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# Analysing and Transcribing Electroacoustic Music: the experience of the *Portraits polychromes* of GRM

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ÉVELYNE GAYOU

INA/GRM, Paris, France  
E-mail: egayou@ina.fr

## 1. INTRODUCTION

*Portraits polychromes* are a series of books associated with multimedia documents presented on the Internet site of the GRM since 2001. In releasing this collection, our primary concern was to increase awareness of the electroacoustic repertoire and the reserves in the GRM archives. The GRM, being a pioneering centre of electroacoustics, is fortunate to possess a consistent and significant reserve dating back to the beginning of the 1950s. At present, the catalogue contains around 2,000 works, accompanied with supplementary documents: composer's biographies, reviews, photographs, documentary movies, radio broadcasts, recorded public lectures, theoretical research work, transcriptions and analyses. In addition to the heritage value of the GRM's collection, the enterprise of the *Portraits polychromes*, with the aid of multimedia tools, aims to advance the progress of research on analysis and the transcription of musical works.

The multimedia transcriptions, produced within the past four years for *Portraits polychromes*, explore different methods of analysis and transcription, and at the same time raise numerous questions:

- What is the relation between score and transcription?
- What is the status of the transcription in the process of musical communication?
- Can electroacoustic music be scored?
- What is the relation between graphic depiction and writing?
- What is the contribution of graphic transcription to the electroacoustic genre in particular?

N.B. This document is correlated to a series of examples of multimedia transcriptions of electroacoustic and mixed works, which are presented on the Internet site of the GRM: [www.ina.fr/grm/acousmaline/polychromes](http://www.ina.fr/grm/acousmaline/polychromes). Some excerpts of these transcriptions are visible on the annual DVD. The present text expounds upon the issues in those works.

## 2. TRANSCRIPTION VERSUS SCORE

In electroacoustic music, the act of composing sonic material directly onto support media, in an interplay

between 'doing' and 'listening', suppresses the stage of writing a score. Graphic transcription of a work has, since the earliest days of the electroacoustic genre, mitigated the absence of visual support of the music, which was the score for so-called 'written' music. However, transcriptions can have several functions, such as being used as a working draft, a basis for analysis, or even an object of analysis, a guide to interpretation, a pedagogic tool to help reveal the work to music lovers, and even provide a medium for working out creative ideas. It can also be used to memorise, and to preserve – like a score. But preserve what?

A brief consideration of this matter enables us to realise that graphic transcriptions of what is heard from a musical work have a very long history. If we confine ourselves to the Western world, the neumes of Gregorian chant are one of the most representative examples in the research into this method of transcription; just as much as the graphic scores of twentieth-century musicians born of the schools of improvisation or from the techniques of chance (cf. the graphic scores of Earle Brown, or of John Cage). But, in the meantime, there has also been considerable research into automatic and mechanical graphic transcription. In general, the most widespread device used today is the spectrogram. It is included in practically all software supporting musical composition and analysis, such as the Acousmographie developed at the GRM (version 1 dates from 1990 and version 3 from 2005).

But what is the difference between a transcription and a score? If everybody agrees on the fact that the score is prescriptive, then in consequence transcription is descriptive and open ended. We must differentiate well between the different uses of transcription. In the case of the transcription of a reputed work, from the classic repertoire, by a transcriber knowing the writing code or style, we can expect a quasi-exact symmetry between a score and a transcription, with the work clearly central. But when we venture into the transcriptions of more complex musical works, and especially those with no established writing code, the range of possibilities becomes infinite. This brings into question the function of perception and creation. In other words, what is happening at the meeting point between hearing and doing? Or between the esthetic and the poietic? In

electroacoustics, the composer of a work recorded onto support media and the transcription of the same work, once finished, have at least one point in common: one listens to a support medium. But sometimes there is ambiguity on the status of the transcriptions because many attitudes coexist among transcribers. Often we find habits rising from the prescriptive tradition: a search for pitches, durations, themes, formal divisions. These transcriptions often leave the readers confused, because they have a hard time discovering the original music. It is a fact that since electroacoustics embraces the entire field of sound, the number of relevant criteria are considerably multiplied in comparison to other musical genres. The methods of classical tonal writing are proving insufficient to represent morphological or spatial criteria. In response to these deficiencies, we encounter many whims in electroacoustic music transcriptions. In return, the desire for universality in electroacoustic music has an advantage, as it brings to the forefront the problem of finding a global music-writing code.

