its listening.

#### 4.6 **Media sound**

The realm of electronic media is that of “any possible sound”. Not only because of its technical definition, as “only the phonograph can record all the noise produced by the larynx prior to any semiotic order and linguistic meaning” (Kittler 1999) but also from a concrete, current point of view, in which massive media has grown to an all encompassing situation in which it inhabits immense aspects of urban life and comprises an extraordinarily varied range of sonic material.

Kittler’s statement puts the experience of media in the light of a decodification reality. Not conditioned a priori by a certain restricted semiotic order, Media asks for us a continuous procedure of re-decodification. Every aspect of its production, where it involves a step in the chain of production or a feature of a device involved in it, defines a quality that could be signified, in a fluctuating socio-historical process.

On his account of the genealogy of sound media technology, Kittler narrates the experience of pioneers of radio plays confronted with the fact that within their technology, “Cutting and splicing would have produced nothing but crackling noises” and so it led them to devise a “genuinely ‘radio-specific’ means of expression, which happened through their study of the parallel medium of silent films and concluded that only the fade-out, not the cut, was a possible model” (Kittler 1999). He then goes on to quote a document from 1928 by Bischoff, which stated that: “the man working the amplifier [...] is in charge of a function similar to that of the camera man. He fades in and out [...] by slowly turning down the condenser at the amplifier, he lets the scene [...] fade into the background” (Kittler 1999)

The interesting thing about this text is that situates in a specific moment in history the birth of a practice which many decades later would become, not just a cliché, but a specific code of media-electronic sound. This “knob” sensibility became an integral part of our sound culture as much as is the case with gestural imprints of traditional instruments.

These focus on the inherent aspects of the medium enhances as well the focus on the particular “contract” of the listening situation. When exposed to the recording of the sound of a train in a piece by Schaeffer, I won’t only be listening to Schaeffer’s proposal of a morphological reading of the train sound, neither only to the possible reference of the train to an actual object of reality. But I will be hearing to a recorded train in a particular context of hearing, be it a concert hall or a private space, which nevertheless will impose on the listening situation a certain significance and a certain set of codes at play. This will imply the history of hearing to recorded sound, it will draw attention to the ways in which I’ve heard recorded trains, how a particular syntax affects the way I understand it, how the particular technological characteristics of Schaeffer’s devices determined the sound I’m hearing and affect their impression on me.

Morphological standpoints tend to bypass this aspect of sound comprehension. The relationship with an “outside” world tends to be located as a secondary, associative instance of sound. The fact is that as we’ve seen with the piano granulated example, this instances determine, not only an integral value of the sound as it crops up in a compositional project, but an aspect of individuation of the same sound, of segmentation of the sound material, much like the stone example in chapter 2.

Trevor Wishart claims that “the inability of the listener to locate the landscape of the sounds provided the disorientation and sense of strangeness which the producer wished to achieve [...and which produced] the basis of the early use of electronic sound materials for science fiction productions.” (Wishart 1986) It is arguable that this sense of disorientation is a historical stance that might for sure changed since those times, as hearing those kinds of electronic sounds has been naturalised within the habitual expression of media. As suggested earlier, media creating its own identification marks, constituting new codes.

In traditional musics, tonality built the procedure that made the rhetorical units significant constituting within a coded that grounded the formal relationships.

Ligeti’s proposal tried to reconstitute the possibility of articulating a discourse based on morphological units without the code of tonality, implying a natural code of shape contrasts. Morphological perspectives like the ones mentioned deal with electronic sound in a similar

way, not foregrounding the inherent codification in sound's production and reception, specially enhanced in the electronic realm, as a variable for structuring its form.

It is possible to consider a strategy that takes the coding aspect in the experience of sound as its core project.

## 5. The genealogic-problematic conception

### 5.1 Towards a compositional strategy

The genealogic problematic conception involves a strategy for sound organisation. It starts from conceiving sound as a particular instance of the perspectives of tactility, traces and codes. Through this, it accounts for the interaction of diverse instances and perspectives in its apprehension.

This proposal organizes sound relationships as to problematize its apprehension, to build a form centered on structuring conditions rather than objects. The problematization of the sound relationships aims at exposing the conditions involved in sound comprehension. Particular configurations will enhance on each material a particular way of apprehending it.

To give a simple account. Within Luigi Nono's work "No hay caminos... *A Andrei Tarkovsky*" it is the diverse organisation of relationship between a set of sound materials which renders a particular emphasis in its comprehension. Working with a spatial distribution of conventional instruments, it places the timpani within the group of instruments on stage. First appearances of the timpani sound will make present the reading of them which we carry from before the experience of the piece. The deployment of the whole work and its development of sound and space, leads us to start focusing on the way the instruments, emitting sounds from all around the venue in segmented stretches, *sound* the hall. That is, they become exciters of a room acoustic. Along a strategy which enhances attention to minute details in spatial sound articulation, our focus shifts, from an inherited focus on instruments as purveyors of a single sound line, into the hearing of multiple spatial information. This conditioning leads, some time into the piece, to slightly shift our assessment of the timpani sound. Being that our perception of the sound of the Timpani always involved the sum of reflections within the hall, specially strong based on its low frequency, it is this shift in conditioning which puts us in a situation in which we actually almost lose consciousness of the sound of the Timpani coming from the front. This sensitization made us value the decay part of the sound of the Timpani in a much more enhanced way, balancing its presence with that of the attack. The resonance was

enhanced, not through a modification of the sound itself, but through an operation that shifted our focus.

Working on the conditions that determine our apprehension of sound could be considered as well in the realm of electronic or loudspeaker produced sounds. For example on a sound which, either arising from recorded or synthesized origins, evokes the sound of the sea, focusing on this evocation could be one of the possible focuses, though enhancement of the minute details that in its sound manipulation constitute the codification components of a semiotic network, it could be possible to focus on how that sound material operates on immanent electronic sound variables, of the kind of the “knob-sensibility” elaborated previously, its particular way of recording or of developing a synthesis strategy, etc.

Thus, within genealogic problematic strategy, sounds are set in a problematic relationship, that is, aiming at exposing in its contiguity certain possibilities of understanding each material that become enhanced or altered by this contiguity. Materials are not conceived as closed objects but as instances that purvey a set of culturally confluent codes, individual and collective traces of diverse interactions.

## **5.2 Montage questions**

On the work of French-Swiss filmmaker Jean-Luc Godard, Nicole Brenez elaborates on a certain conception of montage she labels the “question-image”. “Here is the protocol for this aspect: [...] that the image [...] becomes firstly a question, and secondly a critique. This form of the question no longer needs a character, no longer requires a questioner-figure even as a voice-off. Instead, the images become the protagonists themselves, direct and autonomous, of a debate, of an investigation, or of a mystery. The shot is no longer reduced to an illustrative role. It becomes performative: it is an act of displacement, a proposition, and an opening. Such a stylistics of the Question-Image has little by little taken on a major role in the work of Godard ” (Brenez 2004)

This text elaborates on how Godard, rather than following a conventional paradigm of

montage aimed at rendering the trajectory of a narrative, sets up the relationship between images in such a way as to rise questions concerning the axes that traverse them. Instead of tying an image to the following through the building of a represented continuity, the images are not meant to imply each other but are rather confronted in a configuration that problematizes its decodification.

