

The Systematic Grouping of Detection Tools for Properties of Acousmaticity: Binary Tension between Sonority and Pulse

Annotation

The relation of sound and image renders more new questions when facing the contact of two musical worlds: acoustic and electronic. A notion of acousmaticity arises as a key factor in this field. Especially when we talk about acousmaticity separated from any bonds with the specific musical genre.

This article is a modest endeavour to newly identify main elements of acousmaticity and their *modus operandi* in contemporary music. First two dimensions describe visuality of sound and its internal movement. The later gives basis to hypothesis that acousmaticity is closely related to the notion of uncanny.

Keywords: acousmaticity, audiovisual contract, inverted acousmaticity, vertical axis of acousmaticity, horizontal axis of acousmaticity.

To separate a property from its surroundings, a notion of acousmaticity is used. It is the essence of acousmatic sound, which should be separated from any genre and time specific bonds. It deserves additional attention looking from today's perspective. A contemporary composer might describe it like this: it is a degree of the reciprocal relation of sound and image.

Contemporary music is music of new ideas and new expressions. When speaking about acoustic and electronic sound, one should seek a new systematic view of the set of problems related to music composition. Acousmatic sound is the key that unlocks many doors on this path.

According to Leigh Landy (2007: 17), acousmatic music is a direct descendant of musique concrète. The former has inherited the aesthetic guidelines of the later and has expanded them. The question arises, where does acousmaticity originate? Is it an object of listening analysis, music philosophy, or something else?

Firstly, there is a strong temptation to regard this through the prism of listening. This is due to the natural assumption that listening is probably the key element of acousmaticity if we look at it both historically and philosophically. Given these points, the action of hearing is the magical key to the great depths of the acousmaticity phenomenon. As Leonard Meyer and Grosvenor Cooper (1963: 119) stated in their book *The Rhythmic Structure of Music*: "The art of analysis is based upon the art of listening."

However, in the first place listening is a reactive operation. It is a reaction to the matter that *already exists*. As if it is some sort of archeology excavation, seeking to reconstruct processes that caused the form and content of the work of art. Moreover, there is a great number of works that analyze and catalogue the sounding of contemporary electronic music (from P. Schaefer's *Traité des objets musicaux* (1966) to Dennis Smalley's spectromorphology of sound objects (Landy 2007: 96), which describe and systematize the common structures of sonic organization; however the amount of research of global nature is not so comprehensive. In other words, there is a lot of work being done, which describes grasses and herbs, but not so much about the meadow.

The intention to identify acousmaticity related factors in the music composition stage would seem rather complicated at the first sight, even though it would be more convincing. One would come up with a rather brave, but truthful statement that this property is a part of music composition in a first place. The origins of this belief should be looked for not at the aesthetic level (the level of music listening and comprehension, according to Jean Jacques Nattiez, 1990: 153), also not in the immanent structure of the piece, but in the poietic (pre-compositional) musical dimension and its processes.

The musical pre-compositional segment itself bears the initial charge of acousmaticity. In other words, namely a composers' precedent relation with sound describes the aspects typical only to this dimension – how and in what way the relation of light and darkness will unfold. It is obvious that acousmatic phenomena may be simultaneously studied from various points of view; however, this brings the danger of an overexpanded research field to the level beyond one's control. On the one hand, in the contemporary musical context the triad of creation – existence – listening has acquired enough common features with vague lines of separation. For instance, the situation of the improvisational nature in case of live electronics and live coding shows the extremely vague borders of the above mentioned triad. On the other hand, it is almost impossible to explore this phenomenon decoupled from its surrounding elements. In other words, if this article were not about acousmaticity, but melody, it would be very complicated to talk about it without mentioning the properties of

rhythm, harmony and timbre. A rather legitimate choice would be to look at manifestations of acousmaticity through some sort of holistic prism. On the other hand, the operation of composition should be regarded as the starting point, no matter how camouflaged it is. If we dared to debate with Roland Barthes, we would say, that in spite of the death of an author, and the birth of a listener, there is no basis for the texts (in our case – for music) to appear from absolute emptiness. If there were no author, it would have been necessary to invent him – a remix of Voltaire’s saying might be suitable here (with no hints to divinity, of course). In this dynamic and confusing field, it is necessary to have solid ground for further steps. Composition and creative global thinking should be some of them.