Without abandoning the analytical transcriptions of electroacoustic works, which try to elaborate a new code of writing, it seems important to validate all types of transcriptions, including the freest. Multimedia approaches have encouraged the blossoming of new categories of transcriptions. Interactivity allows us to depart from the rather stiff linearity of previous times. In fact, in the electroacoustic world, each transcription addresses different musical concepts that enable us to articulate in a clearer manner. Each transcriber is free to find the figures which harmonise the best with his/her perception.

### 3. ADOPTING PRESENT MUSICAL ANALYSIS METHODS TO MULTIMEDIA TOOLS, WHILE SEARCHING FOR NEW ONES: SOME EXAMPLES

An advancement in typo-morphologic descriptions, in the Schaefferien sense, is presented by Laurent Pottier, with reference to the work *Turenas* by John Chowning (figure 1). A listing of different morphologies of the identified sounds reflects directly back to their presence in a listening of the work. However, we find that in general, Pierre Schaeffer's description of a vocabulary for typo-morphological description, as presented in the *Traité des objets musicaux*,<sup>1</sup> is not used often enough by analysts. We still encounter many inadequate words to qualify the audio and musical phenomenon, instead of the precise terms like: behaviour, grain, mass, dynamics, melodic profile, etc. The graphic transcription of dynamics and of movement is illustrated by an animated document by Samuel Rousselier (figure 2).

<sup>1</sup>Pierre Schaeffer, *Traité des objets musicaux*, Seuil, Paris, 1966.

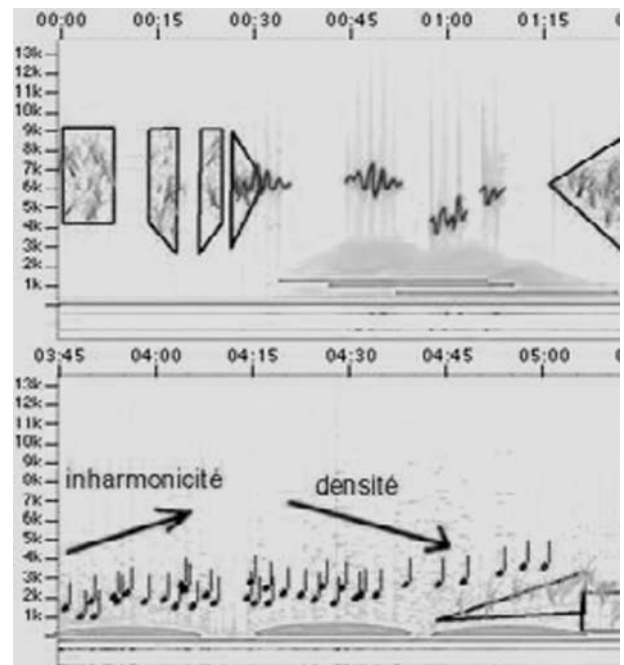


Figure 1. *Turenas* by John Chowning, transcription by Laurent Pottier.

*Esthetic inductive analysis.* The following work in musical semiology by Canadian St phane Roy, which analyses music following the model of tripartition by Jean-Jacques Nattiez, after Jean Molino (1975), proposes inductive esthetic analysis as the principal relevant method to describe electroacoustic music. Let us recall that tripartition consists of cutting the musical act into three parts: the po etic which concerns the production of the music, the esthetic, which relates to the work's reception, and the neutral level which is in between the two. In 'anatomy of a listening', we have an example of a transcription of an esthetic inductive analysis: the composer himself – Gilles Racot – helps us to locate the relevant musical passages, audible in the listening of *Subgestuel*, to illuminate the strategies for listening.

The listening guides described by Fran ois Delalande, that are in three parts, taxonomic listening, empathetic listening, and figurativisation,<sup>2</sup> are partly located in the document on the analysis and transcription of the piece.

