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Agon, composición electroacústica de Horacio Vaggione: una propuesta metodológica de análisis

Agon, an Electroacoustic Composition by Horacio Vaggione: A Methodological Analysis Proposal

Agon, composição eletroacústica de Horacio Vaggione: uma proposta de análise metodológica

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Resumen

En este artículo se presenta la obra electroacústica *Agon* (1998) del compositor argentino Horacio Vaggione (1943-), relacionada con dos composiciones anteriores del mismo autor: *Schall* (1995) y *Nodal* (1997). Se ofrece una propuesta metodológica de análisis musical basada en los conceptos y reflexiones del propio compositor (tales como *micromontaje*, *mixidad*, *procesamiento*, etc.), con el objetivo de apreciar todas sus dimensiones y componentes, así como sus técnicas de realización y estructuración, todo lo anterior con el fin último de proponer una mejor recepción y apreciación de esta obra.

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Palabras clave: análisis espectral, análisis estructural, análisis musical, música electroacústica, sonograma, técnica de composición.

Abstract

The article presents the electroacoustic work *Agon* (1998) by the Argentine composer Horacio Vaggione (1943-), relating to two previous compositions by the same author: *Schall* (1995) and *Nodal* (1997). A methodological proposal for musical analysis based on the concepts and reflections of the composer himself (such as *micro-assembly*, *mixidad*, *processing*, etc.) is offered, in order to appreciate all its dimensions and components, as well as its techniques of realization and structuring: all the above to propose a better reception and appreciation of this work.

Keywords: spectral analysis, structural analysis, musical analysis, electroacoustic music, sonogram, composition technique.

Resumo

Este artigo apresenta a obra eletroacústica *Agon* (1998) do compositor argentino Horacio Vaggione (1943-), relacionada a duas composições anteriores do mesmo autor: *Schall* (1995) e *Nodal* (1997). Uma proposta metodológica de análise musical é oferecida com base nos conceitos e reflexões do próprio compositor (como micromontagem, mixidade, processamento, etc.), a fim de valorizar todas as suas dimensões e componentes, bem como sua produção e estruturação técnicas, todas as anteriores com o objetivo final de propor uma melhor recepção e apreciação deste trabalho.

Palavras-chave: análise espectral, análise estrutural, análise musical, música eletroacústica, sonograma, técnica de composição.

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Introduction

The importance of having a method that allows an adequate analysis of electroacoustic, digital and experimental musical works is every day greater due to the increasing amount of music that is created in the new era of digital technology: this proposal aims to provide necessary tools to new creators of musical works assisted by various means. The fact of being able to enjoy and fully appreciate a musical work has to do directly with the understanding of the structure, the aesthetic beauty and many other parameters. For an adequate knowledge of the creative process of a composer, it is necessary to refer to certain factors that go beyond the formal question of his work, in order to understand and appreciate it at the highest levels.

In this article we show an exploration of the proposed method through the analysis of the masterpiece Agon by Horacio Vaggione,[1] Argentine composer who has devoted himself to the genre of electroacoustic music since the 20th century (Dal Farra, 2004). The method of analysis that we propose is based on classical concepts of musical, structural, philosophical and aesthetic analysis, combined with new trends of technological inclusion. The general objective is to provide the reader with a proposal for musical analysis applied to the work in question for their better understanding and appreciation; This objective is derived from the hypothesis that gives rise to the need for a method that allows the analysis of electroacoustic musical works and digital sound art in an efficient and useful way.

Rationale

Horacio Vaggione, Born in Córdoba (Argentina), he gave birth to a work called Agon; he conceived it in Paris, in 1998, when he was director of the Center de Recherches Informatique et Création Musicale in Paris. In Agon, Vaggione refines the processes and materials previously heard in another composition that he had previously made in 1997 - in the words of the author himself - which he called Nodal, and this in turn was based on another previous work called Schall (Vaggione , nineteen ninety five). The three works are carried out by the new personal computer systems that were already offered for this time; in this way, a kind of suite is represented with them that can be thought of as a single evolutionary work divided into three parts. This fact is of vital importance since at that point in the creative process, the composer had previously gone through several

[1] La composición está disponible en YouTube: https://www.youtube.com/watch?v=Yl52HiUuCtQ.