Instead of hiding montage, dissolving its “sutures” into the trail of a trajectory, it is exposed. Rather than pointing into that which is outside of the image, a subject of a narration or an underlying “reality”, it point inwards to the conditions that make possible its understanding.

In conventional narrative cinema the function of montage is to get the images to serve the construction of an overarching logic. Images are then organised following what Gilles Deleuze calls a sensory-motor link, a continuity which represents movement and through which renders an experience of time. This regime is labelled by Deleuze as *Movement-Image*, in which time arises as represented by the constitution of these motor links. He devises the concept of *time-image* to reckon a montage regime which contrasts this scheme by breaking up the subservience to overarching logics.

On the proposed regime of the *time-image*, we read: “Deleuze places the visual field of a film as an archaeological and stratigraphical layer that constitutes a non-discursive practice. [...] These stratigraphical layers are presented by irrational cuts or as depth-of-field shots that indicate ‘any-space-whatevers’ [...] These spaces that insert themselves as if out of nowhere connote pure relations exhibited as optical presences for themselves. They describe layers of time that are disconnected in space, and, therefore, must be read in order to effectuate a layer of virtual memory. [...] There is, in other words, an indiscernibility between fiction and reality, an abyss that creates a time-image that blurs objectivity and subjectivity. The auteur and protagonist are now folded into a film, but simultaneously remain removed from it as well.” (Wahbeh 2005)

Deleuze states, following Bergson, that “we do not perceive the thing or the image in its entirety, we always perceive less of it, we perceive only what we are interested in perceiving, or rather what it is in our interest to perceive [...] We therefore normally perceive only clichés. But, if our sensory-motor schemata jam or break, then a different type of image

can appear” (Deleuze 1985). Montage strategy is fundamental in determining an approach to “what” is seen on the image. The *Time-image* regime, which arises firstly as a “suspension” of the movement-image, further develops into a strategy which builds its whole logic around the problematization of the image understanding.

The question-image’s objective would not be to arrive at a supposedly pure, naked reality of the image, but to set up the montage in such a way that allows us to approach it as involving diverse conditions that define its apprehension. On this perspective, the focus is on the sign not as a detached object, but as a mutable instance.

### 5.3 “A form that thinks” \*

The genealogic-problematic approach to composition stems from a conception of sound organisation parallel to the one proposed around the notion of question-image. If we were to replace *image* for *sound*, the definition would be completely applicable. Paraphrasing the statement above: instead of tying **a sound** to the following through the building of a represented continuity, the **sounds** are not meant to imply each other but are rather confronted in a configuration that problematizes its decodification.

The aim of this organisation strategy is that sound experiences are not subsumed to a latent grammar, but are arrayed in a way that the aforementioned genealogic characteristics and diverse inner logic structures are emphasized and problematized.

When facing a material which is not completely inserted and structured within a code, as within traditional tonal musics, we are faced with the multiple latent threads that could organize its apprehension, the multiple references (to previous grammars and affective experiences) and the conditions of production that it supposes. The aim is to problematize the apprehension of the sound sign considering it as a multiple experience traversed by historical grammars and implied chains of signs.

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\* Closing label on Jean-Luc Godard’s work “Historie Du Cinema”, chapter 3b.

In contrast to figural conceptions which organize morphological units in the assumption of a natural code of morphological contrasts and develops form as trajectories within the multiple planar fields that define a figural apprehension of sound, this approach focuses on the inherent multiplicity of codes at play in the comprehension of sound. Rather than starting from an idea of a rough, malleable matter that can be shaped, it starts from an account of complex events which always already imply a degree of formation and articulates them in a way that exposes integral aspects of their constitution.

Accounts of examples that articulate this strategy will be exposed in the following sections.

#### **5.4 Montage of conditionings, or, composing without a grammar**

##### **5.4.1 A brief introduction to the work of Morton Feldman**

I will delve into the work of Morton Feldman as I consider some of his works as opening up a compositional project which can serve as a model for the development of a problematic approach. My main focus for this account refers to the works belonging to his last period (from approximately 1977 to 1987) which articulate form in a very special way along pieces of quite extended durations (many of them lasting around an hour uninterruptedly). The transformation of the experience of sound apprehension is on these pieces integral to its particular formal strategy.

To account for a small example of the procedures at play in this works I will focus on the first minutes of his piano piece *For Bunita Marcus* (1984), while also alluding to several aspects of the whole of his compositional work.

Although during a long time it had been quite common to deemphasize the “formal” aspect of Morton Feldman’s music, in a misguided assessment due in part to the difficulties in successfully applying conventional analytical tools to his music and to a misunderstanding of Feldman’s infrequent mention of structural elements in his own public lectures and writings, various voices have unravelled the meaningfulness and significance of formal concerns in Feldman’s music. Some of them include notably the work of



musicologists Herman Sabbe (1987) and Catherine Costello Hirata (1996, 2006). These works tend to underline how his formal concerns are intrinsic to his perspective on sound.

Even though many of these pieces are usually heralded as masterpieces of contemporary music, at least to my knowledge not sufficient attention has been given to them as examples of purveying a formal proposal of fundamental significance and originality, worth investigating as a path for future developments.

#### 5.4.2 **On *For Bunita Marcus***

Feldman's sound organisation strategy can be accounted for as a process of creating and re-creating particular conditions for the comprehension of sounds, a strategy which comprises a series of "temporary conditionings and deconditionings and reconditionings" (Sabbe 1987).

*For Bunita Marcus* (see appendix for annotated score) starts with two clearly demarcated segments (Bars 1-4, 5-8) which can be clearly identified by the prominent extended silences after each sound sequence. If we would hypothetically stopped the music after this first two segments (on Bar 9) it could be argued that we had heard the exposition of two "motifs", following the habits imposed by an inherent musical tradition.

The significant fact is that this reading of the first 8 bars cannot be sustained later on. The sound organisation subsequent to this opening segments gradually "contradicts" this reading, rendering the listener into a situation in which this first way of grasping the two initial segments has to be abandoned and the building of different approaches to apprehend the decourse of the sound material becomes necessary.

