

Timbre and Sound

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1. TIMBRE AND SOUND

First of all, it is important to point out that we found, very often, a confusion between the two terms, sound and timbre. I will give two quotations to show the way this confusion happens. Please, note that it is not a critic. It is an observation, which will lead us to understand why some musicologists choose to focus on the notion of timbre and some others to the notion of sound.

Let's quote first Emily Dolan and Alexander Rehding in their article "Timbre. Alternative Histories and Possible Futures for the Study of Music" from *The Oxford Handbook of Timbre* they edited. I just quote the first paragraph of this text, while underlining (italics):

"For the longest time, musicology treated *timbre* as an afterthought. In his neat systematic taxonomy of the discipline, Guido Adler, assigned the last column of this chart for the 'history of music instrument', while making it otherwise clear that music and musicology was about notes, not *tones*: indeed, musicology begins at the moment when tones are measured and analyzed for their pitch. *The trembling air columns that our ears perceive as musical sounds, in specific timbres*, were merely a material means serving a loftier goal: the disciplinary gaze was firmly locked on *geistfähiges Material* [spiritual material], as Adler's predecessor Eduard Hanslick called it, that is, material suitable for cogitation. In this system, *sound* appears as little more than a necessary evil, a messy complication for an otherwise pristine structure" (E. Dolan Emily, A. Rehding, 2021, p. 3; italics are mine).

And let's quote Zachary Wallmark in his recent book *Nothing but Noise: Timbre and Musical Meaning at the Edge*, a book I'll come back to later:

"Many observers over the years have seen *timbre* as disclosing the world of material things; it does not signify in the musical sense. Maurice Merleau-Ponty [...] says baldly: 'In music [...] meaning appears as linked to the empirical presence of the *sounds*, and that is why music strikes us as dumb'. Correction: that is why *timbre* strikes us as dumb. It is too close to the material, whereas music seems to demand the ideal; it is too direct, signifying nothing other than itself, whereas music needs to mean something beyond the wood, steel strings, tube amplifiers, and moving fingers that give it voice. To Emmanuel Levinas [...], the *sound* of the cello is just that: 'cello-ness'. *Timbre* is objective evidence of physical presence, nothing more" (Z. Wallmark, 2022, p. 3; italics are mine except in "that is why *timbre* strikes us as dumb").

I think that, in these two quotations, there is a voluntary confusion between timbre and sound. In fact, for these authors, it's as if there were only a category, timbre or sound, and that they choose to focus on the word "timbre", while using the word "sound" when they don't want to repeat the word "timbre". I suppose that in this way of thinking, people found that the notion of "sound" is a too general category, too rough, that it lacks precision, or that it is a kind of obvious matter; while the notion of "timbre" would be a more refined category, more precise and which calls for detailed analysis. Possibly, they are thinking that the notion of sound represents music itself from the point of view of a pure materiality, a point of view they want to dismiss, with showing that sound has also a signification, through the notion of timbre.

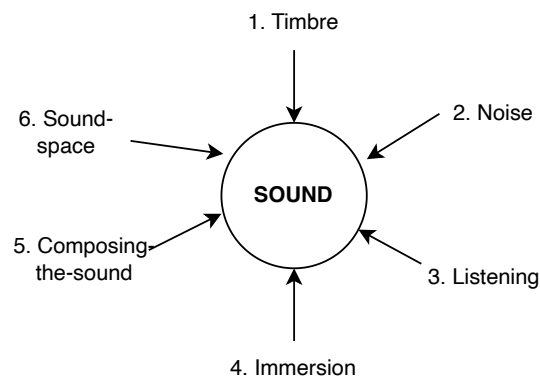
2. THE MORPHOLOGICAL APPROACH: FROM MUSIC TO SOUND THROUGH TIMBRE

I will go back later to the idea of sound as a pure materiality and of signification related to the notion of timbre.

Let's first examine the difference between timbre and sound from the *morphological* point of view. Here, I will summarize what I developed in the book for which Charalampos Saitis probably invited me, *From Music to Sound. The emergence of sound in 20th and 21st century music*. The book was first published in French, in 2013, it was then translated into English, abridged and updated in 2019.

In this book, I establish a general history of the increasing interest for sound in Western music, in particular in western modern (contemporary) music. To quote the summary: "From Debussy to contemporary music in this early 21st century, from rock to *electronica*, from the sound objects of the earliest *musique concrète* to current electroacoustic music, from the *Poème électronique* of Le Corbusier-Varèse-Xenakis to the most recent inter-arts attempts, sound has become one of the major wagers – if not *the* major wager – of music. Everything has happened as if music had begun a change of paradigm: we are going from a musical culture centred on the note to a culture of sound. And it could be wagered that this radical change is at least as founding as the revolution that, at the beginning of the 17th century, gave birth to tonality: as regards the most advanced music of the 20th century, we notice with distance that the adjective 'atonal' corresponded only to its potential for destruction of the past, with the refocusing on sound constituting the constructive side".

