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Multidisciplinary Improvisation Consort in Brasov

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Abstract: *Interacting electronic processing and spatialization with acoustic instruments has been done by many performers over the past years. This consort aims to continue the exploration of musicianship through technological interaction along with visual music inputs by means of video artistry collaboration. We thrive in improvising and reacting to each other by what is presented in terms of sound and image, where ultimately a musical outcome is presented to the audience.*

Key-words: *music, performance, improvisation, technology, immersive sound, visual art*

1. Introduction

The fusion of traditional musical instruments with cutting-edge technology has ushered in a new era of sonic exploration and artistic expression. This multidisciplinary approach not only enriches the auditory experience but also engages the audience on visual, spatial, and emotional levels. In recent years, the convergence of electronic processing and spatialization with acoustic instruments has become a fascinating avenue for musical exploration. This ensemble aspires to delve into the realms of musicianship through intricate technological interactions, seamlessly blending the auditory with the visual through collaborative efforts in video artistry. Our primary focus is on the art of improvisation, fostering a dynamic interplay between musicians and technicians, as they respond to both sonic and visual stimuli. Through a synergistic approach to sound and image, we aim to craft a unique musical experience that is not only heard but also visually perceived, offering an innovative presentation to our audience.

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In the specific case of this consort, we have a trombone, which is known for its versatility and expressive capabilities, and as an excellent platform for musical improvisation. Building on the rich history of jazz improvisation, contemporary trombonists draw from a diverse range of influences, creating spontaneous compositions that transcend traditional musical boundaries. Artists like Vinko Globokar, Albert Mangelsdorff and Ray Anderson, among others have been pivotal in expanding the role of the trombone in improvisational contexts.

The integration of electronic processing into trombone performance provides a transformative dimension to the instrument. Utilizing effects processors, loopers, and synthesizers, musicians and technicians can shape and manipulate the timbre, pitch, and dynamics of the trombone in real-time. The work of musicians such as George Lewis showcases the symbiosis between acoustic instruments and electronic processing, highlighting the vast creative possibilities that emerge from this synthesis. Advancements in spatial audio technologies have revolutionized the way audiences perceive and interact with music. Musicians and technicians exploring sound spatialization can employ techniques such as *ambisonics* and *binaural audio* to create immersive sonic environments. By moving sound sources three-dimensionally, artists like Trond Lossius, Bent Leather Band and Natasha Barrett have pushed the boundaries of spatialized music, challenging traditional notions of concert hall acoustics.

To enhance the immersive experience, visual projections play a crucial role in tandem with the music. Artists can collaborate with visual designers to create synchronized projections that respond to the nuances of the performance. The work of musicians like Ben Neill and his *mutantrumpet* project exemplify how visual elements can complement and enhance the auditory experience, creating a multisensory narrative for the audience.

2. The Consort

For its three participants, a Multidisciplinary Improvisation Consort (MIC) performance is a consistent improvisational act. Throughout, form and content are extemporaneously generated and, since the output of each participant is affected by and simultaneously affects others, improvisation is also interactive, determining implicit and constant dialogue.

In a departure from traditional musical collaborations, our ensemble has an actively member to create a holistic audio-visual experience. The visual component

is not merely a backdrop but an integral part of the improvisational dialogue. Video artistry serves as a dynamic counterpart, responding to and influencing the musical performance in real-time, resulting in a truly interdisciplinary and synesthetic presentation. Improvisation lies at the heart of our artistic exploration. Musicians, technicians and visual artists within the ensemble respond intuitively to the dynamic interplay of sound and visuals, creating spontaneous compositions that evolve in real-time. This emphasis on improvisation ensures that each performance is a unique and unreproducible journey, fostering a sense of immediacy and connection with the audience. The culmination of our exploration is the presentation of a musical outcome to the audience. This outcome is not confined to the auditory realm alone but extends into the visual, offering a multisensory experience. Our goal is to transcend the traditional concert format, providing the audience with an innovative and immersive encounter that stimulates both the auditory and visual senses. In essence, our ensemble embarks on a journey where technology, musicianship, and visual artistry converge to create a performance that transcends traditional boundaries. Through improvisation and collaborative exploration, we seek to redefine the concert experience, inviting our audience into a realm where sound and image coalesce to form a truly unique and captivating artistic expression.