These different approaches to the representation of listening testify about the undertaking at hand for multimedia in *Portraits polychromes*. Almost all types of analysis have been addressed. Besides the examples referred to, some works are oriented towards graphic transcription of the sonic space, while others apply themselves to explaining the composer's musical rhetoric. An approach still missing is following research done

<sup>2</sup>Fran ois Delalande, «L'Articulation interne/externe et la d termination des pertinences en analyse», *Observation, analyse, mod les: peut-on parler de l'art avec les outils de la science?* (Actes du 2<sup>e</sup> colloque international d' pist mologie musicale), Ircam/L'Harmattan, Paris, 2002.

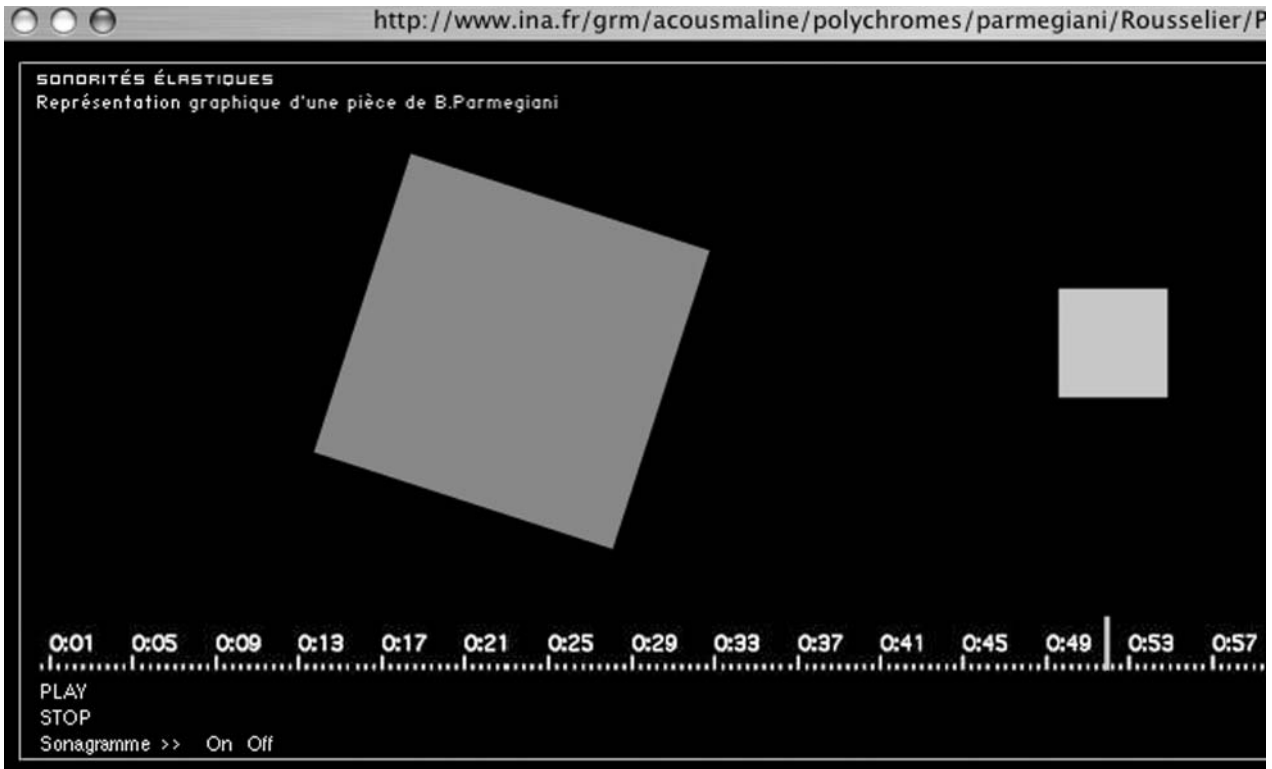


Figure 2. *Etude élastique*, excerpt from *De natura sonorum* by Bernard Parmegiani, transcription by Samuel Rousselier.