The motivic grasping of this material could be supported, besides their obvious demarcation by the longer silences, most significantly, on both segments' clearly contrasting identificatory features. Segment 1 can be characterised by the start of the segment with a repeated note, the inclusion of bichords as well as single notes, and a 2 octave pitch range. Segment 2 does not include any of these characteristics, while its main identificatory marks are, in opposition to the repetition of a note, the downward movement

(considered, following its subsequent expansion, as the smallest unit of what could be termed as “oscillation” behaviour), it comprises only single notes, and it is restricted to a range of one octave. Besides, the “motivic” impression could be also emphasized by the appearance, in the second segment, of a slightly extended duration between the two last notes, suggesting a “relaxation” behaviour which could bear the impression of a at the closing of each segment, a longer duration between the last two notes, emphasizing what could be interpreted as a closure of a “phrase”.

That this contrast is exposed at the beginning of the piece enhances the fact that the motivic reading arises from the application of latent habits as the preliminary condition for approaching a music with which we approach the start of a statement. The music then doesn't start from a neutral vacuum, but from a predisposition determined by usual listening practices in western music.

Segment 3 starts by identifying itself, given the imprint of the first two clearly defined segments, with the second segment. It opens with the same downward note movement and the same notes (Bar 10), though immediately conjoints this behaviour with a component taken from segment 1, the C#, which had not appeared in segment 2. Afterwards (bar 12), the “inclusion” of material from segment 1 is sustained by adding a C# repetition (just like in bar 1) though this time in a different register. This third segment goes then back to the initial note of segment 2, Eb, to then constitute an “extended” oscillatory movement which seems an expansion of segment 2 behaviour, although this time with three notes and repeating the pattern twice. The whole segment stays in one octave, and finishes with the “closure” figure (like segment 2). Although, the duration of the whole segment more than doubles it (from 3 to 7 bars).

Segment 4 (starts in bar 18) starts with an “oscillatory” kind of movement (of the segment 2 type), though this time it is an upward, rather than downward movement, and it starts on a C#, which was segment 1's initial pitch. On the next bar it adds an octave change, which was a characteristic of segment 1 and goes into bar 20 to repeat the jump of a ninth which had previously only occurred in segment 1 (bar 3). Except that now, because of the continuity from bar 18, this ninth jump can be heard as a variation of the “oscillation” behaviour. The establishment of this pattern is extended in the next two bars, with the appearance of a new octave, as a kind of transposition and inversion of bars 19-20. This

segment goes on to conclude with a repeated C# and the extended octave oscillation, replicating the note sequence of the middle portion of segment 2 (bars 11-14) though this time including an octave jump and the closure figure at the end which has been repeated on segments 2, 3 and 4.

Segment 5 is only two bars long, and it takes the oscillatory behaviour in the note pattern that started the previous segment 4, although it expands it into three different octaves, for the first time, and involves the lower 3<sup>rd</sup> octave for the first time, although the amount of octaves used is repeated from the previous segment. The short nature of the segment is definitely significant, as it seems to break for the first time the pattern of various cells per segment.

Segment 6 takes the oscillatory movement already exposed and further expands it, for the first time shaping it as a kind of “bounce” note movement (Eb-D-Eb followed by C#-D-C# in bars 33-36). Furthermore the pattern is also extended for the first time into a four octave range and it becomes the first time in which a segment does not contain any repeated note.

Segment 7 takes the “bouncing” type of oscillation, and the last pitch in segment 6, to extend the oscillation movement, although this time in a reduced range, the first 6 bars within the same octave (Bars 38-43) and then including an octave jump. It also adds, in contrast with segment 6, a repeated note, and for the first time includes the “closure” phrase, which had not appeared in segments 5 and 6, not at the extreme end of the segment, but one bar before it ends (bar 47).

Segment 8 is 4 bars long and comprises only one type of cell, reminding of segment 5, although it uses 4 octaves (compared to 4 of segment 5) and instead of extending the oscillatory movement in a linear, consecutive way, it draws an “interpolated” distribution of octaves.

It is worth mentioning as well that the total duration of all the segments has been every time different (in number of bars): 5, 3, 7, 9, 2, 6, 11, 4.

As can be observed, the procedure of the piece, rather than going on to affirm the “identity” of a motif, deploys a process of successive adjustments in which each segment asks for a reconsideration of the axis of what was heard on the previous one. Where segment 3 suggested a criteria of variation and mixture of the first two segments, segment 4 takes up an aspect of segment 3 to use it as a basis for a new transformation. A certain repetition of material from segment 1 in segment 4 is now heard from a different perspective (as oscillation) because of the context. Segment 5 will break a pattern which had not been broken before (that of constituting segments on at least two cells) to impose a new reconsideration, a reconsideration in a different category, though using material that appeared before. In segment 7 the “return” of a characteristic from the beginning (1 octave range) sounds like a variation of the pattern which has been established in segments 4, 5 and 6, rather than as a recapitulated material.

The deployment of slight changes that determines a reassessment of the previous material continues throughout, adding in each segment new aspects within the material that get highlighted through subtle changes. An interesting example comes in Segment 14, where not only a new variation appears, but what could be termed actually a new “situation of variation” appears, which involves that the “degree of change” is altered. Where throughout the previous segments we could see how features were more or less added one by one (extension of an octave, shift from oscillation to repetition, new oscillation pattern), in segment 14 more than one feature is introduced, as a chromatic scale in pitch appears for the first time, an ascending pattern appears for the first time, and a new rhythmical figure appears for the first time (bar 13). The interesting thing about this segment is that it adds this new ‘layer’ of variation, which accounts for the “amount” of variation of each segment.

This last point of the analysis recalls Catherine C. Hirata’s argument on his essay “How to make a difference”. Within this context she claims that, on the analysis of Feldman’s early pieces (which were much shorter and didn’t use any kind of pattern repetitions but rather sequences of single chords) it is possible to follow the trace of Feldman’s intention to “differentiate” sounds as much as possible. He quotes Feldman as saying that he “wanted [his] chords in a sense to be very different [one] from the next, as if almost to erasing one’s memory of what happened before.” Hirata develops this idea on the piano and cello piece

*Durations 2* by stressing that the main procedure in Feldmans deploying of pitch relationships between chords, was to develop “categorical differences”. This means that, rather than deploying chords with diverse pitches and put the stress on a sequence of diverse pitches, the organisation would create a configuration in which “sounds *x* and *y* are differentiated in one respect, but sound *z* is differentiates -often from both *x* and *y*- in another respect. The F3-F6, for example, is differentiated from the piano’s first four sounds in terms of register and number of pitch classes, but the [subsequent] Bb7 is differentiated from the F3-F5 –and the first four sounds- in terms of number of pitches.” (Hirata 2006)

The stressing in this processes of differentiation and diverse layers of differentiation arrives where the “sense is not just of one sound seeming attached to another, but of one sound losing much of its identity to another.” (Hirata 2006)

One of the interesting aspects of this is that form is conceived in a particular way following from these procedures. Repetition, in the case of a piece like *For Bunita Marcus* is, rather than aimed at stressing something that “came back”, as an identification of how something known can be apprehended in this new situation.

