

# BUSINESS MODEL, A PIECE FOR VIOLIN, CELLO AND LIVE ELECTRONICS

Gilbert Nouno

Ircam

Paris, France

[gilbert.nouno@ircam.fr](mailto:gilbert.nouno@ircam.fr)

## ABSTRACT

This paper presents *Business Model*, a recent piece for violin, cello and live electronics. It focuses on the compositional elements and live electronic techniques employed. Interpretation and live interaction issues with respect to the written parts are discussed. The main ideas and underlying concepts of the piece are also exposed.

## 1. COMPOSING AND PLAYING MIXED MUSIC

*Mixed music* is a term often used for music composed for traditional instruments and electronics with a certain amount of interactivity. *Business Model* is a trio for violin, cello and live electronics. The violin and the cello part are both scored. Live electronics is pre-composed and performed by the composer with a tactile screen interface and laptop. Electronic elements of the music are to be written and specified with indications in the next score update.

### 1.1. The question of interpretation

Interpretation is a crucial intention in music and electronic music is no exception. Nonetheless when considered for *mixed pieces*, it becomes an important but underestimated issue. Most composers focus more on the interpretation of the instrumental parts, and less on the electronics, despite its concern. Electronic music is often shadowed during performance by the acoustic scene provided by human players. The situation worsens with the usual absence of electronic musicians on stage alongside acoustic musicians. To address this *absence*, I will review a few hypothesis that might possibly explain this situation :

- *The ephemeral aspect of electronic instruments*

What is an electronic instrument? Although it is not easy to answer the question, one can say there is a need for electronic music to be interpreted via some actions or means. These means can be called controllers, devices, or more generally electronic instruments. As software and hardware are evolving very fast and are continuously changing, how is it possible to define a continuity and a standard in this field?

This is one of the main drawbacks of electronic instruments : they are often too experimental and are likely to be somewhat ephemeral.

- *The electronic musician as a performer*

It is sometimes useful to consider the music not only from the listener's point of view but from the musician's, and more specifically from his listening and performing place. On stage, the electronic musician should hear himself as clear as the acoustic musicians does. Sound monitors are essential, but might not be ideal when sound diffusion in the hall requires a multi-channel system for sound spatialization. Being on stage is not always the best place to control the sound projection. In any case, the musician needs to conduct and anticipate his own sound emission and projection as a traditional musician does with the cultural background that guides him to play in any concert hall. The cultural aspect of playing electronics – at least within the context of *mixed music* – is not yet well developed. It is not so easy for the electronic musician to find a natural place in the music, and for the composer to manage spontaneous performance actions.

- *Interpretation vs triggering and automation issue*

Most composers reduce interpretation to the triggering of sounds, or to the use of automated parameters controlling sound processes or sound synthesis. Such choices are often justified as means of absolute or ideal control over music. Live electronics requires different levels of interactions in its elaboration : the more there are, the more it opens music to interpretation.

- *parameters' complexity in electronics*

Sounds parameters are often too numerous to be handled by one person in live performance. Moreover, finding the best range for continuous parameters is a hard task both during composition and performance. A traditional musician manipulates dozens of micro and macro parameters when playing his instrument,

but all of them - even unconsciously - have been accurately embedded into his actions through learning. Control devices and scoring can't always, or hardly draw benefits from such instrumental culture and practice. Besides, what we may call *digital instrument maker*, for a generalized computerized instrumental process, has not yet found a stable state of development as traditional instruments have. And it is not likely it reaches one considering the diversity that electronics brings into music.

The above points lead first to the question of scoring music for traditional instrument with electronics, and second to its execution and interpretation.

The dilemma for a composer interested in live electronics for *mixed music* with traditional instruments, is to find a right balance between the amount of information or data concerning the electronic part, with respect to the traditional score writing. Musicians are accustomed with their instruments through decades of practice and learning, and have internalized the cultural aspects of graphic notation for interpretation. Interpretation is thus central as it makes the bridge between the symbolic elements and the sonic production as a result of undertaking these instructions.

There is also an issue concerning the composer with regard to the control of the output. It is appropriate to make a comparison with the classical concerto *cadenza* that was dropped out by 19th century composers because they were losing control on the music improvised by the soloists. In analogy to this, electronic composers might be afraid to loose control of the music if they give too much freedom and possibilities with the electronic tools in the hands of electronic musicians - although we have reviewed the difficulties to score electronic music because of its inner construction. If it is true that the use of electronics with traditional instruments raises the question of its interpretation, and to a certain extent the question of improvisation, this issue might be finally more cultural than technological, as some might still have in mind the icon of the classical 19th century composer.

