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A proposal of analysis for music-theatre works with electroacoustic. The case of *Double* by Constança Capdeville.

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Introduction

“The coexistence in a concert context of two sound worlds, one acoustic, the other electroacoustic, in other words, output from the loudspeaker” (Bonardi et al., 2017: 9), is a complex issue. And when, other elements from different artistic expressions are added to these domains, such as concert, theatre and dance, combined with music, word, light, gesture and movement, the result is a new language, which is documented as music-theatre, rendering the musicological analysis of this type of repertoire difficult.

The composer Constança Capdeville (1937-1992), an outstanding figure in Contemporary Portuguese Music, left us a great number of works of this genre, including acoustic and electroacoustic sounds and other elements such as those mentioned above. However, most of the documentation from Capdeville’s music-theatre works has still not been gathered properly, or is not in good condition (as for example the tape collection), and moreover there is no articulation and systematization of the existing information in order to reconstruct the performance, which can render any analysis of her works problematic.

Alain Bonardi stated, “the musicologist is simultaneously a listener and a composer, since studying a musical piece implies ‘rewriting’ it” (Bonardi, 2000: 13). This is particularly difficult in the context of contemporary music, since this kind of music no longer relies solely on the score.

The work *Double*, conceived by Constança Capdeville, is paradigmatic and well illustrates this difficulty inherent to the musicological analysis at a methodological level, represents one of our case studies.

In order to provide some consistency to this work, it is our intention: 1) to develop methodologies and tools for the musicological study of music-theatre works, which includes electroacoustics; 2) to understand the work through a systematic analysis of the various documents; and 3) to produce documentation with the purpose of reassembling the work.

Introducing the work *Double*

Double was premiered in 1982 following the Sixth Gulbenkian's Contemporary Music Meetings, in Lisbon. It is a music-theatre work composed by Constança Capdeville for voice, piano, cello, two percussionists (chess players on stage), mute choir (extras), magnetic tape and lights (Serrão, 2006: 33). The work is divided into ten sections: prologue, eight interventions and epilogue. The concert was performed by António Wagner Diniz (voice), João Paulo Santos (piano), Luísa Vasconcelos (cello), Carlos Alberto Augusto (responsible for the recordings and assembly, operation of the tape recorders and sound projection), Dança Grupo (playing the mute choir), Jorge Peixinho and João Heitor (chess players).



Figure 1. Location of the musicians on stage in the premiere of *Double*, in 1982, except the members of *Dança Grupo* that do not appear in this image. With the permission of the Portuguese National Library.

The work is built from various types of duality. An interesting aspect of this duality is that the performers interact with the recordings on magnetic tape, which corresponds to their doubles, but also with themselves since all the musicians have a mirror close to them recreating their images. In *Double*, the magnetic tape recordings acquire an even more significant role because they are the culmination of an experimental work that the composer had been developing over a period of years. It is the first time that the composer uses two recordings simultaneously in a live performance and, in addition, there is such a close fusion between acoustic instruments and recorded sound that the distinction between acoustic and electronic sounds becomes almost imperceptible, therefore these recordings are crucial for a potential re-performance of the work.

Existing materials

Capdeville's collection is currently stored at the Portuguese National Library. However, when we refer to the dispersion of materials, it means that many of these are still in the possession of the musicians who closely collaborated with her. Before the performance, it was common for the composer to meet with each individual musician, and as a result, each one had their own scores or other specific documentation to their performances. Thus, it is said that Capdeville wrote to her friends. The analyses of the work *Double* was made with the recourse to the following materials:

- Scores (besides the general one, there are still those of the musicians, all with specific indications);
- Scripts for sound, lighting, and mute choir;
- Two magnetic tapes (tape 1 and tape 2, both used in the live performance as a musical instrument);
- Additional documentation (such as composer's notes, excerpts from texts, program note, images, and so forth);
- A recording of the live concert (from 1982).

Nevertheless, throughout this study we have encountered some difficulties as, for example: in retrieving widely dispersed documents; in understanding the articulation of the various layers of information contained in these diverse documents, including the distinction between sound sources: acoustic and electronic sounds; and in the comprehension of elements such as gesture due to an absence of articulation on the information or even lack of it (ex. mute choir).

Methodology

In order to systematize all the existing information concerning *Double* it was necessary:

- To retrieve the documents, audio or others, and transfer the content to current formats;

- To analyse the score at the same time as the recording of the live concert was heard, appealing whenever necessary to the scripts of sound, light or mute choir (because the information was dispersed and incongruous), especially to build the general structure;
- To perform a detailed study of the two magnetic tape recordings (tape 1 and tape 2), identifying each sound to understand the tape inputs throughout the live performance (regarding the methodological approach, the procedures and techniques of systematic musicology were used as basis, because we deal with recordings and these require quite precision in the analysis particularly the durations in order to establish some coherence in the reconstruction of the work);
- To interview the performers: the singer, the piano player, the sound technician, the choreographer of Dança Grupo (Elisa Worm) and some dancers (Luísa Vendrell, Luís Carraça, and Luís Carolino).