2.1. The Trombone Player - Paulo Perfeito

On the surface, from an acoustic performer´s perspective, there appears to be little to no difference between a performance with MIC and a jazz mainstream performance. However, an added layer of indeterminacy, not commonly observed in jazz mainstream performances is prompted by a wider array of creative possibilities. If in a jazz performance the narrative is conveyed mainly through exchange of pitch and rhythm, in MIC the dialectic medium is expanded by visual content and a much wider array of sonic parameters.

Foremost, parameters like timbre, extended techniques, dynamics, tessiture and density, which are usually subordinate to pitch and rhythm, gain importance in the context of MIC's performances. By exploring these parameters, which in my case find inspiration in the avantgarde styles of Albert Ayler and Lester Bowie, the acoustic instrument is able to develop sonic material in a multiplicity of axis, complementarily to linear melodies. In order to clearly define each individual's creative space, it's my own creative prerogative not to use sound processing devices other than acoustic ones – mutes, fabrics etc.

Reacting and interpreting visual stimuli and electronic processed audio containing combinations of pitch, rhythm, but also noise and real-world samples stretches one's musical creativity to extremes. Intuition, subjectivity and momentary predisposition play a key role in the artistic outcome. In my experience, primary colors, geometric shapes and sounds that can be easily interpreted as musical elements, tend to inspire similar dispositions and outputs in most every performance. Conversely, less common hues and shapes, and more ambiguous sonic content will incite diverse outcomes every time.

Another interesting challenge arises from occasionally being fed-back my own processed sonic material. Knowing this, I can generate/propose phrases and fragments in the anticipation that Marco will assimilate, process and integrate them in the sonic atmosphere so I can interact with myself in fugal style. Consequently, more than in any other setting, my creative process considers the potential applications of the content I generate myself. Creative possibilities for this consort are nearly limitless and each performance is a clean slate for performers and audiences. In so far as practice-based research is concerned, the laboratorial and collaborative nature of the consort provides an ideal setting for experimentation and analysis, as well as stimulus for collective advancement.

2.2. The Sonic Artist - Marco Conceição

The integration of electronic elements with acoustic instruments has a rich history, with pioneers such as Edgar Varése, Karlheinz Stockhausen and Pierre Boulez experimenting with electronic sound manipulation as early as the mid-20th century. Building on this tradition, contemporary performers have explored the potential of real-time electronic processing, creating a dynamic fusion of traditional and modern sonic landscapes.

Our ensemble places a strong emphasis on the symbiosis between acoustic instruments and electronic processing alongside with the musicianship between all the key players of the consort (e.g. musician, technicians, video artist). Through the use of effects processors, synthesizers and other electronic tools, we seek to extend the sonic possibilities of an instrument, in this case the trombone. This interaction allows for a real-time dialogue between the acoustic and electronic elements, creating a fluid and dynamic musical conversation, which is mediated by all performers in their specific roles.

The exploration of spatialization adds an additional layer to our sonic palette. Leveraging spatial audio technologies, we aim to immerse the audience in a three-dimensional sonic environment. By moving sound sources within this space, we enhance the immersive quality of the musical experience, inviting the audience to be enveloped in a multidimensional soundscape.

2.3. The Visual Artist - Pedro Santos

Given the context of this performance, and the desire on capturing and processing the other performer's musical output, I decided on using an audio-reactive visual approach. Nicholas Cook (1998) is of the opinion that “duplication of information across sensory modes” should not be considered multimedia, as multimedia is predicated by difference. However, can it really be completely redundant? Michel Chion (1994, p. 21), referring to the “added value” effect of sound and image, mentions that “added value works reciprocally. Sound shows us the image differently than what the image shows alone, and the image likewise makes us hear sound differently than if the sound were ringing out in the dark.”

The audio-reactive visual instrument was conceptualized and programmed according to the context of our performance. This time, the visual premise was to be able to visually distinguish each of the other instrument’s discourse, as it naturally happens on the auditory domain. Hence, each instrument was represented by a specific tridimensional object that is modulated by the waveform of each sound's instrument, captured at the performance in real-time. The contrasting roles and timbres of the other two instruments, trombone and electronics, were reflected on the complementarity of the chosen shapes and colours.

