

## Bruno Pereira and Pedro Santos

MIRROR Espelho meu - Performance/installation  
for voice, body and image

Paper

*Video of presentation can be found [here](#)*



# MIRROR: Performance/installation for voice, body and image

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**Abstract.** This paper explores the creative process related to the performance *Espeelho meu* (Mirror), premiered in 2017, in Porto. This performance is the materialization of a creative process into the artistic gesture of the performer. We believe that the creation of new performances is the most effective way to develop the contemporary performative scene promoting new visions of the world. We will briefly discuss the process of creating a vocal gesture that externalizes an inner thought, the role of the body, the cross paths between artistic practice and technology as a mediation that doesn't limit the performative interaction of the performer with the space and the audience. We will also consider ways of exploration of the performance after its physical existence in time through the concept of performative resonance. This resonance would work as a creative tool, again mediated by technology, to reconfigure time, provoking the ephemerality of performance.

**Keywords:** live performance, vocal improvisation, body, performative resonance, multimedia, programming.

## Introduction

In this paper, we want to present the process of conceptual creation, performance and reflection related with the work *Mirror*. This performance/installation for voice, body and image encloses in its description some of the key issues to be developed in the next pages. The performance itself relates directly with the core of the physical manifestation of a concept, of a thought. It comes with the strong belief, expressed during this text, that the creation of new performances is the most effective way to develop the contemporary performative scene. The second layer is present in the installation. It points out to an important issue in this work, an interesting concept that we have been developing in this and other performances/works: the performative resonance. This concept works around the concepts of time and the related ephemerality of performance. For this purpose, it's also described the relevant role of technology, as an interface that grants us the possibility of materializing our conceptual ideas in the performance and installation.

Following the path showed in the performance's title description we arrive to the voice and body. The voice, inseparable of the body in our assumptions, works here as an interface too, that connects the inner thoughts with the exterior world of sounds. In this context, and with a strong improvisation drive, we reflect on its expressive role, always linked with the body, and, in this case, linked with a text.

At last it's also referred the visual layer of this work, through the video projection. This reveals the multidisciplinary characteristic of *Mirror*, important for the increment of layers for those who receive the final object. This performance works referentially to some of the work of artists such as David Moss, Jaap Blonk, Meredith Monk, Merce Cunningham and Laurie Anderson.

*Mirror* is structured on a constant overlapping of different layers of contents and time. This creates, in each moment, a renewed space-time relationship, promoting a permanent internal movement, a metamorphosis that, conceptually, never ends.

## MIRROR: performance/installation

*Mirror*<sup>1</sup>, premiered by the authors on March 10, 2017 at the Faculty of Fine Arts of the University of Porto (FBAUP), is a series of 3 small performances of 9 minutes each that continue in performative resonance (see the performative resonance section of this paper). The 3 performances of 9 minutes are divided in 3 episodes of 3 minutes each.

The first performance triggers the beginning of the installation. It then persists in a slow and progressive metamorphosis through the use of software-controlled processes that record, manipulate and reuse the performance. Each subsequent live performance interacts with these manipulated excerpts of previous ones. Additionally, it is also added to the system as new source material. The installation culminates with the third and final live performance, on March 13.

During the 9 minutes of the performances the audio is played through a set of 4 speakers distributed around the performance area. Using two projectors, video is displayed on the gallery wall behind the performer. The installation part, as referred, happens in between the live performances, without the physical presence of the performer. Visitors of the installation can watch the video projection in the wall and listen to the audio using two pairs of headphones clearly visible in the wall. The same visitor may experience it differently in each moment as the audio and video are algorithmically programmed for a permanent transformation of the pre-recorded material from previous live performances.

*Mirror* is a performance/installation in a metamorphic cycle by its internal evolutionary process.