Each segment articulates, redefines what has just been heard, it “constantly reorients the listening process” (Sabbe 1987). The segmentation of units is even mutably defined, as the variations and categorial variations reorient the agglomeration or separation of aspects of the sound material, and even the of sound itself (as in the example of Nono’s timpani). The axis shifts from a model of an object that is varied, which sustains identification as central to the development of a path or trajectory, to a model in which shifting differences stress the experience of decodification at play in organising of perception. The axis is shifted to the action of the perceiver, and the ways in which it imposes conditions to understand the sound.

As we can see, although the material procedures of variation are not a novelty in themselves regarding music history, it is the different focus of this procedure that is significant.

Each reconditioning puts forward by a segment seems aimed at a process of destabilizing the previous conditions of understanding. It does not represent time, driving

variations as in a forward movement, reminding of the regime of the time-image or question-image. The type of organisation could be called more rightly syntactical, in that it is based on shifting the inner relations of sound materials, in a procedure which points inwards, into the conditions embedded in the same material.

In another essay, Hirata focuses on an experienced linked to the Cowell-Cage inspired concept of “the sound themselves” (Hirata 1996). Through tracing Feldman’s early statements of looking for a sound “which would fully eradicate compositional rhetoric” (Feldman quotes on Hirata 1996) Hirata arrives into dealing with those pieces in which Feldman, rather than following the path of his first, more indeterminate pieces, or Cage’s open contexts, constructed pitch specific pieces. Through the analysis of these pieces, Hirata arrives at an understanding in which form or sequence is constructed with the objective of defining way of hearing a sound.

Rather than devising composition as creating bonds between the chords, or to discard form altogether aiming at a “stripped-off” encounter with sound, a set of chords would be organised contiguously so as to enhance, through a series of differentiations, a specific experience or reading of a subsequent chord. Hirata concludes then that Feldman position implies that to create the conditions for detaching sound from the functions of inherited grammars, it was necessary to create a specific strategy to dismantle this functions.

“Was this the idea? That a composer might put sounds together, one after another in succession, yet not much be interested in how they sound together? That succession might be the means largely - or even, only - of conferring qualities on each of the individual elements of the succession? So that everything normally experienced as relations between sounds is experienced as qualities of each of the individual sounds, as qualities inherent in those sounds, just as is inherent each of those sound's timbres? So that we might experience such a sound ‘very fresh into the moment and without relating it’ yet still be moved?” (Hirata 1996)

The result is that sound’s value is not given within the compositional strategy on the basis of a morphological absolute but as essentially plural, dependant upon the situation which conditions its grasp.

I would stress that, while the figural is one coexisting aspect of Feldman's sound deployment, the result of Feldman's process is to erase its significance. While it starts from the figure, the form drives us away from its role as fundamental. The successive process of reconstitution shifts the focus into the conditions of hearing the sound rather than the objects. I can relate this to my experiential account of hearing to these pieces. There was usually a moment in which the hearing of the piano was transformed, not only as a reassessment of the tactile experience of the sound of the piano, but into an experience in which each piano sound was infused by a virtual "hearing" of possible relationships of the sound which were actually not being played, each sound as if relating to a whole range of possible sounds (some as a kind of "memory" of other piano musics). As every aspect of it could lead into many diverse directions at the same time.

#### 5.4.3 "Make sounds out of pitches" - A model of genealogic-problematic form

As Sabbe exposes at the beginning of his article. Feldman always starts from a particular sonority. "say it starts with [...] C4-B4: not just-though also and importantly so- a major seventh, but this particular major seventh sonority, with this particular octave placement, this particular metric placement, this particular timbral pigmentation" (Sabbe 1987)

As it is common practice in Feldman's music, this first sonority or chord will probably remain "unadorned" and "unconnected" from other sound components that would render it into a phrase. In his later pieces the initial materials will change from a sole sonority (a chord) to a simple pattern, much like in *For Bunita Marcus*. Nevertheless, the fundamental issue is not this but that this "sonority" is isolated from more complex functional or gestural relationships, and that it is conceived as singular in very diverse aspects.

This isolation is essential for the deployment of the whole compositional strategy. The fact that this first singular and essentially simple initial material is not immediately linked through gestural or functional relationships allows to focus on the sound in all its plurality. This would not be possible if it were the case that the material would be set in a in a functional relationship from the beginning. The isolation allows for the setting up of

contiguities with yet other isolated materials and in this relationship of reciprocal conditioning enhance the multiple aspects that can constitute its apprehension.

There is no bond added to both materials, but rather a mutual exposition that enhances their differentiation.

Form is conceived as a configuration which yields a particular reading of the sounds. It is not determined by a single rationale, but is developed in a process, a montage of conditionings. Its function is precise, to affect particular readings of the sounds. Without the deployment of this form, the destabilization of patterns of understanding wouldn't happen. It problematizes sound, as its comprehension is questioned, exposed as not fixed. It is genealogical, in that every instance involves a trace, a previous path.

It could be argued that Feldman's *For Bunita Marcus* problematizes the hearing of piano sound, as the singular conditions of the experience of hearing are at play in the proposal of the piece. Maybe this piece can be conceived in this way even more than others (though this is not a definite segment) as the extreme simplification of the starting material: one single piano note, and its whole ca. 70 minutes architecture deployed from this initial material, seems to enhance the basic experience of the sound of a piano.

"Make pitches into sound" (Feldman 1985), Feldman's quote, points, in my view, to this essential axis of his formal strategy. As I stated at the beginning, form is linked to the objective of deploying a certain understanding of sound. This quote points into the possibility of conceiving a process which transform the experience of a same sound.

To turn pitches into sounds means rehearing the same material in a different way. Basically detach them from a way of hearing this sounds which gives them a role within a grid and structures its organization from this starting ground. Hearing pitches is, as in Deleuze account of the montage regimes, hearing *something* in the sound. As stated in that point, we always hear *something* in the sound. This position doesn't attest for a pure ground of sound which lies "beneath" that of pitch (or other grid-like parametrizations). *Into sound* implies *into the plurality* of possibilities which a sound means when it is not subsumed to only one perspective of understanding.



This is how this quote becomes a “formula” for musical form, as it testifies for a strategy which focuses on enhancing the possibility of listening being refocused through a certain experience.

It is widely known that Feldman never delved into electronic music, nor in the possibilities arising from unconventional sound production on traditional instruments. It would be wrong to conclude that this fact implied a disinterest in the domain of sound. Quite on the contrary, the previous assertions support the specificity of an approach whose main concern deals with focusing on the experience of sound. Though following Feldman’s proposal sound is always an experience of sound, and as such this it involves a series of conditions.

### **5.5 Electronic media, Electronic sound**

Media exposes us to a regular experience of decodification, as it was elaborated around the Kittler quote in chapter 3. Media develops its own codes which we train ourselves into decoding.