A comparison between the documentation

The general structure of *Double* was built through the exhaustive study of the recordings (tape 1, tape 2, and the tape of the live concert from 1982), and the comparison of the various documents.

As a preliminary step in the process, we have analysed the waveforms of the sounds, particularly moments in which live sounds were mixed with recorded sounds. The analysis of the tapes, by comparing them, is also an important factor in the recovery of works involving audio recordings. For example, when the recording merges with the live sound, an analysis of the waveform can help in distinguishing both.

The images of waveforms below are exhibited to exemplify some of these moments:

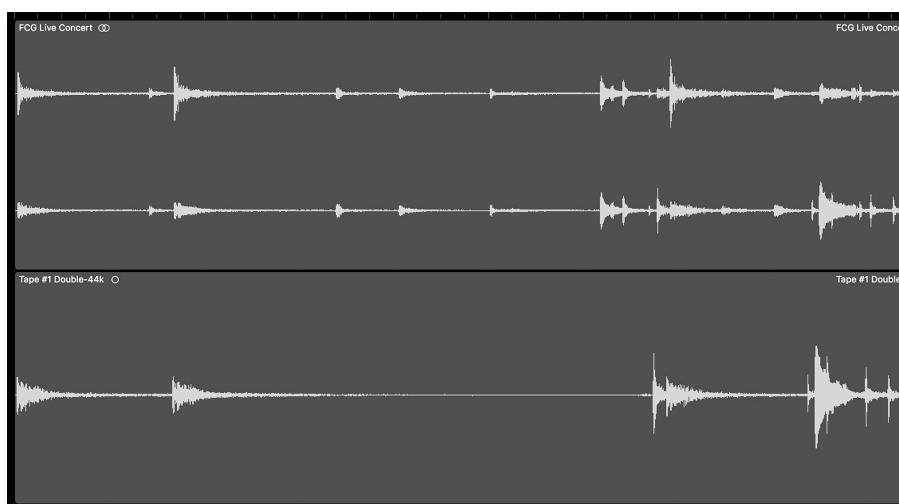


Figure 2. Intervention 4: live piano (tape of the live concert) & recorded piano (tape 1).

This image represents a part of the Intervention 4, in which there is an interaction between recorded and live piano. The same excerpt was extracted from the live concert tape and tape

1. In this extract, the pianist reacts to his double (an effect recorded on tape 1), this is a time when the live sound is practically mingled with the recording. The recorded piano (tape 1) reproduces a “cadenza pedal”,¹ and some abrupt moves such as hitting with the right hand on the piano strings or with finger cymbals against the piano beam; the live piano (tape of the live concert) plays clusters violently and brusquely. Accordingly, the comparison of both recordings proves to be effective in differentiating acoustic sounds from the recorded ones.

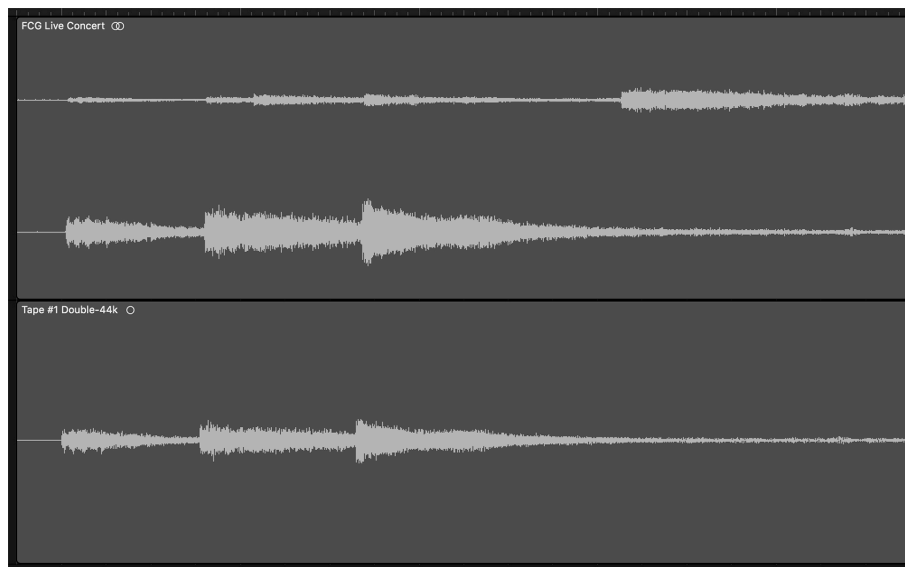


Figure 3. Intervention 2: Sequence of cymbals (tape of the live concert and tape 1).

