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Avant-gardes and the Aleph System: An Artistic Interface for Digital Arts

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ABSTRACT

This paper presents an interface for poetry that has been developed at the Laboratory of Front Poetics (http://labfront.tk). LabFront is a research group registered at CNPq (Brazil) and certified by the State University of Minas Gerais. As one of our activities at LabFront, the development of the poetic system called "Aleph" is a reminder of the homonymous tale by Jorge Luiz Borges, which presents the first letter of the Hebrew alphabet as its protagonist. Aleph would be the point where everything would be contained. Based on this idea, one of the LabFront teams started to make a code for deconstructing poems and to generate a sound expression different from linear reading. In this work I will start by presenting the relationship of this system with the avant-gardes of the twentieth century, and later I will explain how it works in its current implementation.

KEYWORDS

digital arts; Aleph system; immersive virtual reality; poetry reading; artistic installation.

RESUMO

Este artigo apresenta uma interface para poesia que foi desenvolvida no Laboratório de Poéticas Fronteiriças (http://labfront.tk). LabFront é um grupo de pesquisa registrado no CNPq (Brasil) e certificado pela Universidade do Estado de Minas Gerais. Como uma de nossas atividades no LabFront, o desenvolvimento de um sistema poético chamado "Aleph" é uma evocação do conto homônimo de Jorge Luiz Borges que apresenta a primeira letra do alfabeto hebreu como protagonista. Aleph poderia ser o ponto onde tudo estaria contido. Baseado nessa ideia, uma das equipes do LabFront começou a criar um código para desconstruir poemas e gerar expressões sonoras diferentes da leitura linear. Neste trabalho iremos, em um primeiro momento, apresentar a relação desse sistema com as vanguardas do século XX. Posteriormente, explicaremos como o sistema funciona no momento atual de seu desenvolvimento.

PALAVRAS-CHAVE

artes digitais; sistema Aleph; realidade virtual imersiva; leitura de poesia; instalação artística.

I. INTRODUCTION

This paper presents an interface for poetry that has been developed in Laboratory of Front Poetics. Lab|Front is a research group registered at CNPq and certified by the State University of Minas Gerais. The research group:

> (...) consolidates an area of research — artistic and theoretical work — at different borders: knowledge, artistic languages, scientific and technological knowledges. As a group that studies/practices what is on the border and beyond, it chooses the strategy of recognizing and studying conflicts at these fronts. Lab | Front is concerned itself with what is generated (produced, caused, built, hidden, created, etc.) on the edges and through them. It deals with its own conflicts regarding knowledges and languages framings: knowledge of the human being (and body), territory (different ecologies of cities and their urban spaces), game (and the "gamification" of life), art (and the "artification" of life) among other fields and conflicts generated at the edge.[1]

As one of our activities at Lab|Front, the development of the poetic system called "Aleph" is a reminder of the homonymous tale by Jorge Luiz Borges, which presents the first letter of the Hebrew alphabet as protagonist. Aleph would be the point where everything would be contained. Based on this idea, one of the teams in the Laboratory of Front Poetics started to make a code for deconstruct poems to generate a sound expression different from linear reading.[2]

We have started to develop a generative system that could undo a poem and read it through a text-to-speech synthesis mechanism. The Aleph System proposes to reorganize poetic structures focusing on the most used letter of the alphabet (usually the one most used in the poems). By the simplicity of this rule, and its several possibilities of unfolding, we consider the system as an interface applicable to several works of interactive computational art. In 2016, we already used a beta version of the system in the immersive virtual reality installation *Look at yourself* (by Pablo Gobira, Antônio Mozelli and William Melo) in which its role in the work was to produce a disturbance of the interactor's immersion.

The article starts by presenting the relationship of this system with the avant-gardes of the twentieth century, followed by an explanation of how it works in its current development.

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1 http://labfront.tk.
2 Concept and code were created by Pablo Gobira and Antônio Mozelli.

II.ARTISTIC AVANT-GARDES

In the late nineteenth century and early twentieth century, we see poetry appropriating typography and the space of the page, through the experiments of Stéphane Mallarmé and in the *Calligrammes* of Guillaume Apollinaire. Both showed to future generations of artists and poets that the uses of visual, verbal, and also spatial and sound matter were changing. They were mixing and building new artistic objects. At the beginning of the 20th century, with avant-garde artists such as Dadaists and Surrealists, for example, we had additional poetic experiments that led to other practices which included the act of appropriation of what was produced by others. Through the idea of plagiarism and copying, poetic exercises have been carried out since the nineteenth century as we see in *Les Chants de Maldoror*, by Isidore Ducasse or Comte de Lautréamont.

Poetic construction based on artistic appropriation, whether in the nineteenth century through typographic experiments or in the twentieth century when plagiarism and collage become strategies for producing poetry, we see that, both in Dada and in Surrealism, such experimentation is undertaken for exploring aesthetic dimensions. While for Dada the deconstruction of appropriated materials had the goal suppressing art (Debord, 1997) — strategies that we can see in Francis Picabia's *Cannibale* (1920), for instance —, in Surrealist works actions were still based on the search for construction of an innovative poetic composition as aesthetic novelty.