To describe this history of the emergence of sound, I have chosen not to write a linear history. Indeed, the book is made of several histories, six in all:



The first history deals with timbre. It shows how, in the history of western music, timbre becomes increasingly important, thanks to the simultaneous development of two complementary paradigms. The first tends to *substitute timbre for pitch*; arriving at the utopia of a language of timbres, it comprises several decisive stages, such as the birth of orchestration, the development of orchestration in the 19th century, the concept of *Klangfarbenmelodie* or the frenzied multiplication of new playing methods in post-war instrumental music. The other major paradigm is presented as a *prolongation of harmony in timbre* and is displayed in the colourist harmony of Richard Wagner, or the timbre-chords of Claude Debussy or Olivier Messiaen, the attempt at composing timbre in Karlheinz Stockhausen's earliest electronic music, the timbre-harmony fusion of spectral music or the orchestration assistance software developed today.

Second history, which, in a way, forms a dialectic with the history of the timbre: music's progressive acceptance of *noise*. Noise is not a discovery of today's music. Although it is true that, for a long time, theorists considered it the opposite of so-called “musical” sounds, it innervated music unofficially, either through the needs of imitative music, or through dissonance that developed up to the polytonalities of Igor Stravinsky and Charles Ives or Arnold Schönberg's free atonality. With the bruitism of a Luigi Russolo, the sound research of Varèse, then with *musique concrète*, it made a grand entrance in music. It then developed in avant-garde music and tended to present itself – in free jazz, historic rock or with Lachenmann – as social criticism. And it is henceforth spreading in industrial music, metal, rap, free improvisation or the so-called “Noise” music. We can say that the exploration of sounds of indeterminate pitch not only enriches the musical material but, in addition, changes our very conception of music.

The opening up to sound in its generality is synonymous with a new way of apprehending music. That is why the third history, the history of *listening*, is central in this view. Some continue to assert that advanced music of the 20th century is “difficult” (for the public) but, in truth, that is valid only if the listener hopes to again find in it what characterises music of the past or types of music described as “easier”: melody, harmony, standard forms, etc. The refocusing on sound went hand in hand with a profound change in listening, which, precisely, allows for appreciating the morphological sound inventiveness of music that is sometimes complex in its elaboration but can be easy and pleasant to listen to if we hone our ear to appreciate these morphologies.

The fourth history is devoted to one of the most frequent entries in sound: sound *immersion*. Today, the word “immersion” tends to designate virtual reality, but its meaning can be expanded to include thoughts and discourses that sometimes accompany the refocusing on sound. Following Varèse (1983: 184), numerous composers of instrumental music and, even more, of electroacoustic music, evoke the existence of an *inner life* of sound. They thereby emphasise the fact that, unlike the music theory notion of note, reducible to a point, a sound is endowed with a “thickness”, which can be “listened to” by “diving” into it, as Giacinto Scelsi thought. There is here a kind of hidden history of music, characterised with a spiritualistic approach, with musicians like Scriabine, La Monte Young, Coltrane, Grisey, Scelsi, Jonathan Harvey...

The fifth history is the constructivist one. It can be illustrated by Jean-Claude Risset's famous phrase about additive sound synthesis, “*the composition of sound* replaces composition *with* sounds” (J.C. Risset, 1992: 591), but generalized to music. A part of dodecaphonic and serial music belongs already to this history, for instance Anton Webern's *Symphony Op. 21* and Pierre Boulez's *Le Marteau sans maître*, which are characterised by what we can call “composed resonances”. Then we can speak of “composed sonorities” with composers such as Varèse, Xenakis or Ligeti, with American minimalism and spectralisme. Of course, to this history belong also electroacoustic music, from additive sound synthesis to granular synthesis, which is maybe the most radical sound-based music.

The last history deals with the extension of sound into the space. Music shows that space is also composable at least since the 1950s. Of course, space has always been a part of music, but nowadays we can speak of the *sound-space* hypothesis: the emergence of sound is also

emergence of the space; the types of today's music are not only sound-based but are also soundspace-based.

