Free Sound Territories – powered by „hypersound touchpoints“

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Author: Friedhelm Hans Hartmann

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1 White Paper

1.1 Introduction

The following article is dedicated to an interactive project of musical collaborative composition that will be presented in this form at the festival BLAUES RAUSCHEN September 2022 in Essen, Germany.

In order to be able to continuously read the browser version of this PDF document, all hyperlinks should be operated using the right mouse button + 'Open Link in New Tab' function (not necessary when reading with Acrobat Reader™).

1.2 Project Introduction Article

What is a sound territory? When should it be considered "free", when not and why?

We can call a sonic territory a territory characterized by a certain coherence of sonic properties, which often can be traced back to the way they communicate with themselves. For example, a huge sound territory is that of the piano sound, and within this we could define another one that only affects the black keys of a piano, for example: a pentatonic territory with only five different tones. Another territory might enclose the sounds of a rock band, and yet another a configuration of sine tones used in a purely electronic piece, while at the same time, with skillful synthesis, may be able to evoke even the sounds of glass and bells in our imagination.

Once we have settled on a particular territory, the next step is to ask how the sounds it contains are related to each other. In doing so, we can come across very different networks of relationships, for which sociological categories lend themselves to characterization.[i]

Based on the communication model of information transmission according to the value of redundancy - and discussing this matter free of any artistic judgement - we could define the state of a *sound anarchy* at the entropic pole, where sounds are subject to maximum independence and dispersion, entirely in the sense of Stockhausen's concept of time of the "moment form", where it is a question of granting each sound event or a group of them maximum autonomy and correspondingly perceiving these events as far as possible just for themselves as they appear. I would also speak here of a maximum *intrinsic value* of the sounds.

At the other end of the redundancy spectrum, we could polemically describe the maximum synchronization of sounds as the sound territory of a *sound dictatorship*. Which does not automatically imply a lower artistic value, since minimal music works conceptually with sounds whose *external value*, i.e. the dependence on other sounds, is at its maximum. But of course that also applies to tracks that pursue

completely different goals, such as maximum effective dance ecstasy. It is precisely here that we can better understand the strong connection in the synchronization, i.e. the equalization of the sounds, with the almost completely synchronized movements of a dancing crowd, that would less be visible with a passively present concert audience.

However, it is possible that things are most complex in the middle of the redundancy spectrum, where sounds are in a certain balance of *intrinsic and external value*, a balance it seems that has to be constantly renegotiated. What would not be more appropriate then to speak of this sound territory as a kind of a *sound democracy*?

Classical musical counterpoint and many of its derivatives are replete with conversational rules that – to this day – seem to create a context for extremely dynamic sound sequences, where sounds, sound sequences and figures are related in a way – to a certain extent in sense of a higher harmony – and quite literally so, including rhythmic coincidences – are able to mutually enrich and enhance each other. [ii]

In the context of the sociological or "domestic" view of the network of relationships between sounds in a sound territory, the "concept of freedom" of a sound territory naturally acquires a special polemical punchline.

While we are spontaneously inclined to declare the entropic sound conditions as the freest, I propose to regard sound structures with a higher and I emphasize – perceptible, not generic per se – degree of organization as freer and to measure this more in terms of sonic development possibilities, which would rather tend to be missing in a network of relationships that is too redundant or too entropic. From an information-theoretical point of view, one could assume that a network of relationships is more dense in the center of the redundancy-entropy spectrum. It seems needless to mention that the determination of a "degree of freedom" in the sense of redundant and entropic music perception is of course subjective and socially shaped and cannot be assumed to be an ideal, maximally free network of relationships per se.

If, however, the degree of interaction potential is important for the concept of a virtual territorial freedom of sound, then we should be sensitized to certain limitations in sonic interaction possibilities, especially to those that can not necessarily traced back to a purely musical regularity or sedimentation. A few examples can be given:

1. Sound modifications can be overly tied to the properties of a particular sound generation system, especially when linear generic manipulations lead to completely non-linear results at the phenotypic level. For example, the linear derivation a frequency modulated sound may lead to a completely new unforeseen spectrum. A small step on the generic level leads to a big step on the perception level (technical limitation).
2. More modern compositional organizational models - such as working with an abstract twelve-tone row – do not automatically lead to more optimal sound relationships in the specific case, but rather promote the basic feeling of permanent novelty or distraction on the tonal level, which as an aesthetic whole in turn is rather perceived as a summarized redundancy. Paradoxically, the compulsion to constantly behave differently and thus entropically can lead to a restriction of individually perceived freedom of sound (conceptual limitation).