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compositional stages that followed one another as an evolution based on two basic principles: on the one hand, it depended specifically on the technological means that were available in certain moments of the author's production stage, such as the use of binary code computers, or programming languages that, although at the time they were wonderful innovations, little by little they were seen to be consumed by new creations and evolutions; on the other hand, we have the part of evolution in the sense of creative maturity that closes the circle in the aesthetic-philosophical process that each composer poses throughout his entire work. However, for methodological reasons proposed by different scholars on the subject, we must make it clear that this approach to technological changes and the maturity of the author himself are issues that in no way should be part of the analysis of an electroacoustic work. Being a work created in 1998, Agon presents considerable differences in both senses with respect to the works prior to Schall; but at the same time, this is a fundamental part of his aesthetic-creative ideology, since the author continues to present resources based on his own fields of specialization, such as granulation or morphological sculpture (Vaggione, 2001), techniques that were never abandoned by the composer despite the technological evolution to which his creative possibilities were subjected.

State of the art

From the aforementioned, we also start from the importance of the analysis of the work, beyond knowing how it is structured or systematized, to find in this a reason in the sense of coherence of the product as part of the author's creative process. We must mention the previous studies to which the work in question has been exposed: we find as a valuable source of information the previous analysis that Curtis Roads makes as part of an investigation that he carries out on Vaggione's work, such as the valuable article The Art of Articulation: The Electroacoustic Music of Horacio Vaggione (Roads, 2005). Curtis Roads had the opportunity at the time to corroborate certain information verbally-in person with the Argentine composer, which clarifies the panorama in some ways: for example, knowing that real percussion instruments were used for the composition. (Roads, 2005).

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A new direction emerges

The aptly named new direction, which refers mainly to the new compositional trend of Vaggione, based on the advances and evolutionary changes in the technological aspect, was crystallized in its electroacoustic composition of the year 1995, Schall, and, consequently, in the rest of the works that succeeded him, including Nodal (1997) and, of course, the work that represents our central object of study, Agon (1998). With Nodal the composer reworked the materials used in Schall: for example, the changes in timbre, background and texture in the third part, where the frequency is high, whose sound is analogous to that of rain on a thin roof. Its density gradually builds new explosions and resonances. The background has a texture that first appears at 11:35 and disappears until 12:09. The closing texture (a rumbling low frequency) concludes as it does in Agon as well, and this conclusion is 39 seconds long without disappearing. This texture continues — at a low amplitude — for several seconds after the final gesture of the piece presents the conclusion of three drumming events as a label, from beginning to end (as in Agon).

Materials and methods

The first thing that we are going to take into account to properly begin with the analysis of this work is the study that was made in a general way by Roads (2005) and that is part of an investigation about all the electroacoustic work of Vaggione. We will use the sonogram tool through the Sonic Visualiser (GNU) program, which presents us with a two-dimensional graph, an X axis (time) and a Y axis (frequency), in order to visualize the music and understand its sound design through the frequency spectrum and during its development in time. The program creates layers where we can see dynamics, phrases and pitch relationships; Therefore, we can say that this resource can help, provide useful information and serve as a complement to other forms of analysis. We will take a tour through the structuring of the work, based on the spectro-morphological theory of Horacio Vaggione, derived as such from that of Pierre Schaeffer (1910-1995). We will see how the composition behaves in its evolutionary process and we will try to give an interpretation regarding the narrative of the work; finally, we will make an analogy with the aspects worked so hard by the composer himself throughout his career and which, without a doubt, are part of this composition.

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Composition analysis

Spectral analysis table

The criteria for delimiting the work Agon by Horacio Vaggione in different sections is based on the following statutes (evidenced in table 1), according to a structural analytical organization:

1) The source material appears pure, or without being almost modified or processed in sections A, A 'and A ".

2) Sections A, A 'and A "are considerably smaller than sections B and C, and have elements in common.

3) The final dry sound of the work is also considered as the delimiter of each section and it appears at the points mentioned, in addition to appearing, of course, as the last sound of the entire work.

4) The bridge is delimited and identified; this is small and very different from all the other sections and serves as a connection to the coda.

5) The coda leads to a moment of emphatic closing and progressive force that marks the climax of the work.