The image above shows again an interaction between recorded and live sound. A sequence of cymbals in Intervention 2, in which we can also observe some differences.

¹As mentioned by the composer herself in the script of sound.



Figure 4. Intervention 5 complete (tape of the live concert, tape 1 and tape 2).

Figure 4 corresponds to Intervention 5 complete, and here, tapes 1 and 2 appear almost simultaneously, there are interventions by the temple-blocks (recorded on tape 1) and comments of the mute choir (whose sound is reproduced by the recording on tape 2) while they move, in addition in live sound, the voice of the singer interacts with the mute choir: the live voice raises questions and the mute choir responds with interjections (through the recording on tape 2). At the end of Intervention 5 a sound of a pre-recorded gong appears. The waveforms of the recorded gong (tape 1 and tape of the live concert) can be observed, whose information only exists on the live recording and on tape 1. This sound is not mentioned in the scores or in the sound script, so apparently this sound did not exist, we have only noticed through the recordings.

INTERVENÇÃO 5 "DO YOU KNOW MR. JONES?"

VOZ (AD VIVO) / GRAVE VOCAL (GRAVADO) → JOÃO JORGE "DO YOU KNOW MR. JONES?" (TIRAR ESQUEMA DO PICTO) → ENCADEIA COM WICK, PAPERINA E FOLHAS (COMO UMA NUVEM)

CORO MUDO
EI
EXPERIÊNCIAS PARADAS, MINIMIZANDO AR DE DÚVIDA; O MAIS QUE PODE ADIANTAR É UM LEVANTAR DE JOBRANÇAS IRÔNICO E UM OLHAR RÁPIDO PARA O COLEGA DO LADO → DURANTE A ÚLTIMA INTERVENÇÃO DO CORO GRAVADO: "PII, NEI, PI, PI AS CABEÇAS VÃO DEIXAR-SE SENDO UMA A UMA" FIM DA CENA CANTA VOLTA-TE INDI FORÇANTE MENTE PARA A PRÓXIMA

PIANO
COMPLETAMENTE INDIFFERENTE AO QUE SE PASSA À SUA VOLTA. INTERVENÇÕES COM O ELEKTRON COM SE FORTE UM ESTELNO É INTERROMPIDO BASTANTE PELA ENTRADA DA GRAVE VOZ. LEVANTA SE APANHADAMENTE PARA O SEU MATERIAL DE "PARADA" O SEUS E VOLTA MAIS FERVENTEMENTE AO ESTELNO.

CELLO
GRANDE SOLDO, COMPLETAMENTE DEINCRONIZADO E INDIFFERENTE. EM RELATÓ A TODO O RESTO (GRANDE POSE DE VIRTUOSE) TRÓ. DUPLÉ

SOLO CELLO
ETIQUETA ATRÁZ E SONORIDADE

MUSICAL NOTATION:
Solo Cello
EtiQUETA ATRÁZ E SONORIDADE
pian

Figure 5. Intervention 5 complete (score). With the permission of Carlos Alberto Augusto.

Figure 5. represents the score corresponding to the entire Intervention 5, and it is a clear example of the unconventional aspect in Capdeville's musical notation mostly prescribed or using symbols. The study of this section carried out only through the score would be impossible, since the information is minimal. This fact shows the importance of studying extensively the recordings, as one can extract a great deal of information about the work from these. Of course, the information written in the scripts is also extremely relevant.

Interviews with people involved in the work

The production of documentation through interviews with the main protagonists involved in the work have proved to be effective in helping to articulate and systematize the existing information, facilitating the study of the work, as a potential reconstitution of it. Such practice contributes to the location of the various protagonists involved, as well as with new information through their memories and, for instance, by providing new materials, as in the case of Carlos Alberto Augusto, who lent his score with specific indications for the inputs of the recording in the work *Double*. As stated, Hélia Marçal and Andreia Nogueira it is a sort of "[...] production of a document that can somehow materialize the gesture, the movement, the sensation, the ambiguity, the change, which are the fruit of the performative nature of this work, without falling into the temptation to fix it." (Marçal & Nogueira, 2018: 15). Carlos Alberto Augusto clarified some doubts about the recordings, as he was responsible for assembling the tapes, in addition to having operated the tape recorder during the performance. He also confirmed that the chess players only played chess throughout the scene upon a

timbale, used as a table, they never played any instrument during the concert, yet they were accompanied by a recording of the second movement of Beethoven's third symphony. Also, the interview with the choreographer Elisa Worm, as with the other dancers of Dança Grupo was of paramount importance. At first the singer and the pianist, did not remember the existence of a mute choir, because they were concentrating on their interaction with the magnetic tape throughout the performance. Yet, Worm confirmed the existence of a mute choir that moved complementing the interventions with scenic elements, not emitting any live sound, since all sound of the choir was reproduced by the recording.

