

Listening with the Eyes

Remarks on Live Coding Performance

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The practice of “listening with the eyes” has a remarkably long history, which in the Western tradition of notated music can be traced back to at least the 16th century. The usage of musical figures or extramusical references leading to literature or fine art or even drawing with melodic lines could be considered a common effect of this practice. Music history, after intermedia and multimedia development in the 20th century, is now heading towards code-based performance. The crucial questions are: What is being performed: music, notation, or the process of creation? And who is the performer and who is the audience?

1. The Strange Case of Dr. Jekyll and Mr. Hyde: A Diagnosis

Since the moment when music began to be visually notated, its character radically changed. Marshall McLuhan, in *The Gutenberg Galaxy*, called this process the *schizophrenia* of man (McLuhan 1969). From that time, human perception and thinking has been split between two worlds: the world of *hearing* and the world of *sight*. Musical thinking was translated from the sphere of *sounds* into the sphere of *images*. Consequentially, European culture was required to create terms such as composer, composition, and *opus perfectum*, signifying a closed structure. European music now had a deferred *time* for rethinking and reflection. During improvisation, due to the flow of time, a musician is not allowed to think extensively of the structure of the piece or of the specific relations among the musical elements. By contrast, during the process of composition, the composer is no longer bound by time. All mental operations can be performed *out of time*, as Iannis Xenakis pointed out in his seminal book *Formalized Music* (Xenakis / Kanach 1992). The whole tradition of artificial European music developed on this basis. This category of music emerged – for the above-listed reasons – more from *thinking* than from *playing*. It is music which is *schizophrenically* split between two worlds: the world of *game* (represented by a set of rational rules) and the world of *play* (characterized by improvised and spontaneous realization of these rules) (Eco 2002).

2. The symptoms

In contradiction to the above-mentioned diagnosis, it should be said that live music has rarely existed exclusively in either a visual or an aural domain. Most recently, the electro-acoustic music of the 1950s showed that music had a more visual nature than the audience may have been willing to admit. Pure *musique acousmatique* was invented by Pierre

Schaeffer, with the term originally derived from a description of Pythagoras' students who were taught without seeing their teacher, called *akúsmatikoi* in Greek. Acousmatic music proved the importance of a theatrical or generally visual component of the musical performance through its deliberate absence. The most probable explanation of the need of the visual component is that human individuals tend to focus attention on the source of an incoming sound.

Simply put, music had an audio-visual nature even before it began to be notated. But as soon as it started to be *described* and *prescribed*, it started to evolve in its own way and started to live its own life.

This process was already evident, as indicated in Joachim Burmeister's theory of rhetorical figures in music, presented in his *Musica poetica* (Burmeister 1606), where certain melodic models have specific semantic meaning, actually working as references to extramusical entities. This started a long tradition of "music for the eyes", or die Augenmusik, as German nicely terms it, which was accessible exclusively to the readers of music, not to the listeners. A typical example would be the music of Czech composer Zdeněk Fibich or France's Claude Debussy. Both draw melodic lines in their compositions as concrete visual objects. This can be seen in *Pagodes* from the cycle *Estampes* and *La fille aux cheveux de lin* from *Préludes* (1910) by Claude Debussy and in some pieces from Fibich's piano cycle *Moods, Impressions, and Reminiscences*.

In the 1960s, the whole process continued with graphic scores and mainly with concept scores. The latter – represented for example by John Cage – is nothing more than a set of instructions or rules of play. From the point of view of information theory, we can perceive them as algorithms.

Music scores in general should be understood as analogous to software programs. They define the basic rules of a procedure, set variables (instrumentation), bring sets of musical data to be performed, and program the actions of the performers in a complex structured form.

In the 19th century, under the influence of recording media (phonograph, gramophone, etc.), the traditional communication chain was disrupted. The situation in which a composer composed a piece and then rehearsed and performed it for an audience was definitely gone. The audience lost its connection both with the composer and with the performance. The unity of a single time and place for the composer, the performance, the audience was disrupted. The audience lost its connection with the *source* of music. Its anthropological determinateness was shaken.

3. The therapy

In many of its manifestations, contemporary music strives to make the audience participate.

The process of participation is an important means of returning to the ritual, magic, and social function of music. Furthermore, participation is one of the most important conditions of *game*.

Hans-Georg Gadamer, in his inspiring text *Die Aktualität des Schönen: Kunst als Spiel, Symbol und Fest* (Gadamer 1993), develops Immanuel Kant's understanding of art as free purposeless beauty with no meaning. Art as a game is characterized by:

1. Liberation from utilitarian bonds.
2. Source of self-motion, which is an expression of surplus.
3. Rationality (albeit pointless).
4. Calls for participation, which is a prerequisite of communication.