Looking from the perspective of the composition principle, it would be right to arrange the ideas of the acousmaticity of in relation with existing theories and views. The vast majority of ideas separate the art of music into separate segments that may contribute to this research. From the above mentioned Barthes and Nattiez, we may add the views and ideas of Lasse Thoresen (2007) and his individual extensive genesis tree of musical forms, which is based on the treatise of musical objects by Schaeffer.

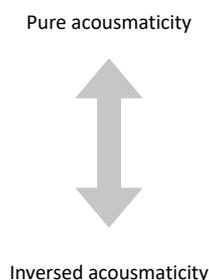
However, let us focus on a hypothetical level; naming and systematizing the tools that unveil acousmaticity in sound, and music in particular. Let us take the set of oppositions to open and identify the acousmatic property in music. With the help of the oppositions’ immanent tension the phenomenon of acousmaticity takes a recognizable shape. Here are the tools that we will use to trace and describe acousmaticity in music. The two main coordinate axes, where acousmaticity is easily noticeable, are:

- 1) the vertical axis of acousmaticity – this vertical line is primarily related to Chion’s (1994: 239) audiovisual contract with its breaks and ruptures in particular;
- 2) the horizontal axis of acousmatic ness. It is a binary opposition between drone (sonority) and pulse, as its counterpart.

These dimensions will help us to identify the manifestations of acousmaticity in the music composition processes, which are not visible from the first sight.

Vertical axis of acousmaticity

On this axis the bonds of sound and sight (or image) and their reciprocal relations in the musical composition are arranged.



At the top of this axis is pure acousmaticity. This is a sound that is totally separated from image, which usually accompanies sound. This is the zone where Chion’s audiovisual contract starts. It is characteristic of human hearing to link aural information with the visual objects which emit those sounds and which are the cause of these sounds. The sound of the vast majority of musical instruments is directly linked to mechanical motion, be it the strings of a stringed instrument, the gesture of a musician holding a bow, or a percussive instrument etc. There may be some discussion about the visuality of sound emitted by wind instruments, especially brass, because in many cases the sound producing causes are not so visible – such as the vibration of air in the valves of a trumpet, however, the presence of a performer, especially his or her breathing is the direct cause of the sounds heard in this case. Sounds that do not have an obvious bond with the environment they are spreading in are acousmatic sounds. In this case, we usually talk about the sounds emitted via loudspeakers and the artistic message they carry.

It is obvious that thorough the long process of biological evolution human sight and hearing have acquired exceptional aspects of common operation in synthesis. Looking into the primordial layer of human consciousness, it is clear, that sound, at the dawn of human civilization had the function of a signal – a primitive man could very easily make a “friend or foe” sonic distinction, relating the sound to imaginative physical objects or

phenomena – be it the state of the atmosphere, animals or humans. Such an operation of audiovisual contract D. Smalley calls indicative sound (2007: 35–58).

Jonathan Sterne in his book “Audible Past” (2003) describes multipolarity of sound using, as he calls it, a litany (with theological overtones used deliberately):

- 1) hearing is spherical, vision is directional,
- 2) hearing immerses its subject, vision offers a perspective,
- 3) sounds come to us, but vision travels to its object,
- 4) hearing is concerned with interiors, vision is concerned with surfaces,
- 5) hearing involves physical contact with the outside world, vision requires distance from it,
- 6) hearing places us inside an event, seeing gives us a perspective of the event,
- 7) hearing tends towards subjectivity, vision tends towards objectivity,
- 8) hearing brings us into the living world, sight moves us towards atrophy and death,
- 9) hearing is a primarily temporal sense, vision is a primarily spatial sense,
- 10) hearing is a sense that immerses us in the world, vision is a sense that removes us from it.

A loudspeaker as an impersonal physical object, that emits sounds, visually it bears almost no information about the sound emitted. We hear sounds, however the cause is invisible, as if we were Pythagorean *akousmatikoi* hearing sounds behind the veil. It is worth noting that this kind of experience relies greatly on the context. Our ears are overwhelmed by the amount of loudspeaker generated sounds in our daily life, so each time we hear them we are not as surprised as a medieval person would be. On the other hand, to not think about the sonic environment that we are forced to get used to would be an error. Furthermore, the quest for the artistic justification of acousmatic sounds is still ongoing.

Acousmaticity may be attributed to the consequences of technological progress. Acousmatic sound has been chasing us from the very beginning of the era of recorded sound. Edison’s phonograph opened possibilities to capture the sonic environment, and reproduce more or less analogous version of it at another time. With the help of telephony one can hear the voice of a person who is further than vision or hearing can reach.