Figure 1 - Performance of *Mirror*, 10.3.2017, FBAUP

## Assumptions and contextualization

What does it mean to express one's idea of some inward or "subjective" process? It means to make an outward image of this inward process, for oneself and others to see; that is, to give the subjective events an objective symbol. (Langer 1976, 80)

*Mirror* has a focus on the exploration of the improvisation as a tool of greater creative freedom, referring us to what seems to be one of the possible and most interesting ways to contribute for the continuous development of a performative language. It intends to be a small contribution in the construction of a new contemporary performative

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<sup>1</sup> In this link the reader may find the video of the first performance of 9 minutes:  
[https://www.youtube.com/watch?time\\_continue=4&v=zMDUOfncM8](https://www.youtube.com/watch?time_continue=4&v=zMDUOfncM8)

gesture. A gesture that appears and then fades away as an object in permanent becoming, in a metamorphosis movement, in a specific time, space and context.

*Mirror* is a suspension tattooed in the time that receives it. This written output is the answer to the challenge of putting into words what is born of a gesture, a non-linear thought that acquires visibility through devices such as a body and a voice (Pereira 2016).

These words are like another embodiment of the intangible. Parts of the creative process have reached their visible side by way of *an appearance*, as Susanne Langer (1976) would say. This appearance, this dynamic image - to use another concept coined by Langer (1976) that, read by Deleuze and Gil (2001) is embodied in the "plane of immanence" -, is not only a set of physicalities that unfold before us. There are virtual entities that, although they do not have a physical nature like ordinary objects, are real and perceptible. Virtual, precisely because they exist only for perception. Real, when perceived.

*Mirror* was willing to work around the "plurality of ways and means of being-in-the-world, of reflecting and producing versions of the world" (Hannula 2009, 31). It was searching a way of inscribing in our body, in our voice, in our ears, in our eyes, in our thought, singular versions of the world.

In *Mirror* it was decided to develop work in the experimental field of performance, breaking conventions, not by its denial, but by the need to confront the acquired models, as frames of artistic reference that nevertheless serve as a basis for their own unfolding. The acquired technical and aesthetic models unfold themselves in order to confront each other. The voice and the body unfold and gain a character of otherness. The voice *other* (Pereira 2016), which serves as mediator, in permanent interaction with the body, of the intangible of thought. A voice that is close to the primordial root of expiration, close to an unfiltered authenticity, close to the authentic self.

In a foundational multidisciplinary perspective, we take as an example, among others, the dancer and choreographer Merce Cunningham whose new choreographic language was born simultaneously from the "critique of previous [conventional] languages and a virgin soil." (Gil 2001, 39)

There is the will to build, in this performance, an "unusual spectacle, a mystery whose meaning he [the public] must seek out." (Ranci re 2009, 4) It is expected that this type of new performances may compel the spectator to "exchange the position of passive spectator for that of scientific investigator or experimenter, who observes phenomena and searches for their causes."

## The mirror as element

Using the mirror as a central element helps us distorting a linear time and space. Foucault (1984) says, in *Dits et  crits*, on the relations between utopia and heterotopia, that:

[The] mirror is, above all, a utopia, since it is a place with no place. In the mirror I see myself, where I am not, in an unreal space [...]. [...] a heterotopia, since the mirror really exists, and where it has, on the space I occupy a kind of opposite effect; it is from the mirror that I am absent from the place where I am [...]. (Foucault 1984, 47)

The mirror is a fascinating element starting from either the mirror as physical object or as a virtual mirror that exists only in a layer of reading a space and a time.

*Mirror* departs from a site-specific approach and interacts, from its conception, with space and time (9 minutes of performative act/9 columns at the top of the FBAUP entrance foyer, 4 slices of video projection/4 columns at the bottom of the same foyer, a statue/a performer) from there to the deconstruction of a possible pre-signification.

This appropriation of space in the decision of the work macro-structure, as well as of its presentation, is another way explored to remove obstacles between public and performer, between space and event, allowing the non-imposed

interaction, creating the ground for a meeting between performative exteriorization (an output of the performer) and emancipated reading (an output of the viewer).

The concept of mirroring goes through the entire process of creating the work including its text, in Portuguese, written for this performance. The questioning of the mirror and an elaboration on the authenticity of its reflex took part in the construction of the text that accompanied the musical and sonorous development of the piece.