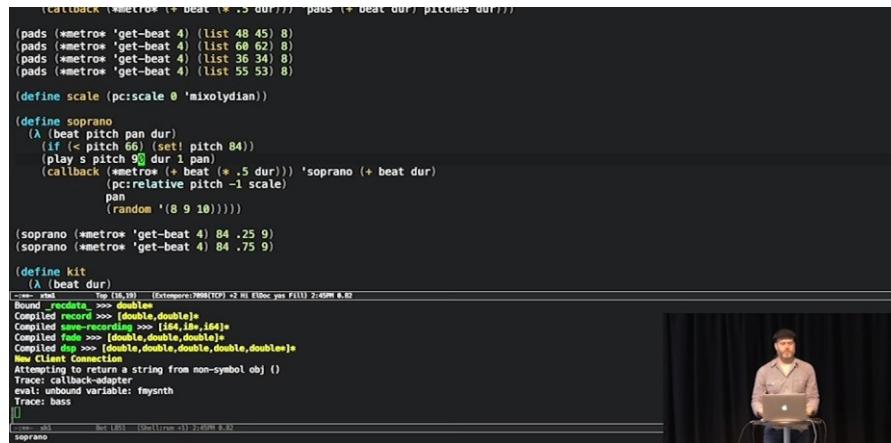
Similarly, the well-known and oft-cited book by Johan Huizinga, entitled *Homo Ludens. Vom Ursprung der Kultur im Spiel* (Switzerland 1939) defines the basic features of a game:

1. Time frame.
2. Space frame.
3. Goal of the game (*telos*).
4. Set of mandatory rules.
5. Participants of the game.

One way of re-establishing connection between the audience and the source of music by means of game is the quite recent phenomenon of live coding. Live coding represents a practice in which a software code is being written during a real-time performance by an individual or a group of programmers. The written code is projected simultaneously with the performance of the resulting sound or music.

This new situation breaks the rules of traditional music, in which originally a set of instruments is given. With live coding, there is only a set of instructions which are able to create potential instruments. The programmer is simultaneously the creator of the instruments and the creator of the developing *comprovisation*. This term seems appropriate for the resulting structure, which is liquid and open in one way and prepared and pre-structured in another.

The first live coding event took place in 1985 in Amsterdam at the STEIM festival. The performer was Ron Kuivila (Floreš 2014). Since then, many more events and festivals have taken place. Numerous collaborative projects emerged, for example *The Hub* or *TOPLAP*.



Ex. 1: Ex. 1: ComputeMusic(now): Andrew Sorensen at TEDxQUT.

Source: <https://www.youtube.com/watch?v=GSGKEy8vHqg#t=140>.



Ex. 2: Benoît and the Mandelbrots playing at the live.code.festival 2013

Source: imwi.hfm.eu.

4. Chamber music by Vilém Flusser

There is no strong evidence that Vilém Flusser numbered music composition among his many talents. Nevertheless, the title of this chapter refers to a particular chapter in Flusser's book *Ins Universum der technischen Bilder* (Flusser 1985). The chapter makes an analogy between computer mediated communication and playing chamber music. Flusser writes about the performance of a dialogic network connecting people and artificial intelligence. A more fitting description of live coding is hard to imagine. Or to be more precise, it is not a description, but should be rather understood as a prediction.

People will be in contact with one another through their fingertips and so form a dialogical net, a global superbrain, whose function will be to calculate and compute improbable situations into pictures [...] The prevailing state of mind will be reminiscent of the one we experience in our creative moments, the experience of being out of oneself, of adventure, of orgasm. The telematic superbrain will radiate an ever-expanding, self-renewing, and self-concentrating aura of technical images. It will present a universal spectacle [...] This brings us to a closer examination of chamber music—not the sort one hears in concert halls but the sort experienced by those who meet to make music. I imagine these musicians meeting not to read scores but to improvise from available scores, as was common in the Renaissance. [...] This is to suggest chamber music as a model for dialogic communication in general, and for telematic communication in particular. The basis for such music making is an original score, a program, a set of rules. But using recordings of recordings of recordings, this score will soon disappear behind the horizon of musicians who are improvising with continually reprogrammed memories. In chamber music, there is no director, no government. The one who sets the tempo is only temporarily directing things. And yet chamber music demands an exceptionally close adherence to rules. It is cybernetic. Chamber music is pure play [...] To play for himself, each player plays for all the others. Each improvises together with all the others, which is to say, each adheres to precise rules (consensus) to jointly change them in the course of the playing. (Flusser 2011: 161–162)

5. Medical report

To submit the main theses of this article, the following should be clearly stated:

1. Live coding provides a treatment for audio/visual schizophrenia (as diagnosed by Marshall McLuhan), which consists of merging the principles of game and play. This means that audience is able to follow the newly established rules of the *game* (in

other words, the musical score) and at the same time their realization in the process of *play*. That implies that *game* identifies itself with *play* in real time.

2. Live coding is an example of the performativity of a code. Although it is not necessary to understand programming when listening to the result, is it the code itself which is being performed.
3. Simultaneously, the process of merging *play* with *game* means merging *auditory* with *visual* in one multimedia experience.
4. Remediating (in the medical sense) the disruption of the communication chain means reconstructing the time–space unity of the production–reception process and concurrently re-establishing a connection between the audience and the artist.
5. Realization of hacker ethics calling for maximum accessibility of information and transparency of programming.
6. Bringing the element of virtuosity on the electro-acoustic music scene. Programmers exhibit their own dexterity in flowing time.

The closing words of the TOPLAP manifesto expressing hope for the near future might be used to conclude this paper:

Performance involves continuums of interaction, covering perhaps the scope of controls with respect to the parameter space of the artwork, or gestural content, particularly directness of expressive detail. Whilst the traditional haptic rate timing deviations of expressivity in instrumental music are not approximated in code, why repeat the past? No doubt the writing of code and expression of thought will develop its own nuances and customs.¹

¹ TOPLAP Manifesto, see: <http://toplap.org/wiki/ManifestoDraft>, (accessed 3.11.2014)

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