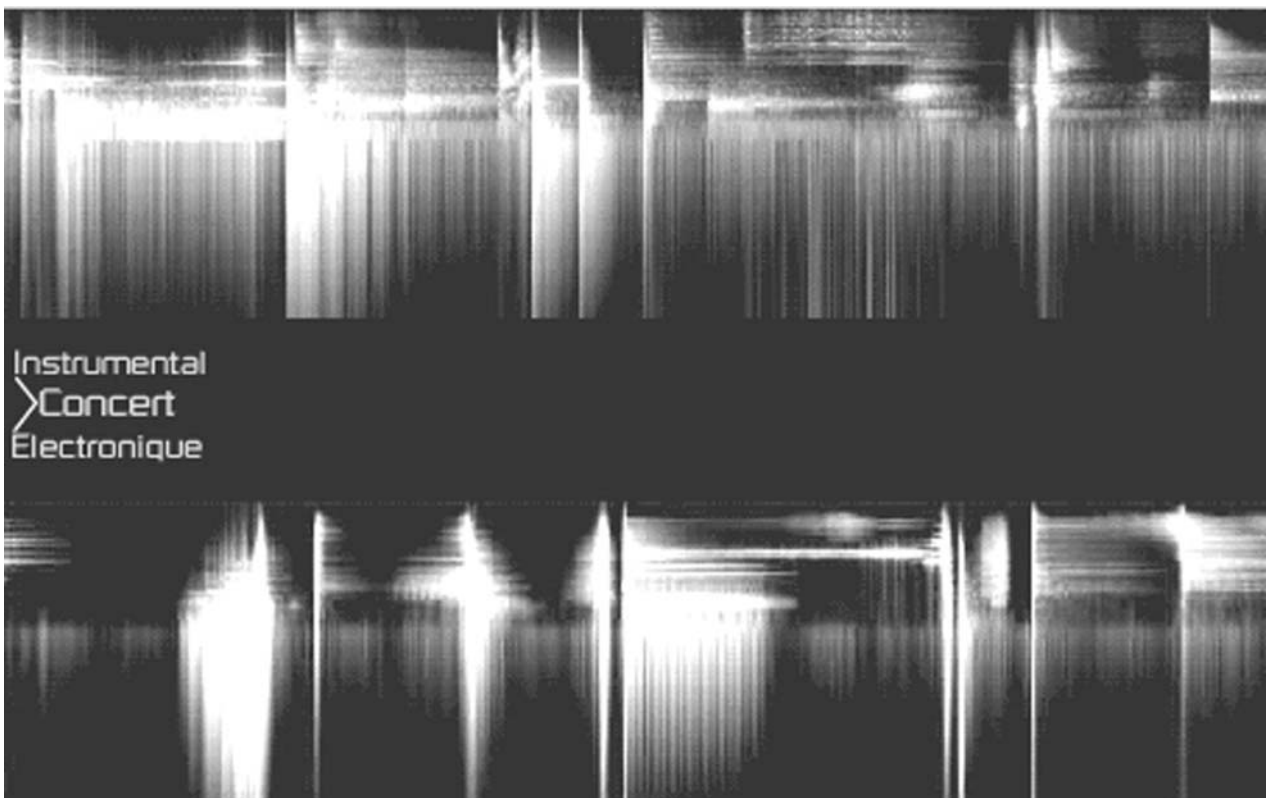
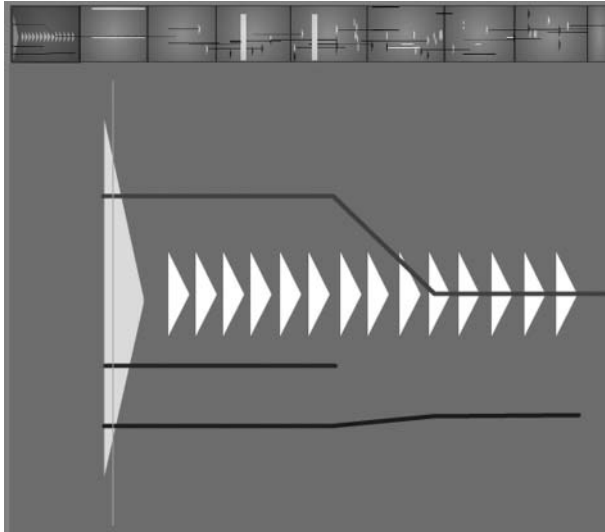


Figure 3. *Subgestuel* by Gilles Racot, transcribed by Gilles Racot and Dominique Saint-Martin.