Espeelho meu, espeelho meu, quem espelhas tu que não eu? Quando olhamos para um espeelho... é como se nos desdobrássemos noutro ser que estranhamente se parece com a imagem que temos de nós próprios... Não fossem os espeelhos e nunca nos teríamos em todo... em espeelho... ali... (*smile that becomes a laughter*)... ali... Será aquele espeelho verdadeiro? Porque será outro espeelho mais verdadeiro do que este? Ali... é incrível como sai de dentro, de dentro de nós, e se põe ali, em frente, escancarado.<sup>2</sup>

## Performative Resonance

In the performative resonance, performance is used as a raw material for its own transformation, functioning as the thematic material that will be shaped in a new temporal linearity, a new sequence of *nows* (as Heidegger would call it). In the performative resonance a new spatial-temporal relationship appears with the overlapping of past fragments of time, recombined, transformed, filtered, creating a *zone* (Gil 2004) of the result of the set of micro-perceptions that frame the macro perception of the experience.

This experience, controlled by the interaction of the micro-perceptions, allows the existence of new layers of the macro perception of each instant and, as such, allows the construction of a new and unique present. This interesting feature challenges the works to an exercise of reinvention of a stretched time. This reinvention leads to the metamorphosis of the performance into an installation, or in any other format, identified here by the concept of performative resonance. It is, basically, to explore the potential of a non-linear time that is fittest to translate a thought that is also non-linear.

Byung-Chul Han (2016) considers that thought “has a particular temporality and spatiality” (129). The thought runs non-linearly and reaches this freedom precisely because it is not possible to calculate the time and the space where it develops itself. If this is the case, time, the environment in which the same thought is effective, where it acquires body, must also be free and tendentially discontinuous, not because it must be, but only because it is naturally like that when it accepts its mission of welcoming the substantiation of thought.

In *Mirror* we consider an elastic time, conceptually non-linear, which leads us to a place where the body of the performer becomes time. A space-time that feels no need to be measured or to be aligned. A space-time other that is expected to be able, given its elasticity and complicity, to transform the expected context into another context that is reflected in the space-temporality of the immanence of the work.

This concept of performative resonance can earn even more interest if we consider the difficulty of preserving the performances through documents that capture the ephemeral nature of the performative works. However, this documentation is naturally incomplete, since core issues are lost at the level of spatio-temporal experience and the original context. The performative resonance allows the creator himself to manage the work and its presentation / representation in a coherent way. Is it possible to propose a work that already considers its metamorphosis in time?

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<sup>2</sup> Text's excerpt in Portuguese translated into English here, in foot note.

Mirror, mirror, who do you mirror that not me?

When we look at a mirror ... it is as if we unfold ourselves in another being that strangely resembles the image we have of ourselves ... If it were not the mirrors, we would never have ourselves in total ... mirrored... there ... there...

Is that mirror real? Is another mirror truer than this one? There... It's amazing how it comes from inside, from within us, and it stands there, straight ahead, wide open.

That considers, from the scratch, a form of self-preservation? That considers its own re-enactment? Is it possible to act on the tension of the ephemeral temporality of a performance by stretching it out in a perspective of extending the ephemeral moment of the physical performance and where the performer's presence may not be materially constructed? We believe it is possible with the use of the performative resonance and *Mirror* is an additional contribution to experiment these possibilities and to go deeper in discovering the added value of this concept. One may argue that it's just an effect or a theoretical jargon, but we believe that, if deeply instated in the conceptualization of a work, it will impact subtly but determinately in the visible output of the performance. Although apparently subsidiary to performance, yet the resonance keeps the tension and the performative drive.

Returning to the fruition perspective of the performative resonance, we prefer to consider that the public's experience in relation to it is managed by the auditor himself who makes decisions about the time of contact with the resonance of the work, thus presenting a greater degree of openness within the concept of open work, consolidated by Umberto Eco (1991).

In *Mirror*, the work is structured in 3 performances that resonate, which means that the second live performance already interacts with the resonance of the first live performance and consequently the third live performance will happen with a cumulative result of the performative resonance of the first and second performances. Thus, the performance generates its own resonance and receives it later as a performance itself. A spiral is created that reuses, at a higher level, the same thematic material that, due to the temporal mismatch, acquires a new meaning and impacts differently the development of improvisation and performance. This becomes possible using a technological interface that is fed by the performer itself that provides content to be reused by the machine. We may then consider, and assume conceptually, a content driven control. The control of this part of the technology is done in a deferred way thus freeing the performer from the role of a user of the technology, making the whole process more organic. The focus is on the performance and the technology becomes transparent. The system voice/body is the first layer of mediation followed by the technology as a second layer in the same process.