3. The same applies, of course, to the case of a systemic redundancy with highly developed sound structures, if these are repeatedly quoted over and over again while possible new combinations on the information spectrum of communication, i.e. a "new" piece of information, are missing. Why shouldn't we be able to speak of an "occupied" sound territory here, where styles are used or even well-known melodic phrases are quoted? It is not without reason that we are touching here on the big topic of musical copyrights (limitation by mechanically following paths that have already been taken).
4. A fairly new aspect of territorial freedom of sound could also lie in using the possibilities of the Internet to interactively maintain sound relations that transcend location and time (overcoming the limitation due to temporal and local differences).

This is where the concept of *hypersound* comes into play.

Based on the concept of HTML (hypertext markup language), instead of an article, the course of a musical narrative can be provided with certain links between sounds that have similar properties but occur in a different musical track. In this way, sonic "bridges" can be created that mediate between the musical statements of different sound creators and turn them into a very personal reading or, as in our case, listening experience – like browsing through various hyperlinked articles.

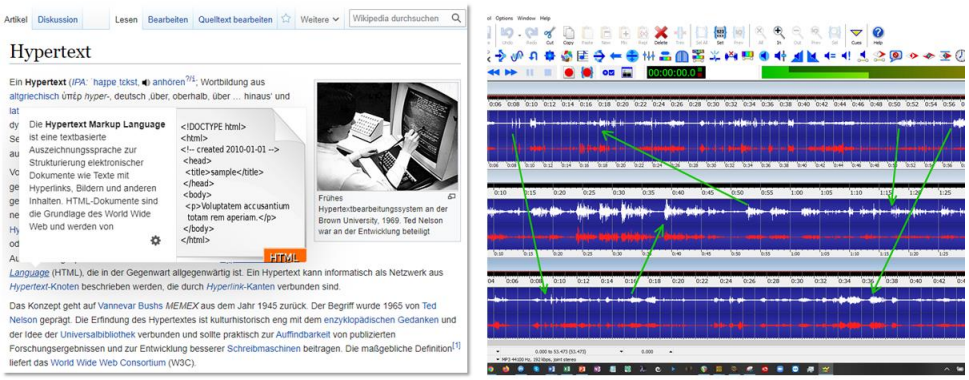

Figure 1 – hypertext (Source: Wikipedia) and hypersound (symbolic display)

Of course, communicating with musical material as opposed to navigating text has some important differences:

1. When a new sound stream is used, the previous one should generally fade away only gradually and not be suddenly switched off. In some cases, the old track can even still be heard as a background, just as what you've read before may sometimes still "resonate" in your memory when reading the next article.
2. Two sound streams may contain many common associated sounds, so that one can continuously jump back and forth between them at different points. Different texts would tend not to be read crosswise in this way, while that can make sense as a musical form of dialogue.
3. Since the "reading speed" in contrast to written texts is identical to the "listening speed" for all listeners, we could not only listen together to such a hypersound sequence, but also decide together which of the hypersound links the sequence should continue with. And of course that can also be distributed over the Internet, where the end result could be designed and understood at all ends by several participants who are far away from each other and can be heard and experienced in the same way by everyone.

To what extent could such a hypersound concept contribute to the virtual freedom of sound relationships?

1. The free exchange of sounds originating from different sound territories leads to new virtual sound territories in which the sounds interact more freely than they could in their ancestral territory.
2. The hypersound connections (points of contact = touchpoints) are based on sound associations, i.e. the directly audible properties of the sounds, independent of the conditions of their original generation. The phenotypic prioritization of sound relationships could be viewed as a kind of machine-independent or machine-liberated humanizing optimization.
3. The authorship of professional sound streams and the quasi-curatorial implemented hypersound links allow better accessibility, easier and thus freer access to the sounds, especially for non-professional musical enthusiasts.
4. With the support of remote control software, people in different locations can generate a hypersound sequence together, which should be of particular value in times of health risks associated with physical gatherings.