Tabla 1. Horacio Vaggione, *Agon*: análisis espectral

A	B	A'	C	A"	Puente	Coda
0.00.000-1.10.727	1.10.727-2.29.118	2.29.118-2.58.422	2.58.422-4.55.682	4.55.682-6.32.740	6.32.740-6.57.850	6.57.850-8.38.840
11.517 Sonido de clave	1.13.723 Fuego corto	2.29.118 Comienza con la campana timbrada dejada en la sección anterior	3.00.256 Fuego quemando se convierte en material conductor principal	4.55.682 Se comienza con el motivo conductor de la sección A, por medio de la aceleración y ralentización; a continuación, utiliza todos los motivos de la mencionada sección, pero los	6.32.740 Comienza el puente con dos clics seguidos	6.57.850 Comienza la coda (se enciende fuego)

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				granula y combina de muchas formas hasta lograr con esto hacer aparecer el sonido de la campana timbrada		
27.028 Timbal procesado	1.27.980 Clave	Se utiliza una combinación de recursos sonoros de la sección A	3.18.577 Se enciende fuego	5.51.259 Gran campana forte	6.47.719 Segunda parte del puente con dos clics seguidos	7.42.470 Campana
33.901 Timbal procesado	1.32.670 Clave	2.35.422 Se termina la campana timbrada	3.20.051-3.31.127 Se presenta una serie de cuatro explosiones	5.59.494 La campana se convierte en campana timbrada durante toda la sección		7.50.760 Timbal
37.848 Campana seca	1.35.364 Combinación de fuego, timbal, campana seca y campana timbrada	2.37.704 Efecto de fuego quemando	3.42.122-3.44.002 Episodio de platillos secos	6.02.347 Patinado de recursos sonoros		8.05.220 Timbal procesado
57.161 Campana timbrando	1.46.091-1.52.593	2.53.453 Explosión	4.10.322	6.07.960		8.12.120 Se reenciende

	Episodio de platillos secos		Explosión que va en *crescendo*	Timbal y campana procesados		el fuego, que consume todo hasta el final en un *diminuendo*
1.02.879 Timbal procesado y se apaga la campana	1.53.708 Timbal procesado		4.13.151 Fuerte explosión que hace aparecer a la campana timbrada y a los platillos	6.15.385 Pequeña explosión		8.33.810 Sonido granulado como cierre
1.04.969 Timbal procesado	2.01.951 Fuego mayor en *forte* y va disminuyendo		4.28.701 Explosión	6.16.429 Gran explosión		8.38.840 Sonido seco final
1.10.727 Sonido seco final	2.17.020 Fuego disminuido		4.34.877 Explosión procesada	6.32.740 Sonido seco final que parte de dos clics seguidos		
	Comienza una granulación de sonidos		4.37.803 Explosión procesada			
	Comienza la campana timbrando		4.40.613 Proceso de recursos			
	2.29.118 Sonido seco final		4.43.387 Enciende fuego con			

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			fuerte explosión			
			4.55.682 Sonido seco final			

Fuente: Elaboración propia

Results

The work Agon has a duration of 8 minutes and 43 seconds: it opens with a soundtrack of continuous fluttering between the range of 6 kHz and 16 kHz. The speed of the fluttering modulation ranges from 10 Hz to 20 Hz. The continuity of the high frequency band is broken by several bursts composed of diverse colors at certain key moments. It's as if different percussion sounds are dropped into a giant granulator to be instantly padded into bits of micro-sound. A first auditory contact with Agon could simply show a continuous flow of new material, but a deeper knowledge of the work reveals a compositional work of recycling the sound material in a highly efficient way: for example, in the penultimate gesture of the work you can hear a murky swirl in the low-mid frequency band that was already heard in the first 35 seconds. In the last gesture of the job, a triple hit of “tom-click-hiss” first appears at 2'59 "and again at 3'8". Some of the recycled sounds in Agon are strange mutations of other sounds, while others are drawn by hand in a graphical audio editor and are not derived from any original source.

"I considered, listening for the first time, that the sound that appears at 40 seconds in the piece looks like a small metal bell" (Vaggione, 2001, p. 57). According to the composer, the origin of this sound was not a bell, but rather the result of a process of transverse convolution of synthesis. The “bell” sound first appears with a resonance of 750 Hz and then drifts to 1080 Hz (approximately one-fourth magnified) at 59 ". Another frequently recycled sound is like that of a tom attack. -tom. Turning back to the composer we discovered that this was actually a hand-drawn waveform. The tom-tom as a sound is first heard in a flurry of beats at 34 ". Both the "bell" and the "tom-tom" reappear at many points within Agon. A brilliant timpani-like sound is woven into them throughout the entire piece: it is a component of the high-frequency band that flows through most of the piece. A piano cluster, which originated - according to the composer - as a mutation of a percussion sound, first appears at 2'01 ". The end of a rest zone is then marked at 5 '54 ", and this marks a turning point of the ending at 8' 10".