As it was put forward, particular uses constitute the material of media. Much like in the case of a silkscreen stamp, the mark of its qualities (tactile, particular edges, design) brings forward significations embedded in it that go beyond what could be abstracted as the particular “figure” of it. The embedded qualities, implications and codifications will be as significant as the figure in determining the significance of the sign.

In massive sound media many uses become codified, like the use of stuttering cuts in popular radio or TV with the arousal of the digital, or the use of particular reverbs that become landmarks in themselves, thus defining identifiable signposts codified within the practice. Dealing with the conditions of media means dealing with the conditions of knowledge, with how the framing of a medium and the particular “tension” developed within its boundaries constitutes the sign.

“Van Gogh began with canvas of a certain weave on wooden stretchers of a certain size, prepared, distributed and marketed in certain ways; he used colours in a certain state of preparation, certain brushes and knives, and his use of materials, and the techniques he

employed, all belonged to traditions of making and its significance. The personal style evident in the emphatic and impulsive gestures recorded in Van Gogh's painting is significant within the specific tradition of easel painting, an acknowledged arena of imaginative performance with its associated issues and values, including the question of the significance of pictorial facture itself. It is relative to these traditions that both the continuities and departures of Van Gogh's style are to be seen and understood historically." (Summers 2003)

Sense and sensitive experiences rise within the material and cultural conditions of each medium. This is very present within the realm of electronic media, where those two areas of condition are also determinant of the circulation of links and implications

Within the sphere of popular music and massive media sound along the past century, media technology has become increasingly fundamental, and has been determinant in establishing a particular emphasis on the role of timbre within it. The practice of popular musics, centered around the axis of rock music, has evolved around the development of electric and electronic technology, firstly on the amplification strategies as referred to in chapter 2, and then through the involvement of purely electronic synthesis procedures, and, probably most significantly, into the integration of the whole process of music/sound creation as a studio product. "Isn't it simply obvious that we are now in a period where the media of reproduction and the instruments of musical production are almost by definition cross-bred to the point of unrecognizability?" (Sterne 2007)

What in the rock aesthetics jargon is known as the quest for "*the sound*" implies a particular attention to the construction of a set of characteristics that identifies a particular band's music in a virtual integration of the group or song's timbral characteristics. Within a practice in which the parameters of pitch, duration and dynamics follow strongly standardized conventions, the imprint of diverse combinations of technology, from characteristics of amplification device, recording strategies and DSP procedures in constructing an almost physically defined experience of timbre became substantial in defining an impact of each significant instance along the history of this music. This aesthetical concern yields a special attention to the details constituting the timbral construction. They build timbral "codes", which in many cases become the strongest aspect of the music's imprint.

The significance of non-classical musical parameters in the evolution of rock music was present since its inception. “Once asked what the difference was between ‘the old blues and the new,’ [Jimi] Hendrix replied simply, ‘Electricity.’ ”. This apparently obvious quote evidence that significance. Of course it is not possible to *hear* electricity, so it is the trace of it that can be accounted as this musical material. But the implication of this fact is a strong shift in perspective towards timbre amidst the heart of popular culture. Within rock culture and its extensions, timbre ceased to be linked to a source, to become a mutable experience traversed by a long series of manipulations far removed from the conditions of physical reality or physical space. “Steve Waksman’s book on the electric guitar (1999) clearly shows that the amplifier and studio were as much crucial parts of the instrument as the pickups and strings.” (Sterne 2007)

This condition is imbricated in the practice of popular music and is embedded in the sound consciousness of modern society. The tactile in the experiences of ambient music or the use of hiss or fuzz from recording technology as they were referred to in chapter 1 are imbricated in a natural tendency to work with the singularities of media sound.

Within the web of media imprints, the mark of particular technological and aesthetical configurations become significant within culture, and at certain points more fundamental in the inner logic of sound’s experience than references to discursive strategies.

Electronic sound is media sound because the massive media of our society is deeply inhabited by traces and aspects of electronic manipulation. Media sound is electronic sound as the constitution of the medium is intermingled on its uses. Hearing electronic sound involves the combined perspectives of tactility, traces and code in our experience of media.

The genealogic problematic approach to electronic sound deals thus with this material as defined in a process of appropriations and imprints proper to a media reality. It focuses on the experiences of a mutable space which involves cultural and embodied trails.

## 5.6 Development of a genealogic-problematic conception on two of my works

Within a genealogic-problematic strategy, a work always starts from a singular material. Singular in that it is not conceived as an instance of a general sound type but that all its particular conditions are accounted for and can become meaningful aspects of the compositional focus. Each piece will evolve as a problematization arising from this initial instance.

Throughout the period of two years, I carried out a process which involved developing two first, shorter works in which the stress was put in the development of certain materials: “El mismo” for piano and stereo soundtrack, and “de los ojos abiertos” for viola and multiple loudspeaker setup.

*De los ojos abiertos* emphasized the acoustic encounter between an acoustic sound producing device, a viola, and a set of loudspeakers. The viola develops its discourse around a single bichord. It serves as an axis which, through variations in the characteristics of this bichord (differences in intonation, mode of playing, amount of noise content, pitch variations grounded on the original bichord) yielded a hearing of the electronic content in diverse ways. The viola acted as a “filter” of the electronic sound, which was mainly developed around a pitch spectrum related to the original viola bichord. Thus the relationship between the two created a blurring of foreground and background, signal and noise. The purpose was exposing the inherent material quality of both source’s spatial diffusion through their continuous friction.

*El mismo* deals more directly with the history of media and the memory of recorded instruments. The acoustic piano is exposed to diverse renditions of recorded piano sound, either diverse in the recording procedure’s spatial and technical characteristics, or in their reference to particular historical qualities of piano recording. The objective was to arrive at a point of mutual exposition in which the conditions which we take for granted in both ways of sound production are emphasized.

Both works explored aspects which were to be investigated and enhanced in the two subsequent, bigger works, in which the project of developing a formal strategy within the genealogic problematic proposal was more consciously pursued.

Nevertheless, these two works shouldn't be considered as finished "proofs" of a compositional project, but rather ongoing attempts within a continuing process.

#### 5.6.1 *Affectio* for 8-channel soundtrack

*Affectio* deals with the experience of recorded spaces and the spatial rendering of reproduction systems. Its source material arises from three main categories: recordings of empty theatres (which comprise continuous sounds from air conditioning systems, light equipment hiss, and diverse electric hums), recordings of easily recognizable sources/figures in public spaces (walk in a forest, public building location comprising bell sounds and steps), and synthesized and processed static noise. The field material includes recordings carried out with diverse technologies, including portable consumer-type cassette recorders, a consumer-type digital dictaphone, a cell phone, contact microphones and a set of professional microphones including omnidirectional microphones, shotgun type and cardioid pattern microphones.

These three main categories of materials are blurred throughout the process of the piece. One of the processes involved implies applying the spectral envelope of a particular recording technology to a synthesized static noise, or to a recorded extract with a different time-domain behaviour. The piece is structured as a series of configurations that create and modify the conditions for apprehending the sound materials.