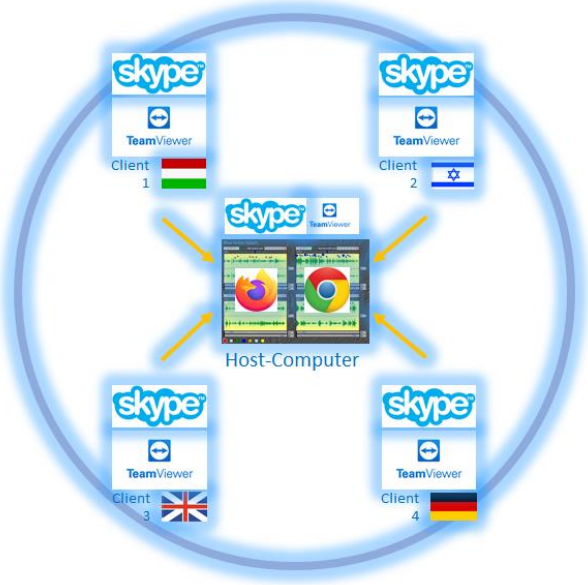

Figure 2 – hypersound communication via Internet using standard software (Firefox/Chrome, Skype und TeamViewer)

1.3 Example configuration

The Hypersound implementation that will be presented at the festival is a prototype design developed by Dr. Heinz-Josef Florian and is intended to illustrate the idea presented here and primarily serve as inspiration, both in conceptual and technical terms. Nevertheless, with the means shown here, interested parties can already create their own hypersound configuration today, or participate in an existing one in order to listen to it, control it or even expand it further.

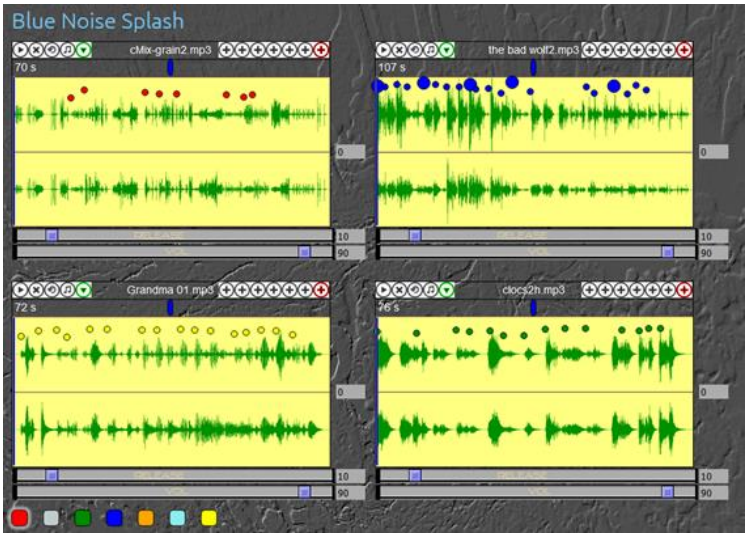

Figure 3 – Hypersound Screenplayer application (HTML5)

With the following freely accessible link, the application can be used to explore the sound territory of primarily electronic sounds proposed here:

cm-gallery.com/splash.

On the website there is also a technical description of how others can be invited to play along or how their own "hypersound territories" can be set up.

The rules of the game that apply to the sound actors in this configuration are by no means mandatory, but they can be a helpful starting point for developing own ideas:

1. Each contributor is assigned a color, with the four primary colors available being red, yellow, blue and green.
2. Only highlighted touchpoints are called up, usually only in one color. Thus one can always see who is taking the next step. Since there are often several touchpoints of a color, the participants who already know the track can consciously choose between the alternatives. They also determine the exact time of the change, which can also have a strong effect on the sound result – after all, every sound track flows on incessantly in the meantime.
3. In this model there are some special touchpoints that are able to change the sound streams and thus realize a prepared overall course. This presents something like a pre-composed form, which, however, is run through differently every time thanks to the freedom of sound described above. If we like, we're dealing with a "noised" form here, somewhere between live composition, interpretation and improvisation.