We consider having found a relevant tool to be explored creatively, within the framework of performative creation. This can also allow the creator to extend the ephemerality of the performance or even consider this extension as a constitution of its own archive. The performative resonance, when one opts for its use, directly impacts the design of the work, since it transforms the temporal relation of what is performatively drawn.

## Technological Implementation

In a traditional context of musical performance practice, most musicians perform works by composers using a pre-conceived instrument; the distinction between composer, performer and luthier is most of the time very clear. In fact, we could argue that it takes a necessarily different set of skills to effectively accomplish each of these functions. However, in the current landscape of audio-visual improvisation/performance practice, to which this work belongs, these roles are most of the times interwoven or even superimposed. In a sense, artists also need to be the inventors and engineers of their own instruments in order to perform. Currently, propelled by advancements in technology, the lowering of its cost and its increasing ease of use, using programming environments such as Max or Pure Data artists are able to materialize their concepts, realizing their full creative potential by building custom solutions for each artistic project, if needed, and tailor them to very specific tasks. This section aims to describe the technical specifications, procedures and related custom programming of the audio-visual installation. Additionally, we will also focus on the decisions and the development of the real-time control of the programmed system by the performer.

The proposed system had the function to record, process and manage the playback of video and audio content, in a feedback chain with the performer. Figure 2 illustrates the spatial arrangement intended for the elements, with the performer in front, complemented by 2 projectors beneath him (each divided in two separate spaces) and 4 speakers (2 at the front and 2 at the sides). A microphone and a video camera are also present, to capture each performance for further processing and playback.

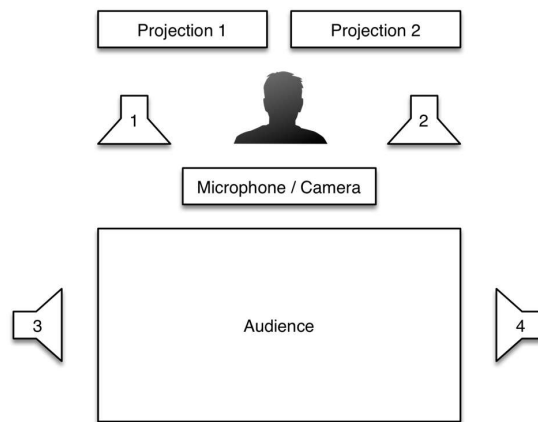


Figure 2 - Schematic of the installation

The main hardware setup of this performance/installation consisted of a computer equipped with a multi-channel audio interface and a graphic card with 3 separate outputs. The audio interface was used to receive the sound captured from the performer's microphone and to output the resulting audio through separate channels to the 4 speakers and to a headphone distributor. The nearest pair of speakers to the performer were responsible for playing a previously structured sequence that served as the base content. This linear media was produced using a DAW<sup>3</sup>, deconstructing parts of the text with a differentiated articulation of the phrase and its syllables.<sup>4</sup> In contrast, the lateral pair of speakers were filled up with recorded excerpts of the performance, played in a semi-random manner, with a temporal discontinuity and overlapping sound elements throughout the installation period. For the installation to not disturb the regular activity of the facilities, a separate audio mix containing the contents of all speakers was purposely built and sent to the headphone distributor, allowing for the audience to experience the installation at any time using two pairs of headphones.

Concerning the video, the graphic card's outputs were connected to two video projectors and to an additional computer display. This display was used to monitor and, if required, to operate the software without interrupting or disturbing the performance/installation, since it is one of its requirements to be continuously running for several days. Content-wise, we worked on several pre-recorded videos shot with the concept of a transforming mirror. In that regard, we captured images that usually do not hold our attention on our daily life with a particular attention to the lights as they have a fundamental role in the way we see what surround us. The performance's rehearsals were also recorded, with the intent of including the experimentation process, as it already encapsulates the potential of the final performance. Lastly, the video camera connected to the computer permitted us to also capture snippets of the live performances for later processing and reuse. The same principles of content manipulation were applied to the visual part of the system, resulting in a progressive growth in rate and density of the elements.