**Figure 4.** *Vox, vocis, f* d'Ivo Malec. Two different people, Michèle Tosi and Pierre Couprie, have transcribed their listening of the same excerpt.

on the UST – Temporal Semiotic Units – at the MIM of Marseille, following the nineteen identified figures of temporal forms: Fall, Continuous trajectory, Shrinking/spreading, Burst, Stretch, Wavering, Without direction from conflicting information, Heaviness, Braking, Obsessive, Advancing motion, Turning, Attempting to start, Directionless, Suspension-interrogation, In suspension, Wave-like, Stationary, Roaming.

#### 4. SEARCHING FOR A NEW WRITING METHOD, OR TRANSCRIPTION AS A NEW ARENA OF CREATION

François Delalande, researcher at the GRM, speaks about the 'second revolution'<sup>3</sup> to describe the break caused by the arrival of sound recording techniques at the beginning of the twentieth century. As in the thirteenth century, in the Western world, the adaptation of musical composition onto paper was at first a means of memorisation of the work, becoming finally the place for creative work (the first revolution); today, we witness the same phenomenon with recording (the second revolution). The act of recording has moved slowly from being simply an aid to memory to being likewise a medium for creation. Today, the situation is the same for multimedia.

Therefore, it is not a question of finding a general style of writing which is applicable to all electroacoustic works, but simply to place ourselves into the spirit of the research of a specific example. We can see that on the occasion of the quest for a 'universal code' which would permit transcribing all the musical criteria, there seems

<sup>3</sup>François Delalande, *Le son des musiques*, Buchet/Chastel, Paris, 2001, p. 32–50.

to be a slippage from research towards creation. The transcription code which is being developed must allow for plurality, insofar as the perception of relevant sonic events is likewise interpreted in different ways from one listener to another and even by the same listener during a single hearing. And, as the listening experience is fluid, this mobility permits, and even demands, invention.

The transcriptions that we present are situated at the crossroads between analysis and creation. Multimedia tools which associate the sonic to the visual, in an interactive mode, favour the creation of new forms of works. We ask the authors, in those listening transcriptions, to sign their work, as all authors of notated music have done since the eighteenth century. The signature is important because it frees the author from the bane of producing a scholarly analytical transcription, which could be inhibiting for him/her, as well as all other potential analysts. The signature on the analyses also means that there are lots of possible ways of listening to the same work, that each listening is unique, and that all are worthy of interest.

Two examples which illustrate our discussion are shown in figures 5 and 6.

#### 5. A PICTORIAL THOUGHT

In the framework of *Portaits polychromes*, we have decided in favour of a collaboration with different types of people: the composers themselves – our first contacts – but also graphic artists chosen for their open and even educated ears. That last remark justifies the idea, more and more clearly voiced, of the concept of pictorial thought, named in various ways: the sound image, or 'i-sound [i-son]' of François Bayle following the work of Charles S. Peirce, thought image by Rudolf Arnheim,<sup>4</sup> or 'symbol' by many authors. This concept leads us towards the deep layers of our sensations, very likely related to our first sensory motor experiences, memorised, and carved within our cerebral cortex, since early childhood.<sup>5</sup>

The concordance with graphic arts has always been strongly felt by the players in that field of music where sounds are recorded on support media. Doing, in the dialectic of 'doing and listening', would then be the constructing of mental images which could find their resolution in some way, whether a narration, a drawing, a sculpture, a choreography, a film, a musical work. Listening, in the same dialectic, would be the bringing into alignment our perceptual system with the work being heard, to construct images. The idea of image, appropriate to the functioning of perception, appears as a point of convergence between reality and representation. Testimonies by numerous composers confirm this

<sup>4</sup>Rudolf Arnheim, *La pensée visuelle*, 1969–1976.

<sup>5</sup>Cf. François Delalande's works with the teams of Lecco Day Nurseries, in Italy.