To conclude about these six histories. As you see, it's not a question of "parameter", they integrated different questions: the question of material (timbre or noise) of course, but also the question of listening, the spiritualist approach, the approach through the idea of composition itself and finally the question of the conditions of sound, which leads to speak about soundspace (it is also important to specify here that space is not a parameter either). Finally, "sound" is not the prerogative of just one of these histories; it results precisely from their combination. Their interaction produces the singular history of the emergence of sound.

3. SIGNIFICATION AND ECOLOGY

3.1. The turn towards signification

This was the morphological approach, where the history of musical timbre is part of a global history leading to the emergence of sound, to music-as-sound. Let's examine now the difference between timbre and sound beyond the morphological question.

First of all, it's important to observe that the notion of timbre is now being studied in other types of music than Western modern (contemporary) music. As for ethnomusicology, we could of course go back to André Schaeffner who, already in 1963, speaking about "primitive people" in general, wrote: "Looking at the way they build certain instruments and the way they play them, it is clear that they are less interested in producing a sound of a precise pitch than in producing a special timbre" (A. Schaeffner, 1963, p. 217; my translation); but such interest was rare at the time. Cornelia Fales, with her article "The paradox of timbre", in 2002, was one of the first to introduce the recent interest of ethnomusicology in timbre. In this article, she criticizes a recording of the 1950s by Alan Merriam, a recording of a Burundi Whispered Inanga or *Inanga Chuchotée*, a musical genre consisting of a whispered text, accompanied by the inanga, a trough zither of eight strings. In these recordings, Merriam positioned the microphone so close to the inanga, that the text is often muffled and inaudible. Fales concludes:

"In obscuring the central effect of Whispered Inanga, Merriam's recordings of the music betray the subtle bias of what has come to be called 'pitchcentrism' or 'timbre deafness', a perceptual proclivity on the part of western listeners, including ethnomusicologists, to focus on melody in music where the dominant parameter is timbre" (C. Fales, 2002, p. 56).

We can also find this growing interest in timbre in popular music studies. In 2018 was published the collective book *The Relentless Pursuit of Tone. Timbre in Popular Music* edited by Robert Fink, Melinda Latour, and Zachary Wallmark, with articles on raves, country music, death metal, Tom Waits, Jimmy Scott, pop music voices, symphonic soul music, Santana, funk music, fusion, California rock Scene of the late 1960s...

In this relatively – at least for two decades now – new interest in timbre, we found again the indifferenciation, or non-distinction between timbre and sound, I was speaking about in the beginning of my talk. Very often, the two terms are used as synonyms. Sometimes it's a question of global characteristics of sound, including for instance the question of the space, so

in my terminology, it would be nearest to the notion of sound; sometimes, especially when it is about voice, it's all about the quality of tone, so it would be nearest to the notion of timbre.

I think that what characterizes this new interest in timbre in musicology (or ethnomusicology if we consider it's a different discipline) is what I was saying in the beginning: that sound would be synonymous of a pure materiality, something that, in this respect would of course be a negative point. Instead, timber, while retaining something from this pure materiality, would also be about signification: it occupies a "complex position" "between materiality and idealist abstraction" (E. Dolan Emily, A. Rehding, 2021, p. 7). To quote again Zachary Wallmark's book *Timbre and Musical Meaning at the Edge*, timbre "shapes musical meaning, historically, culturally, and cognitively". It's "a metaphor for bodily action and experience, a sonic disclosure of the material and affective dynamics of sound production, which are, in turn, corporeally mirrored in perception" (*ibid.*, p. 4). Wallmark tries to advance "a novel, materially oriented understanding of how we conceptualize musical sound, shifting the frame of reference from the 'sounds themselves' to the embodied mind of the listener" (*ibid.*, p. 5).

What is new in this position is that the signification, the meaning is not only the semantics of timbre which continues to be one way to approach timbre. The meaning here has a double root: the "embodied mind of the listener" as has just been said; and society. For this last root, it's important to note that Wallmark explores the continuity between sound (timbre) and noise, showing that noise is a "meaningful sound"; his research is based on "the ethical stakes of timbre by exploring how noise in the acoustic world has in certain cases been mapped onto the social, that is, the 'noise' in a given cultural field" (*ibid.*, p. 6).

I could also quote here Nina Sun Eidsheim, but I suppose that you have listened to her keynote lecture in this symposium. I will only say that, in her book *The Race of Sound: Listening, Timbre, and Vocality in African American Music*, she explores the social meaning of voices (timbres), showing that what might seem natural, such as the voice and its qualities, are socially produced. She suggests that to deracialize vocal sound a listener must stop projecting labels on sound. For her, de-essentializing listening is necessary to stop racializing vocal sound:

"Not only is the timbral identification of race not a direct result of racist views, but, if we work under such an assumption, we will ultimately fail to address and deconstruct racialized vocal timbre. The perpetuation of racialized timbre goes much deeper and *is based on fundamental beliefs about sound*. [...] I posit that the practice of essentializing vocal timbre is the unexamined foundation upon which racialized vocal timbre is maintained. [...] *If the myth of essential vocal timbre is debunked, voices become immune to racialization*". (N.S. Eidsheim, 2019, p. 154; italics are mine).

