

# COMPARATIVE ANALYSIS AS A TOOL TO IDENTIFY ASPECTS OF ELECTROACOUSTIC MUSIC COMPOSERS LANGUAGE

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## ABSTRACT

The present article provides a description of how the comparative analysis of Pierre Couprie can be an useful tool in order to help identify compositional strategies by electroacoustic music composers. In the essay entitled *Analyse comparée des Trois rêves d'oiseau de François Bayle*, Pierre Couprie [1] analyses in terms of material, morphology, shapes and graphic representation three pieces by François Bayle constituting the work *Trois rêves d'oiseau*. Besides providing a listening score showing structural aspects of the work, Couprie creates charts and tables reporting correlations among the three pieces by means of, for example: materials articulation table, sound units classification table, morphologies chart, etc. This article has its basis in the following tables and charts elaborated by Pierre Couprie: "The articulation of materials", "Classification of different sound units" and "The distribution of durations". The three pieces featured in this article are *L'oiseau Moquer*, *L'oiseau triste* and *L'oiseau zen*, composed between 1963 and 1971. Such pieces are discussed through complementary charts created in order to point out possible compositional strategies adopted by François Bayle.

## 1. INTRODUCTION

The wide range of compositional possibilities provided by electroacoustic music led graphic notation to be replaced by notations aiming to translate composer's intentions by means of other tools.

When analyzing electroacoustic music, we use aural transcription, in which the analyst focus on the detailed hearing of the piece, constructing an analytical thought.

The methodology of Pierre Couprie analyzes the work in three stages: from ideas to form, through morphologies. Based on the *Traité des objets musicaux* [2], Couprie creates graphs and tables in order to compare different pieces of the same composer, looking for similarities between

them. In this case, the pieces present features quite different from one another. Therefore, we will use the comparative methodology to understand how these three pieces are gathered in a single work by identifying compositional processes.

The tables created by Couprie show the following aspects: articulations of the materials; typomorphological classification of sound units (addressing spectral complexity and duration); study of different morphologies; structure of the work (splitting it into sections and commenting it). The graphs created by Pierre Couprie address: division of durations, classification by types of sound, sound envelopes features, average duration and variation of the three pieces.

Couprie, in the article [3] entitled "Trois modèles d'analyse de *L'Oiseau moqueur*", un des *Trois rêves d'oiseau* de François Bayle", clarifies the way the three pieces were integrated: *L'oiseau moqueur*, *L'oiseau zen* (composed in 1971 with the title *Uirapuru*) and *L'oiseau triste* were brought together in 1971 to compose the *Trois rêves d'oiseaux* created on 6 February at the Guimet museum in Paris (Bayle 1993).

In the same article, Couprie addresses one of the pieces through three different analysis. In the article entitled "Trois modèles d'analyse de *L'Oiseau moqueur*", un des *Trois rêves d'oiseau* de François Bayle", the following methods of analysis were used: identification and classification of sound objects using a Schaefferian typology, comparison of objects with one another following a paradigmatic approach, and presentation of the results obtained through enumeration of a certain number of values (duration, density of objects, etc.).

Through Schaefferian Analysis, Couprie made a record of the most pertinent sound objects, dividing them into four categories: a) manufactured sounds (for example, thick held note, scratch, glissandi, etc.); b) instruments; c) bird; d) man's laugh. Pierre Couprie identified thirty-two sound objects, of which twenty-four were retained for the final classification. Through the use of *Acousmographe*, it was inferred the use of montage as a compositional feature of François Bayle's *L'oiseau moqueur*.

The paradigmatic point of view presents the variations of an object or similarities between different objects. By looking at sound objects from such a point of view, Couprie separated them into three categories: (a) simple or

very simple variations (pitch, duration, etc.); b) objects rarely present (between 1 and 3 times) and c) objects present a number of times with significant variations.

The last part of the article presents an approach based on the detailed and precise measurement of several values, such as importance, relationship with other objects, structural role, etc.). The graphs created in this last approach provided information about the behavior of objects in relation to each other (from highlighting to certain structural relations between objects).

Using three different approaches, Couprie provided different information. With this, we could notice the importance of different approaches in the analysis of electro-acoustic music: comparing different methodologies or comparing different pieces of the same composer.

## 2. DISTRIBUTION OF ARTICULATIONS WITHIN THE THREE PIECES

In the graph representing the different elements of articulation present in the pieces, Couprie identifies and classifies five articulations: a) silence: short silence between two textures or different morphologies; b) punctuation: short sound between two different textures; c) morphological rupture: abrupt passage between two very contrasting morphologies (spectrum rupture or intensity rupture); d) transition: progressive passage between two quite different sounds by means of texture; e) roofing: gradual passage from one texture to another. Couprie points out the set of articulations and their arrangement throughout the three pieces in the following two graphs:

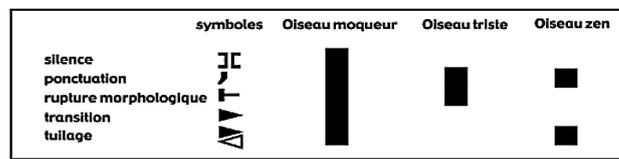


Figure 1. Articulations distribution over the three pieces.



Figure 2. Timeline showing the occurrence of articulations.