The programming of this audio-visual system was accomplished with the Max visual programming language. A small set of audio and video assets was previously prepared to serve as the basis for the performance. The application we developed received the captured audio and video contents of each performance and saved the resulting files to a folder that was being periodically scanned for new content. This way, the files of each recorded performance became available

<sup>3</sup> In this case we used the software *Reaper* to build the fixed media. The multitrack editing enabled us to create the different layers of deconstruction of the text. All the audio content is created using the performer's voice.

<sup>4</sup> Some of the possibilities that were used in the process of deconstructing the text: Espelhastuque, Espelhastuquenão, tuquenão, espequenão, espequeu, espelheu, tuqueu, quetuque, quetuquenão, quespetuque, lhasquenão, lhaseu, queu, queque, quequenão, tueu, lhastu, [...]

as material that could be used at a later time, in a processed and non-linear manner. Figure 3 illustrates some of the options taken to build the partially random nature of the audio and video playback system and its progression throughout the installation period.

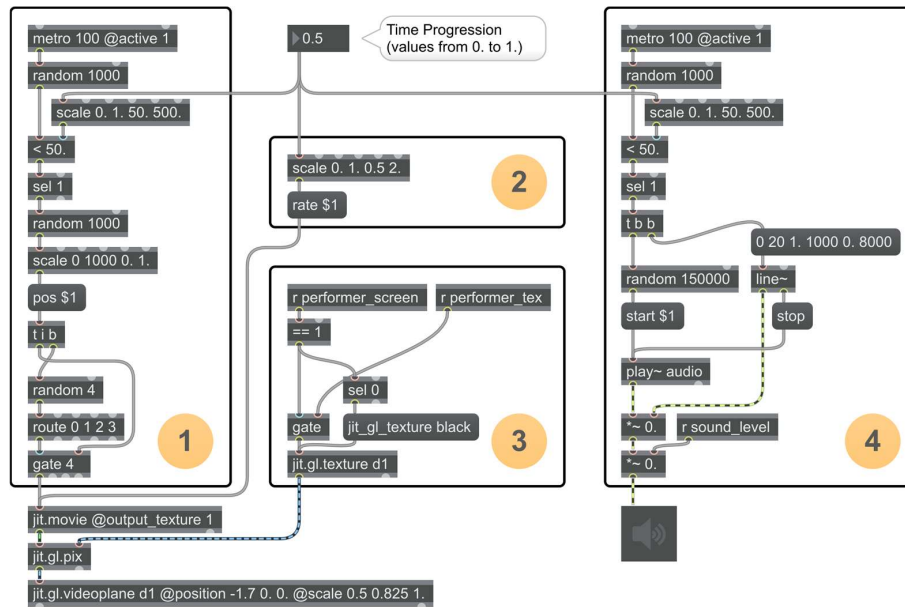


Figure 3 - Excerpts of the audio and video playback implementation in Max

- 1- In section 1, the probability of triggering a temporal discontinuity for the playback of the pre-built video sequence is calculated, progressively increasing from 5% to 50%. After this, the time position is randomly chosen and sent to 1 of the 4 available spaces.
- 2- In this section, the rate of playback of the mentioned video is also increased, from half the normal speed to double speed.
- 3- Section 3 receives videos recorded in previous performances. These performance images follow a similar pattern to the one described before and are combined with the existing material in a randomly chosen space.
- 4- In this section, we demonstrate the methodology behind a random audio excerpt, with the particularity of modulating the audio with an amplitude envelope (fade in/fade out) in order to seamlessly integrate them in the end result.

The video programming took advantage of the OpenGL graphics API whenever possible, using the GPU to accelerate most procedures, instead of relying on the main CPU. This approach gives us good graphics performance (multiple screens, high resolutions and high frame rates) as well as the added advantage of freeing up the CPU for the processing of audio tasks, thus increasing the overall stability. This is undoubtedly a key requirement for a system such as this, since it's intended for it to be continuously active for days on end.