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It is important to mention that Vaggione specialized in granular synthesis, micro-assembly and micro-sound. Vaggione's musical composition has become an interactive process of directly sculpting sound morphologies on multiple time scales. As we can see in Agon, the complexity and subtlety of this music defies textual description, which presents formidable problems of discourse. Fortunately, the composer has written a considerable number of articles about his own aesthetic approach.

In the analysis of the work, we can observe the use of the micro-assembly technique (despite technological evolution): this technique is an essential component of Vaggione's style. In micro-montage, the composer extracts particles from sound files and rearranges them in time and space. The term montage is derived from the field of cinema, where it refers to ‘cutting’, ‘splicing’, ‘dissolution’ and other film editing operations. The term micro refers to the way in which a composer can position each particle of sound precisely on the canvas of time. Digital micro-mounting refers to operations that deal with small sound particles, particles that belong to the micro-time domain (generally less than 100 ms). In this we have, in detail, the musical equivalent of the work of a pointillist painter.

In music, the term pointillism has long been associated with the "scattered series" style of Anton Webern and his followers. Ironically, the technique of the pointillist Georges Seurat (1859-1891), the main pictorial representative and creator of this movement, did not present any kind of analogy with Webern. In contrast, his canvases present a density of thousands of meticulously organized brushstrokes.

Perhaps the best way to distinguish between granulation and this micro-montage is by pointing out that the former is inevitably an automatic process: the composer's brush becomes a refined spray jet of sound color. On the contrary, micro-assembly demands more detailed work, particle by particle, in the manner of a pointillist painter, therefore all this demands unusual patience. It should also be noted that, of course, granulation and micro-assembly are two techniques that can be perfectly intertwined: "Vaggione's granulation techniques share many similarities with this micro-assembly" (Roads, 2005, p. 304).

By means of the programming language integrated into the Carl system, the composer was able to create subclasses of a specific sound object through transformations such as time stretching (or pitch-shifting), where the transformed sounds inherit the morphology of the original sound.

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Next, we propose the concepts of analysis of the work Agon, based on the theory explained by the composer regarding the events that make up his compositions in structural terms and that, of course, are part of the work in question.

- *Topic.* The presentation of the first figures in the work is the "theme": it is with this type of figures that Vaggione defines this concept as such.
- *Mixity.* It begins for the first time with the composition of figures for the instruments and their respective combinations; then the author registers and analyzes them to put their morphological singularities; finally, he composes by configuring the transformations of these figures.
- *Composition technique.* This means amplifying and projecting its morphological protrusions in other regions.
- *Processing (a technique that acts like a prism).* Vaggione points out that the morphological transformations that he puts into practice generate a figurative work and can be projected on the most diverse temporal scales. In the granulation of a sampled sound, “spatial figurations” are produced, thanks to the temporal microdesynchronization technique.
- *Figure. Topic component:* the use of the word figure refers (in one way or another) to the problem of thematic thinking.

An event map as part of a structural analysis, in the sense of use of tools and its own organization, would be the following:

Tema—Mixidad—Técnica de composición—Procesamiento—Figura

- *Morphological analysis.* We will begin with the unification of electronics with instruments; This double space situation is the reason why Vaggione does not use standard techniques (such as reverberation, washing, etc.): "These techniques have nothing to do with the morphology inherent in a sound and its suitability for it" (Vaggione, 2007, p. 117).

This explains the use of the microtemporal correlate in signal engineering; Its use consists, for example, in the generation of replicas of a waveform and the proceeding to desynchronize its phase relations within a microtemporal scale, which creates a sensation of space closely linked to the morphology of sound.

Vaggione prefers to speak of a transformation approach, rather than a process approach, and uses the last word in a more general sense, that is, 'to separate from the

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spectrum'. In reality, there is no other type of important event in the sense of morphological changes in the work, since the author constantly re-presents the same resources continuously, subjected to his already well-known compositional techniques.

Discussion

Agon is a work structured in six sections that can be clearly distinguished through the spectral analysis thrown by the sonogram: a "theme" composed of certain figures is presented, which, in the third section, is presented again mixed and transfigured with various processing techniques, between these sections there is a section B that amalgamates them, and so on, a fifth section that is a variant of the first and third is presented again, a fourth section C amalgamates them and after a very obvious preparation the composer presents a "coda", which is a combination of mixtures of many elements already presented throughout the work, but paying special attention to the point of musical density that takes us from a more or less calm environment to a progressive conglomeration movement of discourse, that is, the work takes us from less to more, without the need to use a large amount of new resources, but with the transformations and variants of the basic elements that are presented from the beginning and that, in some way, are reconstituted, enriching, or evolving in the sense of coherence of discourse, which makes it a very beautiful and interesting work that leaves us with a feeling of very strong atmosphere and that, in a logical sense, we can consider the conclusion of a work in three movements: Schall-Nodal-Agon.