3.2. An ecology of sound; sound milieus

So, the new interest in timbre is related to the question of signification, of meaning, which extends the traditional interest for the semantics of timbre. Now, what about sound? Does the question of sound exhausted by the question of morphology that I developed? I would like to show that the question of sound does not end with the morphological approach. There is also a discussion about sound that goes beyond the morphological question. This is the *ecological approach* that I develop in my recent book called *Exploring the Ecologies of Music and Sound. Environmental, Mental and Social Ecologies in Music, Sound Art and Artivisms*. It is an approach which is complementary to the approach through the question of meaning.

While the approach through the question of meaning is dealing with the symbolic aspects of music, the ecological approach starts from its materiality. Sound is indeed a materiality, we don't have to be afraid to say that! Today, we observe, "within the social sciences and the humanities, the 'material turn'" (S. Lettow, 2016). The "new materialism" which develops today criticises "classical materialist philosophy, which tends to perceive matter as essentially passive and inert" (*ibid.*). The new materialism advocates "a reconfiguration of the human/non-human, nature/culture, subject/object relationship through a critique of [the] dualistic conception of the world" (S. Babin, 2021) developed by the western modernity.

In this respect, the concept of sound can be redefined. Instead of thinking of it as a kind of neutral medium, a pure matter, we can conceive it as *a network of relationships*. In fact, rather than talking about sound, we could talk about *sound milieus*. We *inhabit* these milieus, just as we inhabit the earth, as writes Tim Ingold (2000). Our subjectivity develops inside and thanks to these milieus. Conversely, the sound milieus include many things that don't belong to our subjectivity, things that animate matter. To quote Michael Stocker (2013: 21), who uses several other synonyms than "sound milieus" for the word sound: "Sound's fluid quality saturates and surrounds us and is by its nature inclusive. We hear things and are included with those things in a common soundfield – as both participants and inhabitants of our soundscapes".

As a network of relationships, characterized by this inclusiveness, sounds, sound milieus, soundfields – I'm less interested to the notion of "soundscapes", but that would be another question – invite us to adopt the ecological point of view, which means listening carefully and studying these relationships. In other words, the main characteristic of sounds and sound milieus, over and above their morphological properties, is that they interact with multiple environments. These environments can be what we call "nature" (or better still: living things), but also society (we can speak here of "social ecology") and of course the human subjectivity ("mental ecology").

We don't have time to develop this issue any further, but I would like to illustrate it by a musical example. This example is what the Italian composer Agostino Di Scipio calls *Audible Ecosystemics* (A. Di Scipio, 2021). In fact, this is more than an example: it's one of the sources of this idea of an ecology of sound and sound milieus I'm talking about – other sources include of course composers from acoustic ecology, sound artists working with field recording, and so on.

Agostino Di Scipio's *Audible Ecosystemics* is a cycle of pieces. It requires simple but very precise apparatus – a nice example of degrowth in music: a few microphones, a few loudspeakers, a DSP (digital sound processing) system (computer, software, audio interface) and a mixer, which is used almost like a musical instrument. There may or may not be a performer. Di Scipio provides detailed notes, with instructions and plans. Here is the instructions for *Modes of interference 2* we will listen to, which doesn't belong to the cycle of *Audible Ecosystemics*, but which is very similar in concept. → **Di Scipio**

In most of the pieces there is little or no initial sound material: the sound is generated here and now by the triangular interaction on which the pieces are built: the interaction between the performer, the DSP patches and the sound ambiance of the room.

Let's listen to *Modes of interference 2* as performed by the Brazilian saxophonist Pedro Bittencourt at university Paris 8, as part of the 2013 conference *Music and ecologies of sound*:

→ Di Scipio, *Modes of interference* 2:
<https://www.youtube.com/watch?v=fHbV9fSxYoA>

I would like to conclude with this musical example. This performance enables us to become aware of sound and sound milieus, to realize their fragility and, simultaneously, their importance. They offer us the chance to take the time to explore the relational nature of sound milieus, which results from interactions between many factors: listening, a place, technical apparatus, bodies, minds, stories...

A final word: it's important to emphasize that this ecological approach to sound is not necessarily opposed to the symbolic approach to timbre, they are complementary.

Thank you!