## 2. ELEMENTS OF SCORING IN *BUSINESS MODEL*

This section describes some central ideas of the piece and presents some elementary vocabularies that are used in the score. I also provide the connection with the sound and electronic transformation processes.

Talking about a musical piece for me is indeed exploring the intricate and close relations of its numerous components, both material, as being constitutive parts of the scoring, and *ideal* as an expression of ideas or processes of thoughts. There is always the risk, by disclosing ideas and inspirations of a work, to reduce or over-simplify the creation process of the piece. It might also guide too strongly the listener into

the given categories of thoughts although his imagination would have probably lead him to others, but it enables to take a certain distance with the piece and can provide at the same time and at least some clues to understand the proposed music.

The musical ideas, in the last works I have written, find primarily their origin in graphic works, and paradoxically are trying to suggest more of a visual or plastic impression than a sonic one. Mental images are built within a pair of opposed but immersive processes of both contemplative and dynamic movements or items. This idea is suggested by the pictorial images of background and foreground objects or phenomena evolving at different speed, with different strength, shapes or colors. I like to see these different planes as different surfaces of sound, with different textural and plastic qualities, from flatness to roughness, hardness to softness, colorful to invisible, each layer detached one from the other-ones, gliding between them so as to generate a vibrating and circulating energy in their superposition, relative movements or distances. Such considerations imply a need to delineate or isolate the ingredients, the components as existing individually as small units of sound, either tone or noise. Such a scheme of isolating processes and thoughts, combined continuously or in a discrete approach with a dynamic spatial motion and some in-time transformations, lead to a perceptive sensation of abstraction. The way this abstraction is built in my work, with elements revealing themselves independently from the others, but contemporaneously establishing a composed affinity in a subtractive and constitutive mode, brought me to unfold it under a concept I call *subtract art*, or making a neologism : *subtract art*. *Subtract* is either an accepted misspelling or a barbarism for *subtract*. Here it makes reference to *abstract art* and to the search for abstraction in two concurrent ways : the process the music, or the art piece, undergoes to achieve a form of abstraction, and the plastic images series it aims to make visible.

The components of musical vocabulary I use in *Business Model* are different modes of playing on the string instruments as they extend the diversity of sound categories in the way they are produced. Moreover, they enable a rich exploration of their alteration. In the first part of *Business Model*, the violin and the cello undergo a continuous and gradual change of the playing techniques, exploring them progressively and each time in a dominant manner before switching and transforming into another. One could then listen to different uses of *flautato* [1] <sup>1</sup> (bar 22-43, Figure 1), pizzicato (bar 43-64, Figure 2), arco (bar 65-86, Figure 3), sounds with strong or soft noisy aspects (bar 87-108, Figure 4) , harmonics and glissandi (bar 109-130, Figure 5), reverse sounds also in combination with harmonics (bar 131-152, Figure 6), some relatively equal distribution of the previous

---

<sup>1</sup> as defined and used by Luigi Nono and Helmut Lachenmann

techniques (bar 153-169, Figure 7) as in the beginning of the piece (bar 1-21, Figure 9). The first page of the score is also given in Figure 9 so as to have a more continuous view on the beginning.

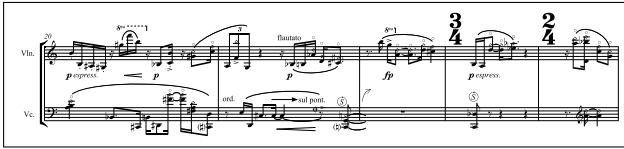


Figure 1. *flautato* use



Figure 2. Pizzicato modes

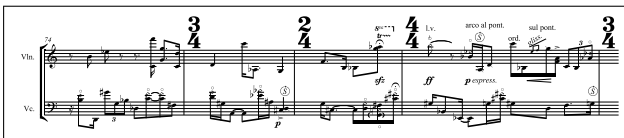


Figure 3. Arco dominant mode

Let's keep in mind that even if these techniques are overlapping in the flowing time of the piece, they do not constitute by themselves the entire structure. The rhythmic elements, pitches and intervals are working concurrently in the emergent process that draw the form of the piece. The electronics is in great part enhancing the visual image of the listener. Electronic sound often serve as a transitional surface, like a transport mean, or an interface plane so as the violin can join and establish a dialog with the cello, expanding resonances and echoing the musical material taken on the fly during the interpretation of the three musicians.

The evolution of the playing techniques over the piece is thought as a discrete transformation of gestures : there is a transforming movement initiated by, but also generating itself, a movement of transformation. This circular expansion of the piece is to be found in the ending of the first movement finishing in a spiral motion towards its resembling beginning. The polyphony of the contrasting *sound touching* playing techniques is renewed constantly and helps to fragment the field of pitches that emerges from the encounters of the acoustic and electronic sounds collapsing into some graphical abstract items, like dots, scrambled lines and sparks of sounds. The noisy techniques enable broad spectral colors, brightness, luminous glissandi, shining and crispy sounds, harshness with reverse exploding sounds by the mute of the left hand accompanied with a fast crescendo.



