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# *Casa das Máquinas: an Artificial Dialogue of Portuguese Poetry*

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**Abstract.** *Casa das Máquinas* is an audiovisual confrontation between two artificial engines — *Máquina de Ouver* and *Máquina Canora* — in a multimodal dialogue that explores the poetic language of Mário de Sá-Carneiro. The poems *Epígrafe*, *Anto* and *Fim*, serve as feedstock to the machines, with their words oiling the internal engines of both entities, pulsating their mechanical universe and stimuli.

**Keywords:** Media Art · Installation · Typography · Sonification · Poetry · Mário de Sá-Carneiro

## 1 Introduction

Over time, poets and writers explored the visual arrangement of typography to insert expressiveness into their works. Although this practice was already visible in the work of some Ancient Greek poets, some Modern artists, such as Futurists and Concrete poets, typeset their work in nonstandard, dynamic and non-linear layouts to fully transmit the emotional charge of their works [2, 3].

*Casa das Máquinas* is an audiovisual installation that generates and presents audiovisual artefacts, aiming to bring its audience into a sensory, emotional experience of the textual inputs, based on the perceptions of these contemporary digital “machines”. Two artificial beings, *Máquina de Ouver* and *Máquina Canora*, appropriate and explore the work of Portuguese Poet Mário Sá-Carneiro (1890–1916), each revealing its own interpretative dimensions of his work.

## 2 The Engines

*Casa das Máquinas* is a confrontation between two mechanical entities, in a pulsating and vocal conversation, that breathes the poetic language of Mário de Sá-Carneiro. In the installation, three of his poems are presented, namely

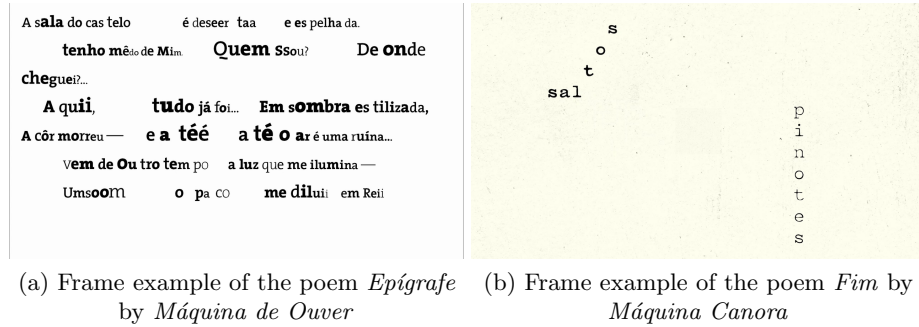


Fig. 1: Examples of the two engines

*Epígrafe* [4, p. 4], *Anto* [4, p. 30], and *Fim* [4, p. 78]. These poems serve as feedstock for these two machines that, with each word, nurture their internal gears with these futuristic stimuli that naturally refer to this mechanic universe.

Entitled *Máquina de Ouver* (tr. Listening/Seeing Machine) and *Casa das Máquinas* (tr. Singing Machine), the two react in contrasting ways to the same textual content, chanting audiovisual odes that seek to highlight distinct dimensions of these poems: the first, with an extensive acoustic analysis of declamations for creating typographic compositions that convey the plasticity of the human voice; and the second, focused on the extraction of emotions inherent in each verse for creating musical compositions that reflect these emotional universes.

The interpretation of each machine is, thus, exposed as a dialogue or antithesis, with the two alternatively revealing their language reacting to poetry and redefining Sá-Carneiro’s poetic imaginary under a mechanical-generative view.

## 2.1 *Máquina de Ouver*

*Máquina de Ouver* is based on a computational system [1] that analyses sound recordings of human speech and creates a visual representation for its expressiveness through typography features (see Fig. 1a).

This experimentation process uses poetry performances as the system input, as they are one of the most dynamic and richest forms of speech in terms of expressiveness. It receives the speech recording and its transcription, analyses the acoustic qualities, the speed variations in the speech, the pauses, and then maps these values to typography variables (*e.g.* size, weight, or leading). In this version, we can hear the poet’s words through the voice of Paula Couceiro.

## 2.2 *Máquina Canora*

*Máquina Canora* is an audiovisual machine that unveils the underlying emotions within the poetic language. The acoustic environment is generated by a computational system named ESSYS [5], that composes musical pieces representing eight emotions: joy, anticipation, trust, fear, anger, disgust, surprise and sadness.



Fig. 2: First public exhibition of *Casa das Máquinas*

These emotions travel melodically and harmonically through timbres of immersiveness, mystery, and mechanic ambience, in a constant dialogue with the typography that reveals the most influential words. The typographic animation reflects the meaning of each verse in a “linotypic dance” of almost visual poetry (see Fig. 1b), with each word establishing an unexpected connection between the machine and the emotional universe.

### 3 The Installation

The debate between these two engines demands an immersive, darkened and enclosed environment for them to co-exist, while inviting each participant to enter and experience this audiovisual space of poetry. Each machine, physically existing in its own display, stand side by side, addressing each other while also addressing the audience, facing each seated spectator to embrace them in their audiovisual universe. The first exhibition of this piece took place in the first edition of the Portuguese Poetry Festival MAP (see Fig. 2), in June 2021.

### 4 Conclusion

*Casa das Máquinas* offers a singular experience, presenting distinctive and artificial reactions from mechanical-generative engines to poetry, which may, in turn, entice novel perspectives from each spectator. We believe these new perceptions may elevate the rich, emotional value intrinsic to the work of Sá-Carneiro, which in turn increases the conceptual and historic value of the installation, as one of the most influential Portuguese poets from the earlier twentieth century and one of the pioneers of the modernism movement in Portuguese poetry.

As insatiable entities, *Máquina de Ouver* and *Máquina Canora* can feed themselves with any kind of written language, fostering future iterations with expanded poetic universes, literature dimensions or even, as an ultimate challenge, the individual, single expression of each visitor who enters this space.

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## 5 Video

The full artefact of *Casa das Máquinas* can be seen in <https://cdv.dei.uc.pt/2021/casa-das-maquinas.mp4>

## 6 Technical Requirements

The proposed installation consists of two audiovisuals artefacts, functioning alternately in two distinct displays. The technical requirements for the implementation of *Casa das Máquinas* are the following: (I) a computer (*e.g.* Windows 10 Pro Machine with, at least, an Intel® Core™ i7-9700, or similar, 8 GB RAM and 125 GB of disk storage); (II) two landscape-oriented digital screens (preferably full-HD 43" screen); and (III) two active speakers. The computer should be connected to the network. Alternatively, video projectors may be used instead of digital screens. Also, the computer should be connected to the two video outputs (either monitors or video projectors) via display port or HDMI, and to the two audio outputs (loudspeakers) via TRS audio cable. If necessary, the author can provide some of the needed technical material.

## 7 Physical/Space Requirements

The installation should be presented in a relatively isolated space, either in terms of audiovisual stimuli, or sources of light, to provide an immersive environment. This space should be, at least, five meters wide and five meters in length. The displays can either place one facing the other, or side by side.

If any kind of spatial and/or logistic limitations arise, the exhibition organisation and curators can suggest a new arrangement of the artwork.