During the first half of the twentieth century, these experiments are carried out and new operative concepts are generated in the search for new forms of poetry. This is evident in the Lettrist Movement, which was founded by Isidore Isou in 1942. In 1946 he launched the bulletin *The Lettrist Dictatorship: notebooks of a new artistic regime*, which had only one issue, and in 1947, he launched *Introduction to a New Poetry and a New Music* and *Aggregation of a Name and a Messiah*, both essays published by Gallimard. In some places, such as in Brazil, the importance of the experiments by the Lettrist Movement has not yet been fully absorbed. Since the 1940s, several artists have passed through the ranks of that movement and we can say other avant-garde practices have unfolded from it through ruptures. The clearest example of this is the International Lettrist, founded by Guy Debord, Gil J. Wolman, Jean-Louis Brau, and Serge Berna in 1952 (Debord, 1996).

In the Lettrist Movement, according to Isidore Isou's reflections, the creation of a discipline called hypergraphology is central. Hypergraphology derives from the practice of hypergraphy:

> The hypergraph is a practice assumed by the Lettrist. The focus of these artists was the word and its deconstruction. The sound of the word, in this process of deconstruction, was valued. The Lettrists sought to merge verbal elements into painting, from word to film, etc., considering imagery and sound as powers of the letter. The letter, or word in process of disintegration, remains a "ghost" in the work. (Gobira, 2012: 65; *my translation*)

The focus on the writing or the *graphos* generates a process of aesthetic synthesis, bringing to the same space the various artistic "graphics". Concentrating on the minimal elements of writing interests us deeply here, considering that what we intend in the Aleph System to concentrate its choices precisely on the repetition of letter sounds, a dismembered poem with reading overlays.

In addition, it is interesting to note how the reflection of Isidore Isou, begun in 1942, is contemporaneous with the story of Jorge Luis Borges (1945), as well as with the publication of his book *El Aleph* (1949). We believe it to be only a coincidence of that decade, but in fact the tale, the book and the Lettrist Movement were under the impact of that violent historical moment that was World War II.

III. THE ALEPH SYSTEM

The Aleph System is an algorithm that works by focusing on a poem or poems. The poem is operated by the algorithm based on the identification of its letters and words. The original verses of the poem available to the system are split (if there is a structure of verses in the selected poem) on the basis of the most frequent letter of the alphabet occurring in the text. In the case of Portuguese, for example, it is usually the letter "a". In the case of English, it is usually the letter "e". At the moment, in its beta version, the algorithm is not yet finalized and some elements of its performance are still performed manually or separately, such as voice synthesis in reading parts of the poem, for example.

While in Borges' tale the Aleph combined everything, our work system cuts and randomly reorganizes the verses for a game of overlapping and repetition of the readings of poem excerpts. At the same time, the Aleph System is composed of a mechanism of speech synthesis that performs the reading of split verses. Thus, the system reintegrates what was broken under a new organization. The algorithm was programmed to read in a male voice, with slight distortion, besides containing an audible frequency that helps in the concentration of the interactor.

While the Lettrist hypergraphy sought to concentrate the spellings, in the Aleph System we are also incorporating virtual reality. Although it is not an exclusive system for virtual reality, we have been using it in installation proposals such as the Imersive Virtual Reality Installation *Look at yourself*, already presented at four events: Exhibition in "Emmet # 8" (National Museum, Brazil, October / 2016); "Guignard Hoje" Exhibition (Guignard School Gallery, Brazil, April / 2017); "Design +" Exhibition (Santa Maria / RS, Brazil, June 2017); and at ISEA 2017 (Colombia, June 2017).

As we work in immersive virtual reality, we have developed the Aleph (Beta) System to work in conjunction with Unity 3D, in addition to using a speech synthesis engine API that can be embedded in other tools.

IV. FINAL CONSIDERATIONS

This work presented the concept and the current form of operation of the Aleph System, a poetic interface that is being developed at the Laboratory of Front Poetics. The Aleph System or interface allows its creators to enhance the development of interactive installations by inserting poems that will be executed by voice mechanisms in a spatialized way and based on interactions with the machine.

Spatialization is related to the interaction performed, especially in an immersive environment. In case of the installation *Look at yourself*, spatialization happens when the interactor's head movements (axes X, Y, Z) are recognized by the algorithm as inputs that trigger outputs. These outputs are the excerpts from the poem clipped and reorganized according to this interaction: a poem read by voice synthesis generating the possibility of overlays and repetitions of the reading to be listened to by those who interact with the artistic work.

Finally, we point out that it is possible to reapply the Aleph System to several poems (and other verbal written texts), and that it is not restricted to virtual reality tools, but it can be incorporated into 2D applications, for example. As soon as the Aleph System is finished, it will be available on the website of the Laboratory of Front Poetics in the same way that we have made available other developed tools and works.

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