The bottom part of this axis is occupied by inversed acousmatic. It is a mirror reflection of pure acousmaticity. In this case we talk about images with no sound. In other words, if pure acousmaticity is sometimes described as “disembodied voices”, thus inversed acousmaticity would be labeled as “mute objects”. Following this analogy, the opponent of a loudspeaker, would be a video projector. Moreover, the latter contracts the visual world into a flat square, in the same manner as the former contracts audio space into a homogenous sonic stream. Inversed acousmaticity – the silent zone – is waiting for a more exploratory view in future research.

From a creative aspect, the top of this axis may be inhabited with recorded music that has no individual visual line. The bottom part is reserved to theoretically possible inaudible music. It may be an oxymoron but one can find quite a number of musical examples of this type: non-cochlear sound described by Seth Kim-Cohen (2009), also broad spectra of conceptual music, from John Cage’s “4’33” to the Fluxus movement. For instance, the current Wikipedia list of silent pieces spans up to 60 entries. However, on lower part of this list there are audible pieces too: the piece by Yannis Kyriakides called “Mnemonist S” for ensemble, sound track and video text. As the author himself states, one interesting aspect is reflected – the so called video text track (coherent, large format text flow in the visual projection), which instead of creating a coherent entirety with musical material, gradually gains individuality, separate creative lines, which bear distinctive but convincing charge. Indeed, the visual text is a part of the piece, while rather autonomous and voiceless, creates the impression of a silent contact. (This piece is based upon the testimonies of the mnemonist Solomon Schereshevsky in the 1930s.)

This initial draft of the vertical axis would be incomplete without mentioning its central part. Obviously, these axes are of a continuous nature, nevertheless at its hypothetical central area one might assume the existence of some sort of balance between visible and audible, namely the balance of audiovisual contract. Some describing aspects might be:

- 1) convincing creative decisions in connecting recorded sound with live performance,
- 2) creative situations, where the static and non-expressive presence of a loudspeaker is resolved,
- 3) digital and electronic processes are masked by the veil of acoustic instruments.

In the first case, creative credibility is based on many factors, but it is easy to notice whether the recorded sound has gained an important role in the composition, whether the author took into account the aspects of

the recorded/reproduced sounds and the totality of acousmatic aspects coming with it, or not. (We can mention the composition by Bronius Kutavičius' *Two Birds in the Shade of the Woods*, a form of virtual dialogue with a recorded voice – a metaphor of conversation between free and caged birds.)

In the second case, we have pieces which show the creative use of the nature of loudspeakers, where the so-called disadvantages become advantageous parts of the composition. Canadian composer's Gordon Monahan's composition called *Speaker Swinging* (1982) illustrates such kind of decisions – three performers spin loudspeakers in a circular motion, thus creating a vibrant sonic space filled with the Doppler Effect sounds. Here acousmatic music gains additional “deacusmatising” factors:

- the speakers' Doppler Effect,
- the speakers gain dynamic attributes – they become moving objects in space,
- the people spinning the light emitting speakers becomes music performers.

The third case is possibly the most fruitful and attractive part of contemporary music, in which some sort of musical concealment takes place. Computer technologies and processes with all their acousmaticities are concealed or masked under the sound of common, conventional acoustic instruments. This aspect is reflected in P. Ablinger's piece *Speaking piano*: the sonic surface is purely acoustic – we hear only live piano sounds, however, all sounds are controlled by a computer algorithm that transforms human speech into the piano part. Similarly, the piece by R. Mažulis *Ajapajapam* for twelve voices and string quartet has a computer generated tone and tempo prompter for each individual player, nonetheless the audible surface is purely acoustic too, resulting in a lush micro-canonic texture.

The horizontal axis of acousmaticity

In the aim of unlocking the property of acousmaticity into separate dimensions, we gain an opportunity to discover traces of acousmaticity in musical territories that are of little relation with each other.

The horizontal axis of acousmaticity connects two poles of the music sound set – an uninterrupted continuous drone (sonority), and an aspect of fragmentation in pulse and rhythm.