A brief description of an initial excerpt of the piece can give a broad account of this type of procedure (See Figure 1). The segment starts with the presentation of a material comprised mainly of recordings carried out in empty theatres (Item 1). The sound is diffused through various loudspeakers in a surround 8 channel configuration. The slight spectral differences between the channels and the continuous, static nature of the material yields as a result the "recreation" of a spatial impression, albeit a subtle one. The sound, at low dynamic levels and without any strong foregrounding factor, remains within an ambiguous threshold which constructs a spatial impression on the subtly shifting continuous sound material, mainly involving static noise content and the very slightly fluctuating low and high pitches of theatre machinery.

Some time into the settling of this material, and while the focus is driven into an understanding of this “spatial” rendering, a sound segment which starts and ends with an abrupt envelope and with a much higher volume is superimposed to the first material (Item 2). This item appears as a sort of “contradiction” of the settled focus installed before. The abrupt cuts make it clearly “artificial”, detaching it strongly from any kind of implication of recreation of a space. This is enhanced further by contrasting its emission to only one channel, creating an emphasis in a sort of “framing” of the sound. This second item can be identified as a similar kind of sound as the first one, though, its increased volume shifts the focus, as the recorded hum and noise from the air conditioning becomes now “artificialized”, the static noise as a sort of ambiguous material relating to machinery but as well to a memory of sound devices of a different kind. This item lasts for about 12 seconds (Item 1 had lasted for about two minutes) and cuts abruptly, while item 1 continues. Item 2 “contradicted” the focus settled in the initial segment, rising the question of where the focus of the work is settled. The change in perspective foregrounded the static noise that had been “naturalized” previously, rising the question of its function, ambiguating its pretension of recreating a real space. Was the noise content in the first segment a constitution of a space or an artifact of technology?.

After some time, item 3 appears, which implies a slight variation of 1. It is a similar kind of low level sound implying a spatial impression though through a different filter, shifting the focus to yet another possible direction arising from item 1, that of a modulation of a certain, quite neutral, space. This questions thus the criteria which was pending from the relation between items 1 and 2. Item 4 is another abrupt material, though this time it is a clearly identifiable recording of a public space, populated by voices and steps in a closed, very ample building. This item lasts around 3 seconds and also detaches from the previous situation by the abrupt cuts and heightened dynamics. The artificiality of this behaviour is enhanced by yet again being emitted by only one loudspeaker, though this time coming from the rear

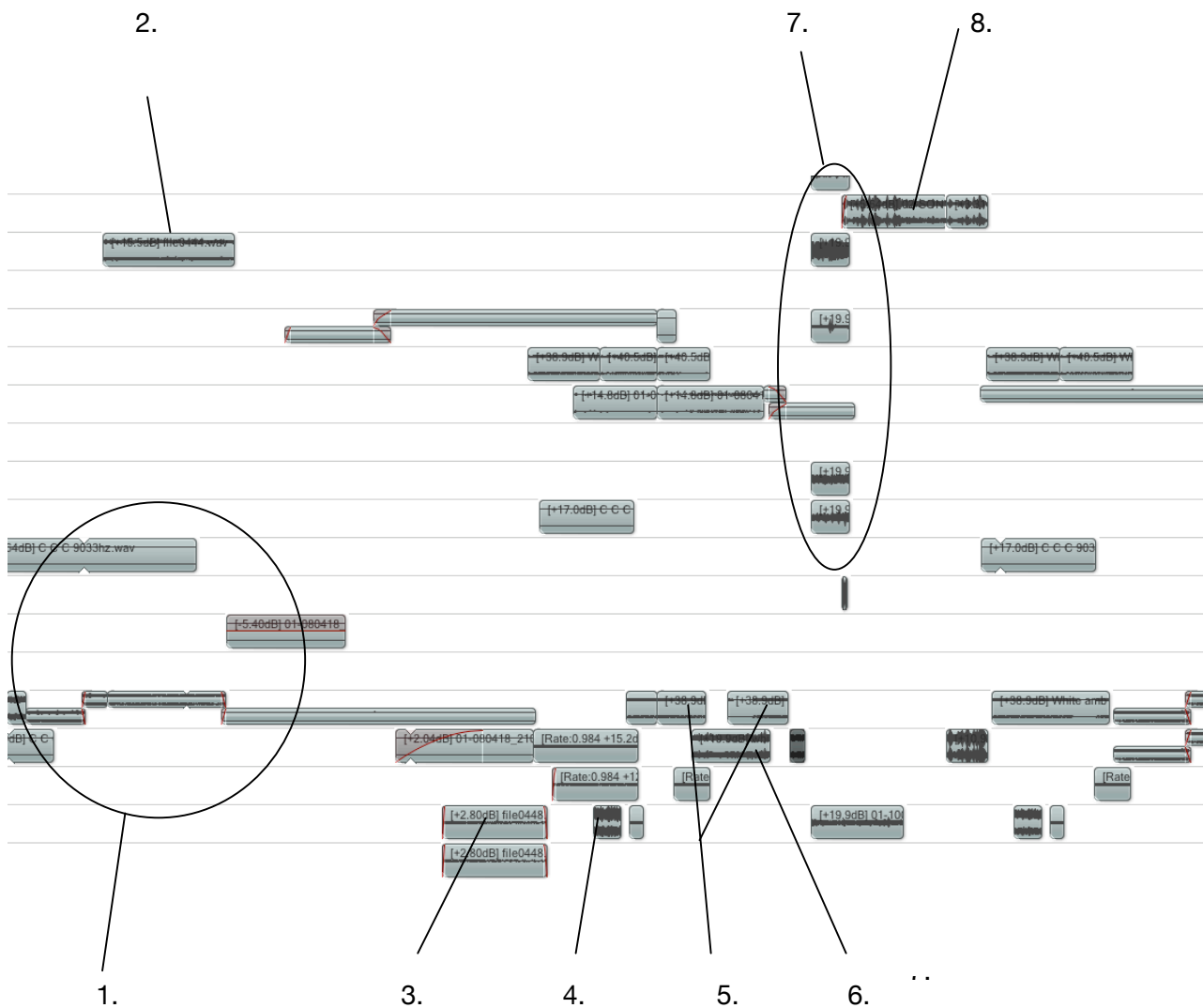


Figure 1. Excerpt of Affectio. Editing Screenshot.

loudspeaker, which had not been used previously. This artificiality contrasts with the enhanced “reality” of the sample. The appearance of an obvious rendition of a space is yet another new category, its short nature on the one hand being confusing as to what the focus of the material is (certain spectral content is linked to item 1, though its behaviour is completely different) and on the other hand opens up the category of the rhythmic. The “rhythmic” quality arising from its short duration also rises a new question on the focus of the apprehension of the sound.