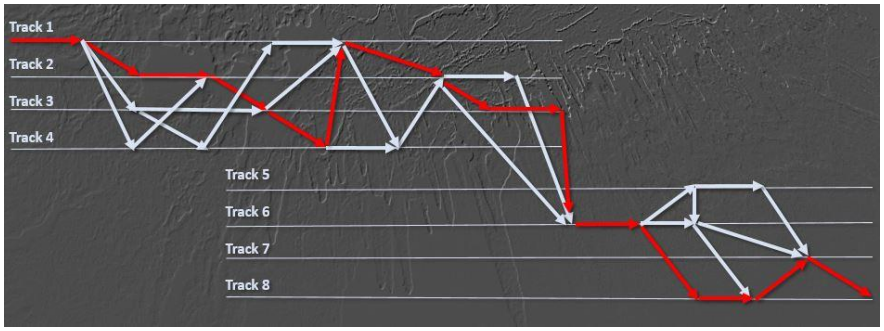

Figure 4 – Specific sound path as an instance of a virtual form (symbolic)

1.4 Audio source index of the sound samples

The majority of the audio sources come from YouTube contributions (availability August 1, 2022) and are listed in the order of their appearance in the article:

- Beethoven: Sonata No. 21 in C Major, "Waldstein" (Pletnev)
  https://youtu.be/IbblMw6k1cU?t=83
- Freed: Black Sonata, Spotlight 3
  https://youtu.be/FfsPG7LBQZE?t=16
- Paul Owsinski: Waldstein adaption
  https://youtu.be/vLyfQt2UiW0?t=471
- Stockhausen: Studie II
  https://youtu.be/_qi4hgT_d0o?t=107
- Ferneyhough: Exordium for string quartet
  https://youtu.be/PJRJLuVEV2M
- Cage: Etudes Boreales IV
  https://youtu.be/aqcHkFY8bHg?t=8817
- DJD3: TECHNO MIX 2021
  https://youtu.be/KjgluLOMa0k
- Reich: Piano Phase
  https://youtu.be/i0345c6zNfM?t=6
- Freed: Pitch Symphony, 'Relaxation Oscillation'
  https://youtu.be/T1eaGOrCTEo
- Beethoven: Sonata No. 21 in C Major, "Waldstein" (Pletnev)
  https://youtu.be/IbblMw6k1cU?t=302
- Frequency modulation with two sine oscillators (realization by the author)
- Freed: Animal voice derived from a wiping glass sound by Tim Kahn

1.5 Copyright of Project Sound Sources

The following musical sources were used in the hypersound project "hypersound touchpoints":

1. Javier Garavaglia: Sound material from "Miniaturstück I, acousmatic music" (2010)
2. Heinz-Josef Florian: Sound material from Hypersound project "Sound Prints" (2012), "The Bad Wolf" (2012) and electronic composition "Eurydikes Cry" (2012)
3. Freed: Sound material from sound track "Revolution 9" from "Album for the Youth" based on Freesound.org contribution (CC license) by Tim Kahn alias Corsica and from "Bell Story" (2013) based on Freesound.org contributions (CC license) Freed, UncleSigmund, LG, zuben, Leady, ERH, daveincamas, striptheband
4. Balázs Kovács: Sound material from "Struktur" (2017)
5. Igal Myrtenbaum: Sound material from Hypersound project "The Bad Wolf" (2012)
6. Thomas Neuhaus: Sound material from "5 Kleine Stücke über die kleinen Laute eines kleinen Menschen" (1997, 2-Channel audio) and "The Bad Boys were Prodding the Bear through the Bars of the Cage" (1985, 4-channel tape)

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[i] It could possibly be proven on further examination that there is a difference between the sociological relationship categories that - based on psychoacoustics and extended musical reception studies - could be asserted for the sound conditions and the music-sociological characteristics of the there is a causal connection between the respective musical communication in society. To put it simply, could it be that people who work with isolated sounds are more isolated from a music-sociological point of view? Today, for such an investigation, we may only need to count YouTube views at the first place.

[ii] At the same time, it can probably be observed that *sound-democratic* sequences are possibly much more suitable for conveying the authenticity of sound creators in the common musical communication process – based on context-bound decisions – much better, while more redundant ones or more entropic design features seem to tend towards a kind of perception-related *interchangeability* and *arbitrariness*.