The trombone was represented by a golden colour, alluding both to the visual colour of the horns section, as well as to the warmth of the produced tone. Being a monophonic instrument, it was mainly represented as a single linear object, centred on the screen, reflecting its importance in the musical discourse, and oriented in a vertical manner, given its melodic function in the performance.

The electronics chosen colour was a light blue, a cold colour that alludes to the digital synthetic nature of the processed sounds, and adequately complements and contrasts with the trombone. Being polyphonic in nature, often simultaneously playing several layers of generated or processed sounds, its representation was mainly characterized by a multitude of circular objects derived from the instantaneous waveform, sustained in time through a feedback chain and

progressively processed in terms of position, scaling and rotation, relating the visual domain to the complexity and diversity of the sounds. The pivotal position of these objects often surrounds the trombone, with a tendentially horizontal orientation, reflecting its complementary accompaniment function.

Regardless of the fixed hue and saturation of each instrument, its intensity and transparency are always dynamic, reacting to the loudness factor of each instrument's sound, lending to a sense of unity to the aural and visual domain, by proportionally relating sound and light energy.

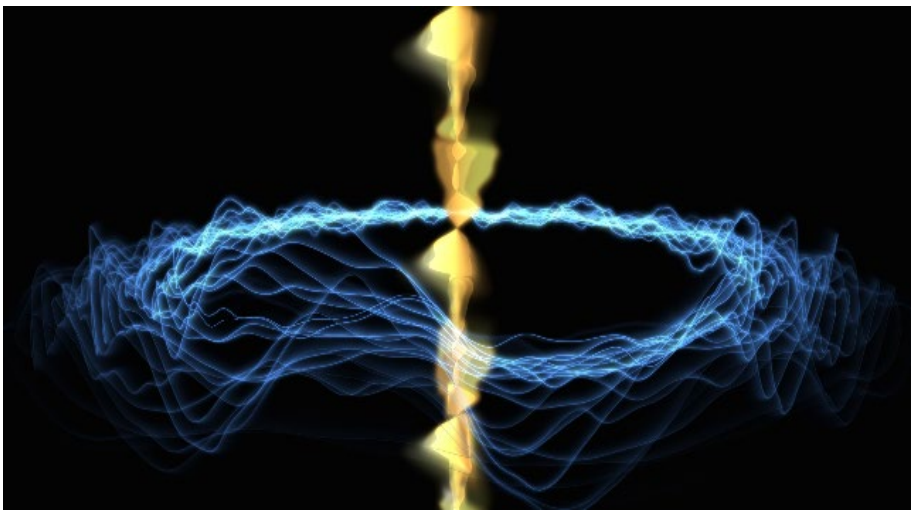

Fig. 1**.** *Example image of the audio-reactive visual instrument*

The aforementioned principles were intended merely as a starting point, not as an immutable configuration, as the visual instrument was built to actually be played at the performance, by reacting to the other musician's output and, hopefully, influenced by what they see, also instigating reactions on their part in return. The most useful and significant parameters to be controlled in real-time were chosen, such as the objects' position, rotation and scale, the camera's point of view and orientation, and other additional effects of the generated images.

The chosen control method for the manually controlled parameters consisted of a MIDI controller, responsible for controlling progressive values mapped in its faders and knobs, and on/off functions using its buttons. Additional parameters were also mapped and controlled directly on the laptop screen's GUI.

As the complexity of a visual instrument such as this increases, so does the number of its control parameters. Some of them might be user-controlled, but for practical reasons such as simplicity and intuitiveness others will often need to be fixed or automatically adjusted, according to some pre-determined rules. In some cases, the use of indeterminacy, randomness, probability, and other strategies, as used by video art pioneers such as Nam June Paik, might constitute a useful resource in conferring movement and some unpredictability to the end result.

3. Conclusions

The Multidisciplinary Improvisation Consort (MIC) develops its artistic work along the lines of practice-based research. The creative processes, methods and techniques employed in our practice are simultaneously artistic creation, applied research tools and an integral part of the research output. The convergence of trombone improvisation, electronic processing, sound spatialization, and visual projections exemplifies the boundless possibilities when traditional art forms embrace modern technology. This innovative approach challenges the conventional concert experience, providing audiences with a multisensory journey that transcends the boundaries of traditional musical performance. As artists continue to explore the intersection of music, technology, and visual arts, the potential for ground-breaking and transformative performances remains limitless.

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