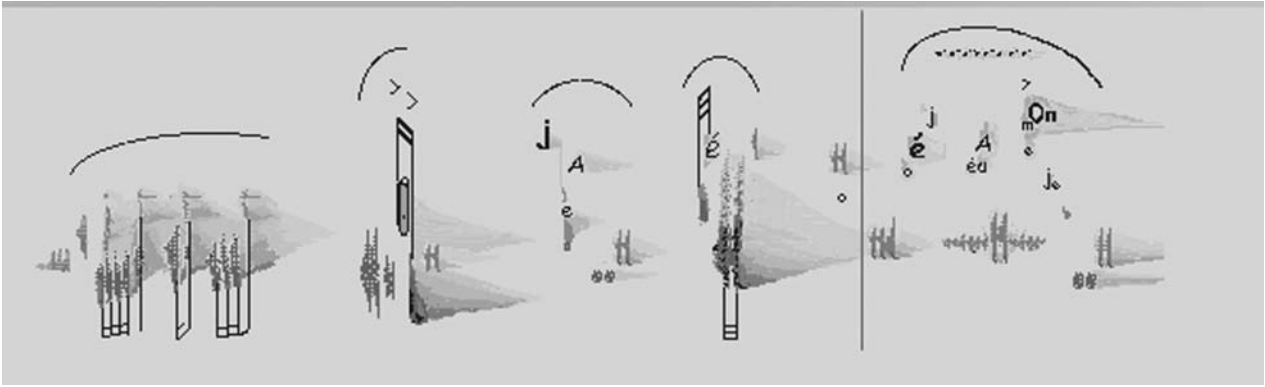


Figure 5. *L'OEil écoute* by Bernard Parmegiani, transcribed by Philippe Mion.

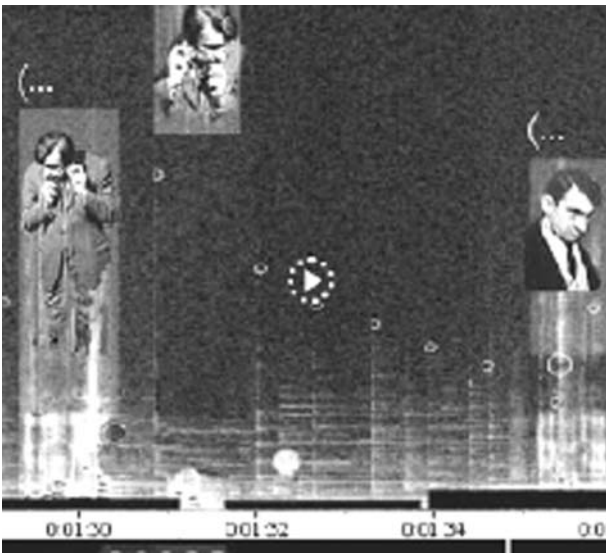


Figure 6. *The temptation of Saint-Antoine* by Michel Chion, transcription by Yoann Sanson.

hypothesis. For François Dhomont, ‘Concert music, notably, this sonic art often compared to the cinema, allows for the discovery of acoustic territories which instrumental composers have left behind as a fallow field; oscillating continuously between truth and mirage, it feeds itself from the strength and the ambiguity of the image’.<sup>6</sup> François Bayle, elaborating on the concept of the i-sound (sound image), has fully described the phenomenon: ‘the image stands between, on the one side, reality, actual things, and on the other side, the concept, the abstract idea. Does it ensure the link? I tend to think so’.<sup>7</sup>

## 6. CONCLUSION

Pursuing an exploration of the limits of the zone between the poietic and the esthetic, where the activity of thinking in images is placed, it seems to us that the route to follow is to develop a code of writing for electroacoustic music.

<sup>6</sup>Francis Dhomont, « L'espace du son », *Revue Lien*, Ohain, Belgique, 1988, p. 37.

<sup>7</sup>François Bayle, « L'image de son; Technique de mon écoute », *Komposition und Musikwissenschaft im Dialog IV* (2000–2003), Imke Misch et Christoph Blumröder, LIT, Cologne, 2003, p. 52.