Due to its cohesion with the concept of the uncanny (Jentch 1906; Freud 1919), this axis is related to the dimension of uncertainty and knowledge which will be discussed in further chapters. The drone's anamorphism of gradual change contrasts with the sound of an impulsive nature. More broadly speaking – the anamorphism of drone “feeds” the uncanny through analogy of statics and “slow revival/slow death”, whereas the repercussion of rhythm destroys the uncanny and maintains an “eternal vitality” and “eternal motion”.



From the physical point of view, the relation of drone and pulse is much more evident.

On the left-hand side of the axis we have the sonority and drone aspects of the sound. Thus we have a two dimensional prime plane, consisting of basic binary oppositions based audiovisual context, and purely sonic context, where we can plot a musical composition. Hypothetically we may evaluate the degree of acousmaticity in this way.

At this point we must state the hypothesis that all acousmatic sound may be reduced to the notion of acousmaticity. This resides in all audible matter to a certain degree. Going further, we should assume, that acousmaticity is an audible representation of the uncanny. Generally speaking, acousmaticity is uncanny, and vice versa. This statement has not yet been aired either in the Schaefferian and post-Schaefferian traditions, or in the latest treatises on acousmatic sound, such as Brian Kane's book *Sound Unseen* (2014).

Conclusions

1. Acousmaticity is a part of the pre-compositional processes.
2. Audiovisual contract forms one of the main axis of coordinates in the plane of acousmaticity.
3. Sonority and pulse form another one.
4. These axes enable us to make an attempt to put a more systematic view to music in regard to acousmaticity.
5. Acousmaticity = uncanny.

References

- Chion, Michael. *Audio-Vision: Sound on Screen*. New York: Columbia University Press, 1994.
- Freud S. *Das Unheimliche*, 1919.
- Jentch, Ernst. On the Psychology of the Uncanny (1906); *Uncanny Modernity Cultural Theories, Modern Anxieties*, ed. J. Collins, J. Jervis. New York: Palgrave Macmillan, 2008.
- Kane, Brian. *Sound Unseen: Acousmatic Sound in Theory and Practice*. New York: Oxford University Press, 2014.
- Kim-Cohen, Seth. *In the Blink of an Ear: Toward a Non-Cochlear Sonic Art*. 1 edition. New York: Continuum, 2009.
- Landy, Leigh. *Understanding the Art of Sound Organization*. Cambridge, Mass: The MIT Press, 2007
- Meyer, Leonard B., and Grosvenor Cooper. *The Rhythmic Structure of Music*. Chicago: University of Chicago Press, 1963.
- Nattiez, Jean-Jacques. 1990. *Music and Discourse: Toward a Semiology of Music*. Transl. Carolyn Abbate. Princeton, N.J.: Princeton University Press.
- Schaeffer, P. (1966). *Traité des objets musicaux*, Le Seuil, Paris, p. 91
- Smalley, Denis. *Space-form and the acousmatic image*. *Organised Sound* 12(1), pp. 35–58, Cambridge University Press, 2007.
- Sterne, Jonathan. *The Audible Past: Cultural Origins of Sound Reproduction*. Durham: Duke University Press Books, 2003.
- Thoresen, Lasse. Form-building Transformations: An Approach to the Aural Analysis of Emergent Musical Forms, *JMM: The Journal of Music and Meaning* 4, Winter 2007 [<http://www.musicandmeaning.net/issues/showArticle.php?artID=4.3>], sec.3.1.; [accessed 15/12/2014]

Akusmatiškumo savybių atpažinimo instrumentai ir jų sisteminis grupavimas: sonoro ir pulso binarinė įtampa

Santrauka

Dviejų muzikinių pasaulių – akustinio ir elektroninio – kontaktas sudaro sąlygas kelti naujus klausimus apie garso ir vaizdo santykį. Šioje situacijoje akusmatiškumas tampa pagrindiniu atspirties tašku. Ypač kai atmetame visus žanrinius akusmatiškumo saitus. Šis tekstas yra kuklus bandymas naujai identifikuoti akusmatiškumo sudedamąsias dalis ir jų *modus operandi* šiuolaikinėje muzikoje. Pirmosios dvi matavimo kryptys apibūdina garso vizualumą ir jo vidinį judėjimą. Pastaroji suteikia pagrindą kelti hipotezę, kad akusmatiškumas yra glaudžiai susijęs su nejaukos sąvoka.

Reikšminiai žodžiai: akusmatiškumas, garsovaizdos sutartis, apverstasis akusmatiškumas, vertikaloji akusmatiškumo ašis, horizontalioji akusmatiškumo ašis.