We would have to make a detailed analysis of the other two works mentioned, but in our opinion we could propose that perhaps these three works together would constitute a broad sonata in three movements and that Agon as such, being the last movement (due to the analysis carried out), in the form of a rondo with a coda: AB-A'-CA "-coda.

The first and third sections, which contain the event that appears to be a bell, are not the only ones to contain it, the fifth section does too, but, yes, defragmented in layers. In addition, it should be mentioned that this event does not indicate the beginning or end of any of the mentioned sections, since, in fact, it occurs in each of them in different areas and with different aesthetic and discursive connotations. Otherwise, the linking sections B and C could be taken as B and B ', if preferred, since they are very similar aurally (although for reasons of clarity in the analysis we prefer to call them B and C). The only different link section is the one that takes us to the final “coda”, although we have decided to call it a bridge, due to its progressive and conductive nature.

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The scope and limitations presented in this research have to do mainly with decision-making regarding the morphology and size of each of the sections of the work analyzed in question; These had to adhere to the traditional norms of musical structuring and, in turn, to the spectral and visual analysis that the different types of software used for this purpose yielded. Despite having to adapt the resources and methods to a work like this, we can mention that the results are concrete and demonstrable, since they can be corroborated in the table presented above, with the appearance of the key events recorded exactly in minutes and seconds.

The spectral analysis thrown visually could go a long way; however, this is not the focus of our work. Thus, the subject is open to those who wish to continue studying these phenomena from our foundations. Some important considerations that justify making certain decisions in the results of our new analysis proposal are presented below.

Conclusions

We will start by citing the conclusions that the composer himself writes to try to justify the various reasons that revolve around the creative genesis of Agon:

> I am interested in further investigating the relationship between the meter (as a force cycle meter) and rhythm (as a non-cyclical movement) and this not only at the "macro-time" level, that's why I focus on the most microscopic level that can be reached with our current tools (Budon, 2000, p. 20).

After demonstrating with the previous quote the great need for better technological tools, Vaggione also makes clear the importance of the intervention of the musical analysis, both structural and aesthetic, of the works.

> Like Xenakis, I also recognize the need for a balance between algorithmic composition and direct intervention: articulating a large musical flow through statistical events is unthinkable. But in contrast, it depends on certain singular aspects: discontinuities, figures, contrasts and details. (Vaggione, 2007, p. 119).

Having analyzed the author's speech, we can mention that, through certain strategies, Vaggione has a disconcerting ability to make works of art seem like an easy game. The elements are well defined, the structure is clear, the technique is obvious. It is really difficult to understand this completely, but it is intuited that within the works there is something much deeper; However, the question remains parked, in most cases, without

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looking for any method or tool that helps to understand other aspects, and in the best of cases, trying to use tools that have historically served the same purpose.

Future lines of research

Through this research, a proposal for an analytical method of electroacoustic and digital works is given rise, which resulted in the finding of parameters and singularities that other traditional analysis methods (harmonic, formal, timbral, etc.) could not provide us with.); In this way, it seeks to provide updated tools adapted to the new challenges that electroacoustic works and digital sound art propose for their understanding and appreciation.

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[2] La contribución individual de cada autor en este texto es la siguiente: Luis Antonio Santillán Varela es el responsable de la impostación general del artículo, así como de los párrafos de la introducción (Fundamentación, Estado del arte, Surge una nueva dirección) y de la sección Resultados; Fabrizio Ammetto es el responsable de la redacción de los apartados Materiales y métodos y Análisis de la composición (tabla 1); Alejandra Béjar Bartolo es la responsable de la redacción del apartado Discusión y de la revisión general del artículo. Los tres autores son responsables de la elaboración en conjunto de Conclusiones y Futuras líneas de Investigación.

[3] Cuya línea de generación y aplicación del conocimiento (LGAC) es “Rescate, creación y difusión de obras musicales”.

[4] Cuya LGAC es “Musicología histórica, sistemática y aplicada”.

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Visualización	Fabrizio Ammetto
Supervisión	Alejandra Béjar Bartolo
Administración de Proyectos	Luis Antonio Santillán Varela
Adquisición de fondos	Luis Antonio Santillán Varela

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