Some time later segments 5 and 6 will take on some of the hints opened up by segment 2, though this time with an obvious reference to much less “realistic” materials. Item 5 is a recording of a space through a cassette recorder, saturated with a lot of lo-fi noise. It blurs the line between what in its material refers to a space or to the memory of these artifacts. Item 6, is a segment of static, electronically produced white noise. It implies a different impression, with digital connotations, specially in its superposition with the lo-fi quality of the cassette recording. The appearance of this pure static white noise puts forward the

extreme range of what had been presented as a conflict between segments 1 and 2. A purely “abstract” material appears as a reference which enhances an “artificial” understanding of the noise content present on the “realistic” materials. On the other hand the impression of the static noise becomes “sensitized” as a tactile-spatial quality, reminding us of a conception of space and tactility as developed in chapter 1.

Later on, segments 7 and 8 will add diverse layers of recordings, with the appearance of the sound of walk in the forest bringing yet another perspective into the particular imprint of the technologies used for recording this material which contrast with the static nature of the first items.

The material of the piece is thus not only the sound of known places but also the sound of known qualities, sound instances as memories of recorded materials. In a kind of strategy akin to Feldman’s structuring of successive conditionings and re-conditionings, the work is constructed through a process aimed at destabilize ways of apprehending these sounds and lead towards a sensitization of this inherent materials of our surrounding media and to our process of comprehending it.

Further layers at play imply the closest “surface” of reproduction technology, manipulating the spatialities of the materials by exploding synthesis procedures that allow for the distortion of the spatial impression, such as decorrelation between sound signals, multiple simultaneous shifting filters, the superposition of subtle sine wave material which brings up a completely different type of spatiality, among others.

#### **5.6.2 *Adjacent sound (Biffures)* for ensemble and soundtrack on 6 loudspeakers**

*Adjacent sound (Biffures)* deals with the differences in sound characteristics arising from instrumental sound production and electronic/loudspeaker produced sound.

The sound of instrumental ensemble is contrasted with the sound of a 6 loudspeaker setup comprised of three stereo pairs, each rendering a different relationship with the acoustic environment: A main stereo pair placed in conventional for, a lo-fi stereo pair distributed within the members of the ensemble and an off-stage stereo system placed on



the back of the stage pointing into the walls or on balconies. The superposition of both sound production “units” deploys a range of related materials, sourced at first from recordings of segments from the ensemble. The superposition of materials recorded and more or less unprocessed enhances a first level of differentiation, that present in the diverse spatial diffusion characteristics of the ensemble and the stereo system. The aim is to enhance those subtle peculiarities present in the practices of recorded sound which shape our habitual listening through electronic media and which are notably different than the experience of interaction of an acoustic instrument with a space.

Through enhancing the peculiar characteristics of loudspeaker emission, the compositional strategy aims at shifting the attention into the loudspeaker as a peculiar physical source. Rather than conceiving it as a blank screen, it aims at foregrounding the conditions embedded in its sound production which bring forward the imprint of these characteristics in habitual uses. The fact is that we are more used to hearing loudspeaker sound in our culture environment than instrumental sound. Instruments diffuse sound in more complex patterns, while loudspeakers construct a more homogenous, frontal field. The aim of emphasizing this difference is bringing this aspect of sound experience into the foreground and experience how they condition our organisation of perception in particular ways.

Advancing from this first layer, further areas are investigated, dealing with the imprints of diverse sound qualities embedded in diverse sound practices. Recorded materials are processed and coupled with the products of diverse synthesis procedures. The exposition of these materials in the encounter with acoustic sound further enhances the differentiation of subtleties within our habits of hearing and the memory of particular electronic sound perceptual landmarks. It also contextualizes these uses of electronic sound within a diversity of spatial and tactile qualities, determining a space where they refer to diverse timbral “codes”.

Each timbral difference is thus a condensation of a previous experience, comprises history of expression. The function of the timbral differences is precise, to expose the confronted diversity of patterns of perception involved in memory.

Formally, the piece is constructed of 24 segments. These segments are constituted of mainly non-gestural blocks. This condition, much like it was proposed regarding Feldman's strategy, allows a focus on the conditions involved in the experience of the sound, rather than setting them up in a bond of directionality which would immediately enhance one aspect of our apprehension over the rest. Sounds are deployed contiguously (in space, in time or superimposed) and through this procedure enhance in each other diverse aspects of their constitution.

The sequential organization of the segments is aimed at gradually opening up links between seemingly unrelated "registers" of electronic sound. While the instrumental material varies in each segment, around a more or less homogenous restated chord, the inner tactilities of the instruments relationships, the electronic material superimposed to it opens up diverse instances of techniques and spatialities, enhancing how the qualities we usually assume as conditions of the material (certain internal behaviours) can be foregrounded and enhanced in their differentiation.

## Epilogue

In recent years Sound Art has emphasized a perspective towards sound which enhances its understanding as involved in contextual implications. It has focused on how the experience of sound is embedded in social conditions, in the shaping of particular world views, in its relationship with the organisation of everyday perception.

This development has tended, in some circumstances, to draw a line between these practices and time-based proposals which are to be catalogued within the domain of music. A certain categorization defines music as the domain of a symbolic treatment of sound, whereas implications of sound beside this area are to be located within the space of sound art. This distinction doesn't account for many diverse practices and developments which certainly blur, traverse and questions these borders.

The genealogic-problematic conception as I've proposed makes use of a time-based strategy, as has been clear from the exposition in chapter 4, which conceives sound as an instance of experience in which diverse trails and layers coincide. Along this path, understanding sound as purely symbolic does not fulfil the requirements of the conception, as this perspective understands the constitution of the symbol as grounded on a code, and the objective of the work would be rather to lay exposed the way code operates on sound apprehension. A purely detached account of the sound, without implication of a subjective experience and claiming the possibility of accessing a pure, objective acoustic reality would seem to remain outside of it as well, as the implication of the perspectives of tactility, traces and code, assumes that its focus always embeds a complex intertwining of conditions. Conditions which are, paraphrasing Gilles Deleuze, "individual and collective at the same time".

From this point I consider that a blurring of the line between the more or less vaguely defined distinctions between sound art and music can be a resourceful endeavour.

The genealogic problematic proposal doesn't take for granted a space where music already exists, but looks for creating a conflicting situation which destabilizes functional or inherited understandings of sound, to open a questioning of this comprehension.

Within today's culture, in which the insertion of technological media in our lives strongly determines the shaping of our understanding of the world and ourselves, I believe the possibility of developing an art which problematizes the way signs and modes of perception are developed is a needed and valuable project.