Focusing on articulations, we created the chart below emphasizing the way Bayle addresses the focus on moving from one sound object to another. We then organized the articulations into two groups: articulations whose transition is made without intersection between textures and articulations presenting intersection. In Group I we included: Silence, Punctuation and Morphological Rupture. Group II includes: Transition and Roofing.

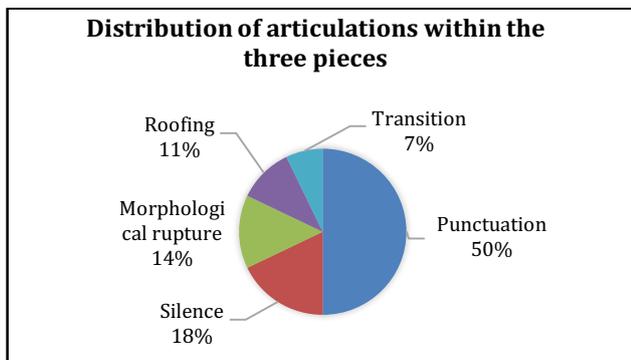


Figure 3. Chart representing the articulations used over the three pieces.

On creating the chart above, we notice that punctuation is the most explored articulation in the work and since it is the only articulation present throughout the three pieces, we can identify it as the unifying feature of the pieces. In addition, we identified the majority of Group I (50% + 18% + 14%) in relation to Group II (11% + 7%), suggesting the duality between articulation groups as a feature of Bayle's compositional process, besides the use of punctuation as an unifying element.

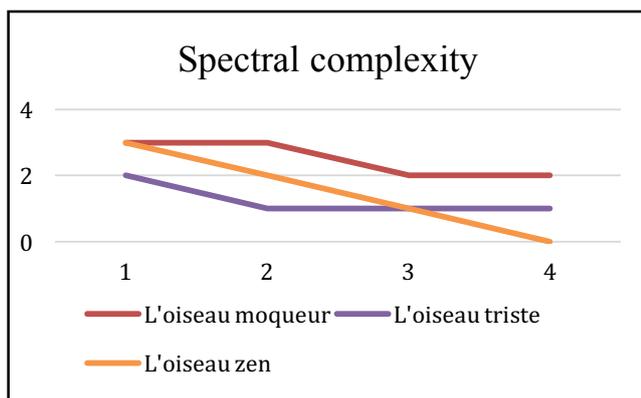
## 3. SPECTRAL COMPLEXITY

When we draw our attention to the spectral classification regarding the duration of sound units, we find the following table developed by Couprie according to the morphological classification proposed by Pierre Schaeffer in the work *Traité des objets musicaux*: according to its spectrum and its duration classification, the light gray color corresponds to the balanced sounds, that is, moderately long duration and moderately complex spectrum. The eccentric

sounds have a long duration and/or a very complex spectrum. In the first two pieces, is predominant the balanced sounds and, in *L'oiseau zen*, the sound units are distributed over different degrees of complexity:

**Figure 4.** Table representing the typomorphological classification of sound units

Based on table above, we created a graph (X-axis: level of spectral complexity, Y-axis: number of sound units) revealing important information about the compositional process of François Bayle:



**Figure 5.** Graph representing the spectral evolution over the three pieces

Every piece starts with a certain complexity and all the three pieces increase their degree of complexity whereas the number of sonic units explored in the pieces decrease. Therefore, we notice again the aspect of progressive decline. This time, in relation to spectral complexity.

#### 4. CONCLUSIONS

With the help of the representations created (Figure 3 and Figure 5) it is possible to see how François Bayle organized some compositional processes used in the three pieces, creating a link between them, uniting them in a single work: *Trois rêves d'oiseau*.

We divided the articulations present in the work into two groups: Group I (great differentiation in the passage from one sound object to another) and Group II (little differentiation in the passage from one sound object to another). From this, we notice how Bayle explores the group in a gradual way: the three articulations present in Group I are the most recurrent in the work and then, the articulations of Group II are explored. We can infer that the progressive passage from Group I to Group II is a compositional process of Bayle.

When we observe the development of spectral complexity, the graph (see Figure 5) indicates the following behavior during the three parts: the complexity of the sound units increases, however, the number of sound units decreases.

That inversely proportional behavior can be considered another compositional process explored by Bayle in *Trois Rêves d'oiseau*.

The present article briefly pointed out how the comparative methodology developed by Pierre Couprie can be better explored in order to identify, by combining different pieces belonging to the same work, characteristics belonging to composers creative processes. With this, we intend to expand the understanding of procedural approaches developed by electroacoustic music composers.

#### 5. REFERENCES

- [1] P. Couprie, "Analyse comparée des *Trois rêves d'oiseau* François Bayle", in *Revue Déméter*, December, 2002. [Online]. Available: <http://demeter.revue.univ-lille3.fr/lode19/index.php?id=500> [Accessed Feb. 14, 2018]
- [2] P. Schaeffer, *Traité des objets musicaux*. Paris: Le Seuil, 1979.
- [3] P. Couprie, "Trois modèles d'analyse de '*L'Oiseau moqueur*', un des *Trois rêves d'oiseau* de François Bayle", in *Les cahiers de l'O.M.F.*, 1998, pp. 50-70.