Figure 4. Noisy modes of playing



Figure 5. Harmonics and glissandi



Figure 6. Reverse and harmonics sounds

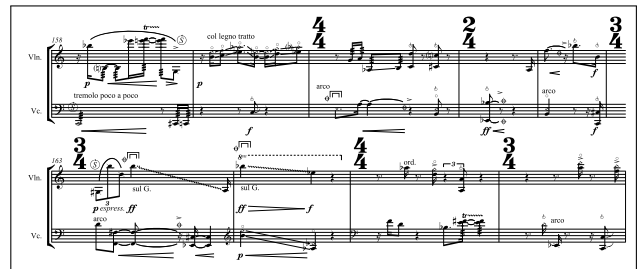


Figure 7. Mix of the previous techniques

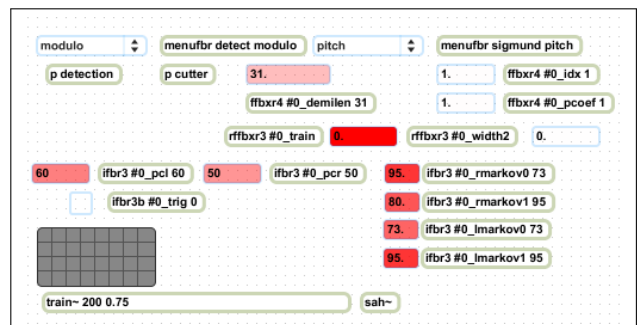


Figure 8. Max5 patch for live electronics *pointillism*

The usual compositional dialectic of gestures and field of pitches is in my approach replaced by the dialectic of actions and field of sounds, the sonic elements meets in an uncertainty crystalized within a determinism of a moment : a paradoxically deterministic uncertainty in time.

### 3. LIVE ELECTRONICS IN *BUSINESS MODEL*

Live electronics is done with a small and portable setup consisting of one computer running *Max5*<sup>2</sup> and *Max4Live*<sup>3</sup> sound processing software, completed or combined with a *Korg mini-Kaoss-Pad* tactile electronic effect, a *Lemur*<sup>4</sup> tactile screen or an *iPod touch* used as a control interface<sup>5</sup>, and a volume foot pedal for easy sound adjusting level. Two guitar amplifiers are set aside the three musicians to enhanced the specific fast stereo effects that are part of some sound transformations. A part of the live electronics *Pointillism* patch described later is presented in Figure 8.

The electronic is responsible for amplification of soft sounds and noises, distorts them and above all diffracts them in a way to disassemble their constituents. The stereo projection is using some techniques of pitch following to relate it instantaneously to the amount of diffraction. The result is another sound surface, with its own characteristic, another plane, another dimension. This sonic and pictorial space is taking place outside of the acoustic world but in the same time embraces it, isolates and takes the musicians even farther from the audience. Achieving this *performative* representation in both the scoring and live electronics, is a way to be less narrative about the musical material, pitches or intervals that always draw figurative lines and contours laying in the memory of the listeners. The aim of this process of diversification of sounds, is to work on the listener's memory not in a continuous way, but in furtive flashes of past and forthcoming memory. This does not imply a chaotic organization of sounds, but on the contrary a well imbricated constructions like a game of a puzzle whose items, still remaining in place, would have completely been torn up, apart and out, distorted, put far away as to erase the original figurative image but to leave place for an abstract souvenir. These are the images I am looking for and trying to suggest in building interactive emerging compositional processes.

### 4. CONCLUSION

There should be more to say about the use of the interactive tactile interfaces, and about the rest of the piece and the two short interludes that are written like emergent processes. The nature of both the instruments and live electronics playing in the second part is quite different and could be

discussed lively with the audience as a presentation. Furthermore, the written indications of the live electronics performance would soon enable and invite other electronic musicians to perform the piece with the acoustic players, as music is always living through new interpretations.

Figure 9. The first page of *Business Model*

### 5. REFERENCES

- [1] D. Alberman, "Abnormal playing techniques in the string quartets of helmut lachenmann," *Contemporary Music Review*, vol. 24, no. 1, pp. 39–51, 2005.

<sup>2</sup><http://cycling74.com/>

<sup>3</sup><http://cycling74.com/products/maxforlive/>

<sup>4</sup><http://www.jazzmutant.com/>

<sup>5</sup>using the software MrMr by <http://mrmr.noisepages.com/>