In this performance/installation, as we intended for the live performer to focus on freely exploring its voice and physicality, we tried to minimize the level of explicit control he would have over the programmed system, as feeding it content-wise already plays a fundamental role on both the conceptualization and the materialization of this artistic work. Nevertheless, there are a few ways in which the performer can directly interact with it, described below. Given the conceptual importance of the body, and the fact that we were already capturing the performer as source material for further processing, we thought that a computer vision approach capable of detecting the performer's presence, its position and amount of movement would be appropriate. The performer's black outfit further aids in this process by making it easier to the system to distinguish between him and the background wall where video content is being

projected. We didn't have the intent of making the audience conscientiously aware of the mappings between this detection and the audio-visual response of the system, preferring instead to consider it as an opportunity for a deeper consonant discourse between the performer and the system.

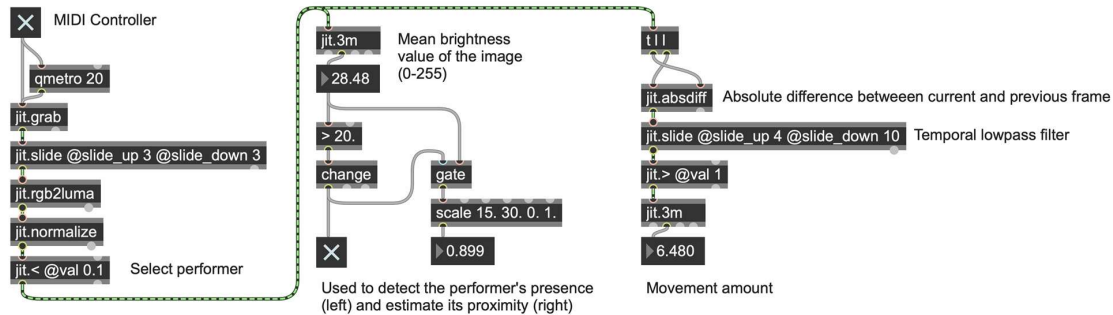


Figure 4 – Max/MSP image processing algorithms to detect the performer's presence, movement and proximity

After the initial setup and configuration of the system, on day one of the performance/installation, a MIDI controller switch is used to start the installation. An additional MIDI controller can switch between performance and installation mode, which have different requirements as described before. In performance mode, the video detection algorithms are turned on and, shortly after the presence of the performer is detected, the system turns on the microphone input, switches audio from the headphones to the 4 speakers, starts playback of the pre-recorded content, and starts recording the current performance, given a minimum amplitude threshold.

Another parameter being continuously measured is the amount of movement of the performer. This directly correlates to a modulation in the rate and density of the algorithmic audio-visual content playback. Lastly, we used an estimation of the performer's proximity to the camera (and therefore audience) and reflected that on the level of intimacy of the sounds. As the performer gets closer to the audience, its live voice becomes progressively highlighted from the pre-recorded content and the reverberation effect becomes less pronounced.

## Conclusions

*Mirror* is a collaborative work, part of an artistic research, and is intended to be a small contribution in the exploration of creative tools within contemporary performing practices. We consider that the contributions of a group of artists, performers, researchers or hybrid figures of such a qualitative or praxis research are of central importance in maintaining open the possibilities of the *new*, in the relationship with the *world*. The contributions of the performers are fundamental in an approach in which the real experience comes from an experimentation that implies a doing.

It sought to make the body and voice, the first layer of the performance's mediation, a vehicle of an energy that goes beyond the muscles and physical limits of the body. From this encounter, between physical movement and the perception of the immanence, grows the performance that impacts the audience, the receiver. The technology allows us the development of the concept of performative resonance that plays with the linear time, granting technology another layer of mediation after a deferred feed of content (sounds and images). This detail assumes a relevant role in this work as it frees the performer from the burden of the constrain of controlling the technology in a real time situation. This brings organicity to the performance and also builds the possibility of a metamorphic installation that runs without the direct interaction of the performer, during the moments of performative resonance.

*Mirror* is a site-specific approach that works with time while problematizing its linearity and exploring other temporalities, detached from the *chronos*. Using technology, we approach a greater number of possibilities of exploration of this and other parameters such as the spatial projection of sound and the immersion of the public in a more active and present sound space.

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