Results

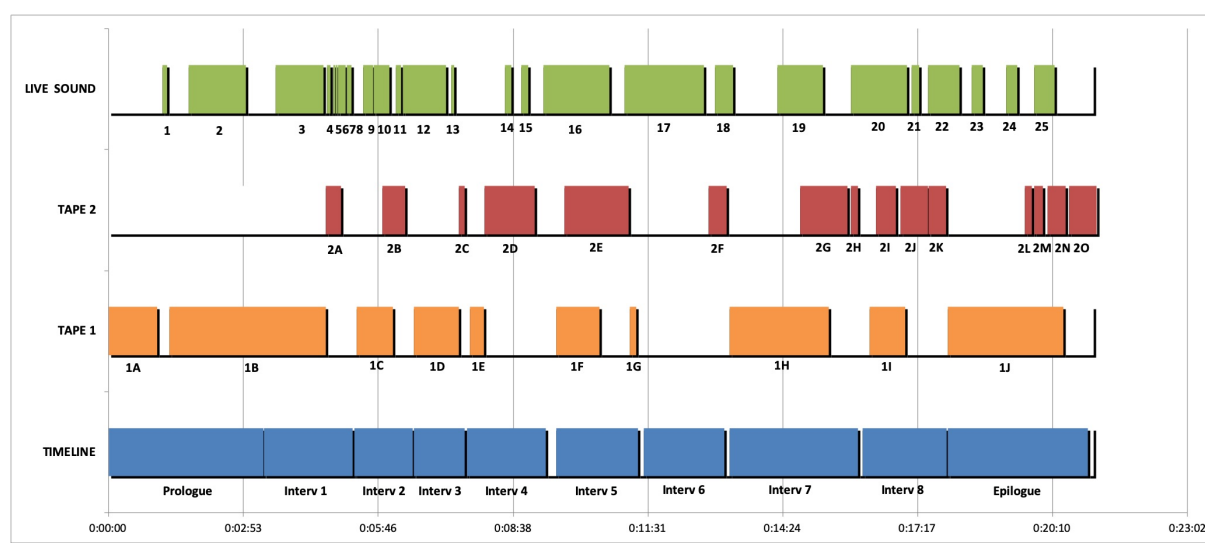


Figure 6. General structure of *Double*.

From the detailed study of the recordings, the tape of the live concert and the tapes 1 and 2 used live during the performance, and by matching the score with the scripts, it was possible to create the general structure of *Double*, as well as the recordings inputs (from tape 1 and tape 2), though, there is still a lack of elements, especially gestures or movements on-stage, and lighting as there is no video recording, which would be of help. In order to complete the analysis of the work, interviews with some performers were useful. Although, as mentioned before, the testimonials of Carlos Alberto Augusto, responsible for the sound projection, and of Elisa Worm, were fundamental to understand some features and absence of elements, the documentation of works as *Double* is still a work in progress. For that reason, as addressed by Van Saaze et al., it is important to adopt other kinds of musicological approaches such as: observing the participation of artists in workshops and analysing rehearsals, live performances or recordings of previous performances, when available, as other forms of documentation (Van Saaze et al., 2010: 21).

Conclusion

The study of *Double* from the comparison of the recordings, as well as the scores, scripts, and other additional materials demonstrated to be fundamental to recover the work, while also reinforcing the importance of preserving the audio carriers, as the complementary documentation about the work. This is a complex work, mainly because during the live performance several components are being controlled simultaneously, such as: two recordings on magnetic tape, performers, lighting, scenic elements, visual elements, gesture, and so forth. Another aspect that contributes to the complexity of the work is the duplicity inherent to the several elements of the performance, which creates a kind of aural confusion to the listener, perhaps intentionally. *Double* is the culmination of sound experimentations, on which Capdeville had worked for almost ten years, since this is the only work of her production that uses two recordings handled simultaneously during the live performance, something particularly complicated taking into account the technological and technical means available at that time. In addition, *Double* demonstrates the immense originality of Capdeville and, especially, her imprint in the context of contemporary Portuguese music by evidencing the experimental feature of her music.

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