## References

- Barker, J. (2009). *The Tactile Eye: Touch and the Cinematic Experience*. Berkeley, CA: University of California Press.
- Barreiro, D.L. (2010). Sonic Image and Acousmatic Listening. *Organised Sound*, 15(1), 35–42
- Bayer, F. (1981). *De Schonberg a Cage: Essai Sur La Notion D'espace Sonore Dans La Musique Contemporaine*. Paris: Klincksieck.
- Boulez, P. (1957). At the Ends of a Fruitful Land. . . *Die Reihe*, Vol I: Electronic Music, 19–29.
- Bregman, A. (1994). *Auditory Scene Analysis. The Perceptual Organization of Sound*. MIT Press.
- Brenez, N. (2004). The forms of the question. In J.S. Williams, M. Temple, M.Witt (Ed.) *For Ever Godard*. London. Black Dog.
- Chion, M. (1986). La dissolution de la notion de timbre. *Analyse Musicale* vol.3, 2eme trimestre, pp. 7-8
- Chua, D.K. (1999). *Absolute Music and the Construction of Meaning*. Cambridge University Press.
- Colebrook, C. (2005). The Space of Man: On the Specificity of Affect on Deleuze and Guattari. In I. Buchanan, G. Lambert (Ed.) *Deleuze and Space*. Edinburgh University Press.
- Connor, S. (2004). Edison's Teeth: Touching Hearing. In V. Erlmann (Ed.), *Hearing Cultures. Essays on Sound, Listening and Modernity*. Oxford: Berg Publishers.
- Costello Hirata, C. (2006). How to make a difference. *Contemporary Music Review*, Volume 25, Number 3, pp. 211-226(16)
- Costello-Hirata, C. (1996). The Sounds of the Sounds Themselves: Analyzing the Early Music of Morton Feldman. *Perspectives of New Music*, Vol 34 No 1
- Deleuze, G. and Guattari, F. (1987). *A Thousand Plateaus: Capitalism and Schizophrenia*. Minneapolis: University of Minnesota Press.
- Deleuze, G. (1969). *Logic of Sense*. Columbia University Press.

- Deleuze, G. (1986). *Cinema 2. The Time-Image*. University of Minnesota press.
- Demmers, J. (2010). *Listening through the noise: the aesthetics of experimental electronic music*. Oxford University Press.
- Feldman, M. (1985). Darmstadt Lecture. In *Essays*. Editions Walter Zimmermann
- Gage, J. (2000). *Color and Meaning: Art, Science, and Symbolism*. University of California Press.
- Ganchrow, R. (2012). Shapes of Time: an experiential account of sonic spatiality. *Music Space Architecture*. Architectura & Natura Publishers. Amsterdam, NL.
- Gibson, J. (1966). *The senses considered as perceptual systems*. Boston: Houghton Mifflin.
- Kahn, D. (1999). *Noise, Water, Meat: A History of Sound in the Arts*. Cambridge, Mass.: MIT Press.
- Kim-Cohen, S. (2009). In *The Blink of an Ear: Toward a Non-Cochlear Sonic Art*. New York: Continuum Publishing.
- Kittler, F. A. (1999). *Gramophone, Film, Typewriter*. Stanford, California: Stanford University Press.
- Lachenmann, H. (1983). Quatre aspects du matériau musical et de l'écoute. *Revue musicale suisse*. 123/6,
- Lachenmann, H. (2003). Interview with Paul Steenhuisen. *Contemporary Music Review* Vol. 23 no. 3/4
- Landes, D.A. (2007). *Le Toucher* and the Corpus of Tact: Exploring Touch and Technicity with Jacques Derrida and Jean-Luc Nancy. *L'Esprit Créateur*, vol. 47, no. 3, 80-92.
- Lerdahl, F. (1987). Timbral Hierarchies. *Contemporary Music review* Vol. 2-1
- Ligeti, G. (1960). Metamorphosis of Musical Form. *Die Reihe*, Vol.7. Vienna: Universal Edition.
- Link, S. (2001). The work of reproduction in the mechanical aging of art: Listening to noise. *Computer Music Journal*. 25/1: 34–47.
- Malloch, S. (2000). Timbre and Technology: An Analytical Partnership. *Contemporary Music Review*. Vol. 19 part 2

- Massumi, B. (1998). Sensing the Virtual, Building the Insensible. *Architectural Design: Hypersurface Architecture* 68.5–6: 16–24.
- Milutis, J. (2008). The Biography of the Sample: Notes on the Hidden Contexts of Acousmatic Art. *Leonardo Music Journal*. Volume 18,, pp. 71-75
- Monelle, R. (2000). *The sense of music*. New Jersey: Princeton University Press
- Nancy, J.L. (1994). *The Muses*. Stanford, California. Stanford University Press.
- Sabbe, H. (1987). The Feldman Paradoxes. A deconstructionist view of Musical Aesthetics. In Th. DeLio (Ed.) *The music of Morton Feldman*. London: Greenwood Press
- Sherman, G. (2000). Dangerous Improv. *Signal to Noise Magazine*, july.
- Siepman, D. (2010). Agency and improvisation in the Ambient sound world. *Perspectives of new music*. Vol. 48 - I
- Summers, D. (2003). *Real Spaces: World Art History and the Rise of Western Modernism*. New York: Phaidon Press.
- Suvvin, D. (1987). Approach to Topoanalysis and to the Paradigmatics of Dramaturgic Space. *Poetics Today*, Vol. 8, no.2
- Sterne, J. (2007). Media or Instruments? Yes. Montreal, Quebec: *Offscreen*. Vol. 11, Nos. 8-9.
- Thomson, P. (2004). Atoms and errors: Towards a history and aesthetics of microsound. *Organised Sound*, 9(2), 207–218.
- Thomas, Ph. (2006). Composed silence: Microsound and the quiet shock of listening. *Perspectives of New Music* 44/2: 232–248
- Wahbeh, F (2005). *Forget Godard: The Cinematic Abductions of Pier Paolo Pasolini and Guy Debord*. Master's thesis. School of the Art Institute of Chicago.
- Wishart, Trevor. (1986). Sound symbols and landscapes. In S. Emmerson (Ed.) *The Language of Electroacoustic Music*. Houndmills, United Kingdom: Macmillan.
- Whitelaw, M. (2003). Sound Particles and Microsonic Materialism. *Contemporary Music Review* 22(4) 93-100.

Young, J. (1996). Imagining the Source: The Interplay of Realism and Abstraction in Electroacoustic Music. *Contemporary Music Review*. Vol 15-1. pp. 76



## Appendix

Content of the accompanying CD:

- . (for chapter 1) Examples referring to the tactile perspective
- . (for chapter 1) Examples of the use of hiss, fuzz and other artifacts of technology in experimental electronic music
- . (for chapter 4) Annotated fragment of Morton Feldman's *For Bunita Marcus*
- . 3 works

live audio recording and scores corresponding to:

-*de los ojos abiertos*, for viola and multiple loudspeaker setup

-*El mismo*, for piano and stereo soundtrack

score corresponding to:

-*Adjacent sound (Biffures)*, for ensemble and soundtrack on 6 loudspeakers